International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 02, February 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

ENHANCEMENT IN 5 PEN PC TECHNOLOGY

[1]Dhanashri K. Khairnar, [2]Neha R. Khairnar,
[3]Simran I. Birdi, [4]Pappukumar G. Yadav

[1]Technical Assistant, Dept of Computer Engineering
[2]Lecturer, Dept of Computer Engineering,
[3]Technical Assistant, Dept of Computer Engineering
[4]Tech. Assistant, Dept of ComputerEngineering
Guru GobindSingh, Polytechnic, Nashik (India)

ABSTRACT

P-ISM ("Pen-style Personal Networking Gadget Package"), which is nothing but the new discovery, which is under emerging, stage by NEC Corporation. P-ISM is a gadget package containing 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 linked with one added through short-range wireless technology. Thecomplete set is also linked to the Internet through the cellular phone function. These own gadget in a simple pen style supports the ultimate universal computing.

Keywords: P-ISM, Display,Camera, Cpupen, Battery, Virtual keyboard, Bluetooth, Wireless Connectivity, Etc.

I INTRODUCTION

Communication Technology is quickly increasing in this modern world. Computer, as everyonedistinguishes, is the main communication machine used. Since the time computer has been created scientists and engineers have been trying making it more and more compact.FivePen Pc Technology is called as P-ISM ("Pen-style Personal Networking Gadget Package"), is nothing but the new acknowledgement, which is under developing stage by NEC Corporation. Five functions P-ISM is a gadget package including: a CPU pen, communication pen with a cellular phone function, virtual keyboard, a very smallprojector, and a camera. P-ISM's areconnected with one additional through short-range wireless technology. The full set of P-ISM is also linked to the Internet through the cellular phone function. This personal gadget in anunnoticeable pen style enables the ultimate universal computing.

International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 02, February 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

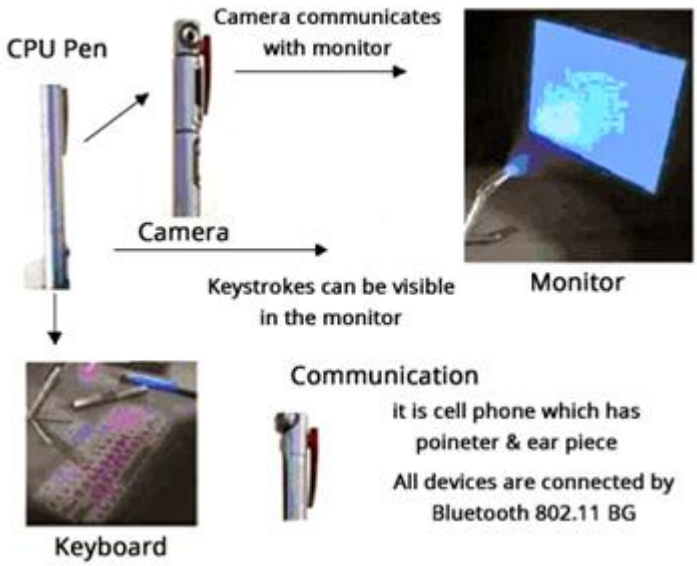

Fig: 1 Diagram of 5 Pen Pc Technology

1.1 COMPONENTS NAME

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 × 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

Fig.1.2 Components name

Table 1: Component of 5 Pen PC Technology

II HISTORY

The theoretical prototype of the "pen" computer was made in 2003. The prototype device, named the "P-ISM", was a "Pen-style Personal Networking Gadget" created in 2003 by Japanese technology company NEC. The P-ISM was introduced at the 2003 ITU Telecom World held in Geneva, Switzerland. The designer of the 5 Pen Technology, “TourIchihash”, 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 required a product that you could touch and sensation. Further, the intent is to allow for an office anywhere.” “The design concept uses five different pens to make a

ISSN (O) 2454-9665
ISSN (P) 2454-0663

computer. Pen first is a CPU, next is camera, one creates a virtual keyboard, alternative projects the visual output and thus the display and another communicator (a phone). All five pens can rest in a holding block which revives the batteries and holds the mass storage. Each pen communicates wireless, possibly Bluetooth."

2.2 CPU PEN

The functionality of the CPU is completed by one and onlypen. It is also known as computing engine. It contains of dual core processor fixed in it and it works with WINDOWS operation system.Usually, a CPU is a main element of a computer which performs the roles of a computer and also it carry outs the orders of a computer program. A central processing unit performs its operations in four steps and they are:

- Fetch
- Decode
- Execute
- Write back

Fig.2. Diagram of CPU pen

2.1.1 CONTROL UNIT

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

2.1.2 MICROPROCESSOR

Previous generations of CPUs were implemented as discrete components and numerous small integrated circuits (ICs) on one or more circuit boards. Microprocessors, on the further hand, are CPUs manufactured on a very minor number of ICs; generally just one. Additionally, as the ability to construct exceedingly small transistors on an IC has increased, the complexity and number of transistors in a single CPU has increased dramatically.

ISSN (O) 2454-9665
ISSN (P) 2454-0663

2.1.3 OPERATION

There are four steps that nearly all CPUs use in their operation: fetch, decode, execute, and write back. The main step, fetch, includes retrieving an instruction from program memory. After an instruction is known, the PC is incremented by the length of the instruction word in terms of memory units. After the execution of the instruction and write back of the resulting data, the entire process repeats, with thenext instruction cycle normally fetching the next-in-sequence instruction because of the incremented value in the program counter. In more complex CPUs than the one described here, multiple instructions can be fetched, decoded, and executed simultaneously.

2.1.4 CLOCK RATE

The clock rate is the speed at which a microprocessor executes instructions. Every computer contains an internal clock that regulates the rate at which instructions are executed and synchronizes all the various computer components The late CPU design that uses clock gating is that of the IBM PowerPC-based Xbox 360. It utilizes extensive clock gating in order to reduce the power requirements of the aforementioned videogame console in which it is used.

2.1.5 PERFORMANCE

The performance or speed of a processor depends on the clock rate and the instructions per clock (IPC), which together are the factors, for the instructions per second (IPS) that the CPU can perform. Processing performance of computers is improved by using multi-core computers, which basically is plugging two or more individual processors into one integrated circuit. Preferably, a dual core processor would be closely twice as powerful as a single core processor. In practice, however, the performance addition is far less, only about 50%, due to imperfect software algorithms and implementation.

2.2 COMMUNICATION PEN

The whole set up of the device can connect to Bluetooth or the internet and the communication pen has the cellular network which has a huge number of portable transceivers. They are used in covering a large area at the same time and also decrease the interference of the other signals.

Fig.3Diagram of Communication Pen

ISSN (O) 2454-9665
ISSN (P) 2454-0663

2.2.1 BLUETOOTH

Bluetooth uses a radio technology called frequency-hopping spread spectrum, 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 range is in the globally unlicensed Industrial, Scientific and Medical (ISM) 2.4 GHz short range radio frequency band.

2.2.2 IEEE 802.11

IEEE 802.11 is a set of standards for implementing wireless local area network (WLAN) computer communication in the 2.4, 3.6 and 5 GHz frequency bands. They are produced and maintained by the IEEE LAN/MAN Standards Committee (IEEE 802). The base current version of the standard is IEEE 802.11-2007.

2.2.3 CELLULAR NETWORK

A cellular network is a radio network distributed over land areas called cells, each served by at least one fixed-location transceiver known as a cell site or base station. When linked together these cells afford radio coverage over a wide geographic area. This permits a large number of manageable transceivers to connect with each other and with fixed transceivers and telephones anywhere in the network, via base stations, even if some of the transceivers are moving through more than one cell during transmission.
Cellular networks suggestion a total of benefits over alternative solutions:

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

2.3 VIRTUAL KEYBOARD

The virtual laser keyboard which is abbreviated as VSK is the new and final device for the PC users. The VSK release the laser beam on the device where it looks like a keyboard with the arrangement of keys and it is a software part which permits the user to enter the characters. The virtual keyboards are of different types based on the following features:

- Physical keyboards with the clear keys
- Virtual keyboard with the areas of sensing
- Keyboards with optical projection
- Keyboards which optically detect the human hand and motion or movement of the fingers.

Fig.4Diagram of Virtual Keyboard

ISSN (O) 2454-9665
ISSN (P) 2454-0663

2.3.1 SECURITY CONSIDERATIONS

Virtual keyboards may be used in some cases to reduce the risk of keystroke logging. It is more problematic for malware to monitor the display and mouse to get the data entered via the virtual keyboard, than it is to monitor real keystrokes. However it is possible, for example by demo screenshots at regular pauses or upon each mouse click. The use of an on-screen keyboard on which the user "types" with mouse clicks can raise the risk of password exposé by accept surfing. Because, an observer can usually watch the screen more easily than the keyboard, and see which types the mouse moves to. Some executions of the on-screen keyboard may give graphical feedback of the "key" clicked, e.g. by varying its color briefly. This makes it much easier for an observer to read the data from the screen.

2.4 DIGITAL CAMERA

In this device, the digital camera is in the shape of a pen and used for recording video, video conferencing and much more. It is simply named as a web cam and is a 360^0virtual machine used for an exchange of information.

Fig.5Diagram of Digital Camera

A digital camera is a camera that takes video or still photographs, or both, digitally by recording images via an electronic image device. Most 21^{st} century cameras are digital. Digital cameras can do things film cameras cannot displaying images on a screen directly after they are recorded, keeping thousands of images on a single small memory device, and removing images to free storage space.

2.5 LED PROJECTOR

The role of monitor is taken by LED Projector which projects on the screen. Thus it is gives more clarity and good picture. This device plays the role of a monitor by availing the LED projector and projects the screen. It consists of a resolution capacity of a screen about 1024*768 and furnishes excellent clarity.

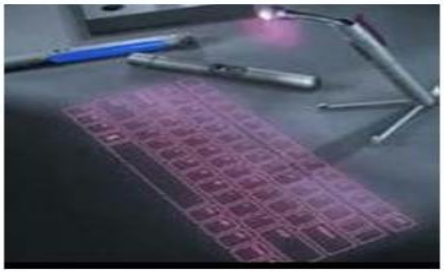

Fig.6Diagram of Led Projector

ISSN (O) 2454-9665
ISSN (P) 2454-0663

III MERITS AND DEMERITS OF 5 PEN PC TECHNOLOGY

3.1. Merits

The merits of this applied science are as follows:

- This device performs the computing in an omnipresent way or method.
- Portable
- Feasible
- Ubiquitous computing is done
- Wi-Fi technology
- Pens produces both the monitor as well as the keyboard on any flat surfaces from where you can carry out functions.

3.2. Demerits

The demerits of the 5 pen PC technology are as follows:

- It can be easily misplaced
- Cost
- Battery
- Keyboard concept is not new
- Positioning is main
- Currently un-clear.

IV APPLICATIONS

➢ Many examines has been made but there is no clear result so far.

➢ Only one human uses it is E-fingerprinting the gadget will be safer, which allows only holder to activate the Pc. So even if we lose it, no one else calentrances the gadget.

V CONCLUSION

The communication devices are becoming minor and compressed.5 Pen PC is only an example for the surprise of this new technology. We can think more such expansions in the future.

REFERENCES

[1] http://en.wikipidia.org/wiki/pen_computing

[2] http://www.softwaretoolbar.com/virtual_keboard.html

[3] http://www.compinfo_center.com/ledprojector.html

[4] http://rwservices.no._ip.info:81/pens/biblio70html#gray1888b

[5] www.scribed.com/doc/67990223/report_on_5_pen_pct_echnology

[6] http://www.rockinglearners.blogspot.in/p/virtual_keboard.html