5 Pen PC Technology

Miss. ApekshaPrabhuGaonker

Student, Department of Master of Computer Applications
KLS Gogte Institute of Technology, Udyambag, Belagavi, India
prabhugaonkerapeksha@gmail.com

Dr. Sunita S. Padmannavar

Asst. Prof, Department of Master of Computer Applications
KLS Gogte Institute of Technology, Udyambag, Belagavi, India
sspadmannavar@git.edu

*Abstract :*5 Pen PC Technology-P-ISM is the short name of five pen PC innovation; P-ISM is a tiny gadget resembles a typical-ISMs are connected to different gadgets which are close-by to them. The entire set is additionally associated with the Internet through the mobile phone work. It is another advancement of innovation for information and yield gadgets, made by people and this development will take the under creating 5 pen PC innovation to the development level.

IndexTerms - P-ISM, display, camera, CPU pen, Battery, Bluetooth, Wireless Connectivity, Virtual Keyboard etc.

I. INTRODUCTION

The present theme 5 pen PC innovation points five pens in making a PC. Pen-style Personal Networking Gadget was made in 2012 by a Japanese Company NEC. One pen is a focal handling unit, other is a camera, another is a virtual console, another assumes the part of a projector and the last one is a communicator or telephone. All these are set on a holder and this holds them as well as energizes their batteries. All these pens associate with each other by methods for a remote association like Bluetooth or web. This is extremely an interesting innovation done by Japanese organization in this new time it enables clients to send messages and messages or some other information straight forwardly to the individual by utilizing an exceptional PEN. This innovation has taken world to various level making the life of corporate world simpler. This makes it conceivable to change over composed data into its computerized variation and can be sent over to advanced gadgets through different correspondence medium.

Bluetooth is utilized wherever on the grounds that it makes simpler to share information or make associations without wires. 5 Pen PC Technology is extremely operational on the grounds that we can ready to associate at whatever point we require without having wires. The P-ISMS are associated with each other through remote innovation. The entire set is likewise associated with the web by means of cell systems.

This Pen PC delivers a virtual console and a screen gadget that is anticipated on a surface where the client writes in their data to be nourished into the framework.
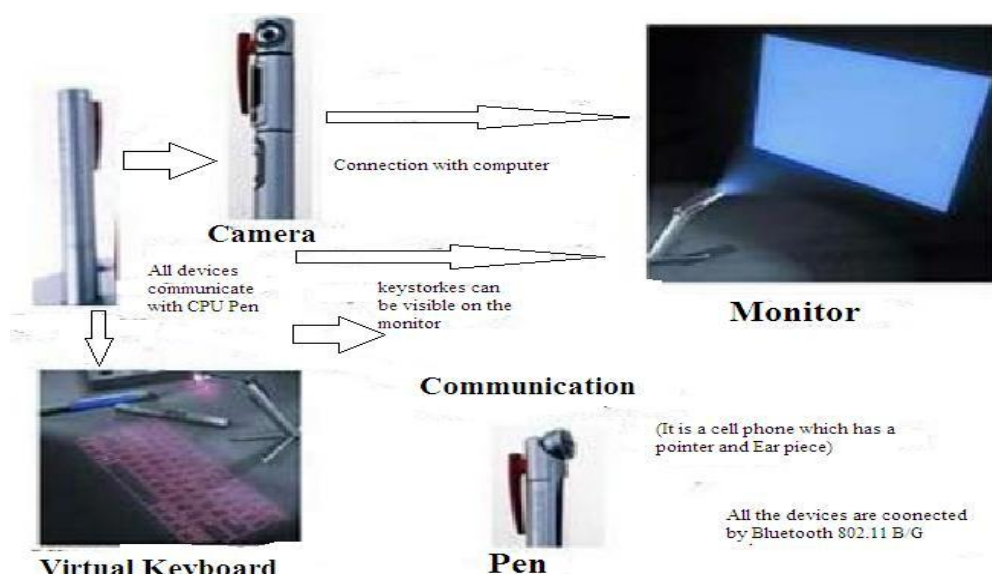

Fig 1: Block Diagram of 5PC Pen Technology

II. WORKING PRINCIPLE

A PC that works as an electronic pen is known as stylus as opposed to a console for input. Pen PCs for the most part require unique working framework that backings acknowledgment with the goal that clients can compose on the screen or on tablet as opposed to writing on a console. This 5 PEN PC are hand held devices and they are too tiny size keyboard.

For taking contribution from the client it will utilize the camera or a virtual console that is made on level surfaces and it makes utilization of Electronic discernment innovation (EPT).

An EPT is a minimal effort chip and it will make a laser or lighting that empowers electronic parts to frame a 3-D guide of their environment and see what their clients are doing.

III. COMPONENTS OF 5PC PEN TECHNOLOGY

Fig 2: Components of 5pen PC

A. *CPU Pen*

Among this 5pens one pen has functionality of CPU. It is also known as computing engine It is otherwise called figuring motor it works just for windows operating framework as it comprises of dual center processor inserted in it The central processing unit CPU is the piece of a PC framework that completes every instruction of a PC program and is the key component. Instruction of computer program are performed in sequential order, the different instructions that are being performed by CPU are arithmetical, logical, and input/output operations of the system. Tasks of the framework OS are inbuiltintroduced in this pen and it can't be changed

A central processing unit performs its operations in four steps and they are: The first step fetch involves the accessing of the commands from the computer program memory. After the instruction is accessed the PC is increased by the length of the instruction world in terms of memory units frequently the direction to be brought mustBe recovered from the moderate memory making the CPU be slowed down while restoring the esteem which is typically taken care of in cutting edge PCs utilizing stores and pipeline computing and in the next step it decodes the instructions which was fetched and executes it. In the last step, it simply displays the result on LED Projector.

1. *Control Unit*

The control unit of the CPU comprises that enables electrical sign to guide the whole Pc framework complete put away program, stored program. In CPU Instruction to execute a program are not given by control unit instead it instructs other parts of the computer system to perform them. Next direction cycle typically brings the following in grouping guideline as a result of the augmented an incentive in the program counterIn more complex CPU the one depicted here numerous guidelines that can be access decoded and executed all the while.

2. *Clock Rate*

The clock rate is the measure of speed at which a chip performs instructions. A computer comprises of internal clock that controls the speed at which instruction is being implemented and it synchronizes all the various computer parts.The CPU needs a stable amount of clock ticks to perform each instruction. Faster the speed of clock more the instruction would execute

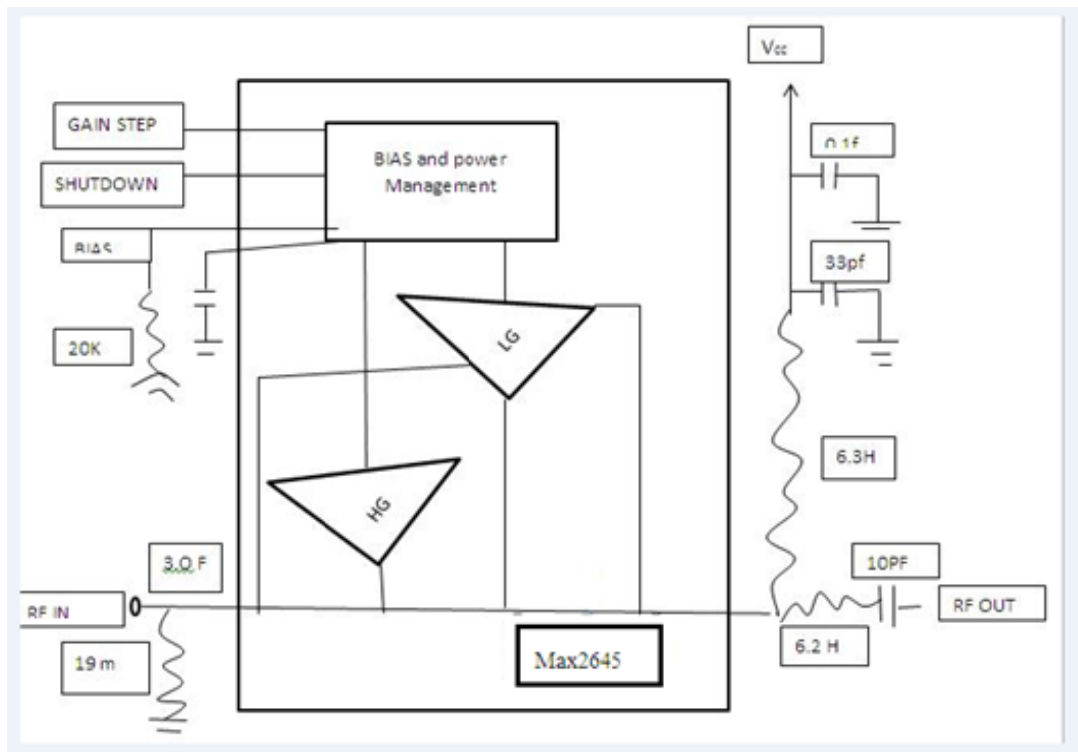The late CPU configuration uses broad check with a specific end goal to diminish the power necessities.

Fig 3: Diagram of Clock Rate

3. *Performances*

The clock rate characterizes the speed of the processor and the instruction every second (IPC) which define the instruction every second (IPS), With the use of Double core processor executes the PCs that are expanded which basically a plugging of at least two individual processors into coordinated circuit in a perfect world. Ideally, A multi-center processor would be about twice as intense as a single center processor.

B. *Communication Pen*

It is pointing devices that will provide a function same like mouse. This pen will help the user to interact with the information that is projected by the projector pen. We can connect to any device without the need of wired connection. It works on frequency band of 2.4 GHz ISM.The Data between two devices is exchanged by using Bluetooth technology for single state of information.

The problem of having huge component in a device id resolved using microchip from VLSI Vendors The most efficient and comprehensive solution for the most serious problems can be achieved by silicon vendors. The information can be exchanged by using defined protocols of Bluetooth technology.

1. *Bluetooth*

Radio technology used by Bluetooth is called as frequency-hopping spread spectrum, and information sent and transmitted is being chopped up to 79 bands.

2. *IEEE 802.11*

At the frequency bands of 2.4, 3.6 and 5 GHz, The IEEE 802.11 Comprises of certain convention for executing remote neighborhood (WLAN) these benchmarks are made and kept up by the IEEE LAN/MAN Standards Committee (IEEE 802).IEEE 802.11-2007 is the current base version of standard.

3*.Cellular Network*

A cellular network is a also network known as movable network which is circulated over land areas called cells. When these cells are connected to each other they produce radio coverage which is scattered over a geographic area.

Advantages of Cellular networks are

It makes use of large coverage area to reduce power and increased capacity.

- Reduces disturbance from different signals.

For example an old taxi driver's radio system is similar to non- telephone mobile system where the taxi company installs transmitters all over the city which allows the company to communicate directly through this system.

Cellular mobile-radio network contains following views
- The base subsystem forms the network of Radio base stations.
- The voice calls and text are handled by core circuit network.
- The mobile data handles a packed switched network.
- It makes use of public mobile network to communicate with subscriber's widespread telephony network.

C.*Digital Camera Pen*

Computerized camera pen gadget has the advanced camera in the state of a pen and utilized for recording video conferencing and considerably more. The digital camera is in the shape of pen .Is valuable in video recording, video conferencing basically it is called as web cam it is likewise associated with different gadgets through blue tooth. It is a 360 degrees visual communication device.

Images that are being captured through digital camera are not shown on a screen immediately and it also cannot store hundreds of images on a single small memory device, and delete them to free storage space.

Fig: 4: Diagram of Digital Camera Pen

D. *Virtual keyboard Pen*

Virtual keyboard pen the virtual laser keyboard is likewise called as VSK is the most recent and total gadget for the PC clients. The VSK discharge the laser bar on the gadget where it would seem that a keyboard with the plan of keys and it is a product part which allows the client to enter the characters.

The virtual keyboard is QWERTY type of Keyboard.

Fig 5: Diagram of Virtual keyboard Pen

Features of Virtual keyboards are:
- Physical keyboards with the clear keys
- Virtual keyboard with the regions of detecting
- Keyboards with visual display
- It is very easy to change the settings of virtual keyboard to any size.

- Client can tap on the projected key pictures which is then caught and perceived by an optical acknowledgment component while making genuine tapping sounds.VKB's captures the exact coordinates of the user finger tips to find out which key was pressed and send the command to the control unit for further processing.
- The virtual keyboard projection disappears when it is not being used and hence consumes less power during no usable time.
- The Virtual Keyboard allows to automatically repeating a key stroke based on prescribed inputs by sensing it through inbuilt sensors.
- Compatible: It does not require much knowledge to operate and is readily compatible.

The purpose of virtual keyboard can be seen when a disabled person who cannot use a physical keyboard wants to use one to give input into a system. Another case be where a multi-lingual user wants input data into the system with specific choice of language can use this virtual keyboard instead of switching between keyboard containing different character set this reduces waste of time and money to accumulate different character set keyboard. An example of this can be seen in a laptop which comes with predefined character set keyboard. The on screen keyboards give hotkeys for moving between formats from the physical keyboard normally with alt shift keys.

Virtual keyboards are used as on screen input process where we do not require an actual keyboard, where the user taps on virtual keyboard key built into the framework of the virtual keyboard pen. Virtual keyboard are also used for emulation software which physically do not have many keys.

E. *LED Projector Pen*

This device acts like a monitor by using the LED projector and displays the screen on a surface. It has a resolution of about 1024x768 and has excellent clarity. The monitor is just a led projector that projects the screen onto a surface. The project size is the same as an A4 paper. It gives a good picture display. A video projector receives signal in the form of video signal and projects the same onto a screen in video format by using a lens system. The projector uses a thick filament which is heated to high temperature to product a bright light.

Video projector makes use of bright light to display images on screen and the modern type of projector can remove the problem of dimness, curves and other inconsistencies through manual settings. Video projectors are widely used in Schools/colleges for training and the display is done on whiteboard to have clear projection, even it is used in business conference room presentations, home theatre etc.

Fig 6: Diagram of LED Projector Pen

A. *Projection technologies*

1. CRT projector stands for cathode ray tubes.CRT consist of blue, a green, and a red tube. Even though it is oldest system but still being used for projection but the cost is too much with smaller screen size.
2. LCD Projector makes use of LCD light gates. This system is very easy to use and it is reasonable for business use and home theaters. The main problem with this is, it has high range of pixilation effect which makes screen look pixelated but with the new innovation it got minimized up to certain level .The System with 3 DMDs never had a problem with the projection of images, as images were displayed as per the primary color. Recent projectors has high amount of speed (2x or 4x) which makes the display clear.

3. LCoS projector stands for Liquid crystal on silicon. Alternate of LCoS technology is SXRD Sony's proprietary Among all the above mentioned technologies LED projector makes use of each of them for creating an image. And they also use a group of Light Emitting Diodes for discrediting the requirement for substitution of light.

B. Types of display

Conventional and surface-mounted device panels are two types of LED panels. This are the mounted LED's having open outdoor screens and some indoor screens worked around discrete LED's with a specificend goal to shape full shading pixela group of red green and blue diodes is driven, these pixelAre tiny square in shape. These pixels separated by space and are measured from center to center for absolute. The Las Vegas is the place where there is largest LED display is made which is over 1,500ft long.

Indoor screens on the marketplace are built using surface-mounted device technology—a trend that is now spreading to the outdoor market. A SMD pixel comprises of red green and blue diodes every diode are littler than a pinhead and they are set up close by to each other and they are established closed to each other. A similar determination can be utilized to diminish greatest survey separate by 25% from the discrete diode screen.

Indoor screens depend on surface mounted gadget innovation which has a base shine of 600 candelas for each square meter cd/m². They are useful under high ambient-brightness which would be required for clear vision. Live Event, Fashion shows are examples of high-brightness stage lighting because they need higher LED brightness in order to make light visible long distance.

IV. MERITS OF 5PC PEN TECHNOLOGY

A. *Portable*

Portability is first and most main advantage of 5PC. Due to its tiny size they can be taken anyplace. Since their size is very small they can be carried in bags or even in our pockets a versatile PC is outlined such that it can be moved with one place then onto the next. They can likewise be known as a 'portable workstation' or 'portable PC' another real preferred standpoint is that it works on battery thus it can be utilized at whatever point we need.

B. *WIFI Technology*

Another main important advantage of PC is that it has a WIFI technology installed in it through which the client can connect easily to internet Wi-Fi, it is a tool that enables electronic devices to transfer data wireless over a computer network. A gadget empowered with WIFI, for example, a PC computer game mobiles tablet or computerized sound recorder and player can connect with a network resource, for example, theWeb through a remote system get to point an entrance point (or hotspot) has a scope of around 20 meters 65 feet inside and a more prominent range outside.

C. *Battery*

The advantage of portable type of computers, Tabs, any other devices is battery as they can be carried anywhere. Though batteries are in small size but they can be used for longer. The battery that is being used is made up of lithium ion and it can be used for 2weeks when doing normal work.

D. *Docking stand*

The 5pen PC can be easily placed on docking stand using which we can able to project LED and virtual keyboard on flat surface.

Fig 7: Diagram of PC Pen Docking stand

V.   DEMERITS OF 5PC PEN TECHNOLOGY

The P-ISM is made from 5 loose pens which can be carried anywhere and if any change in the movement of the surface area can have problem using Pen. For example we can't use 5pen PC in train or any other journey where there is lot of movement as it is going to shake the projection of the keyboard and the screen and they can't be as efficient as laptop.

This 5Pen PC is very small in size they can be easily damaged and stolen by anyone which could cost a lot. Each pen cost a lot and not affordable by everyone.

VI. APPLICATION

5Pen PC has e fingerprinting that makes gadget more secure which enables just proprietor to access the PC. So even if we lose it, no one else can access the gadget. Security is maintained by providing an ID proof of an owner and fingerprint scanner already installed in a pen.so just by pressing or touching the owner can perform the entire task

Fig 8: Diagram of E-finger printing

VII.   CONCLUSION

The communication gadgets are becoming tiny and minimal this is just a case for the beginning of this new innovation. We can expect all more such advancements later on it appears that information terminals are interminably getting smaller.

However, we will continue to manipulate them with our hands for now. We have envisioned the association between the most recent innovation and the human, in a form of a pen..P-ISM is an individual systems administration device including five capacities: virtual keyboard which is displayed on flat surfaces a LED projector, Digital camera and communication pen, to connect with various other gadgets using Bluetooth or internet.

The 5Pens are connected to the Internet through the cellular phone function. a virtual keyboard, another projects the visual output and thus the display and another communicator (a phone). All five pens can be kept in holding square and they can be charged using batteries. Each of these pens makes use of Bluetooth as communication medium.

ACKNOWLEDGMENT

REFERENCES

[1]   MrunalShidurkar, Mohammad Usman (2017), 5 Pen PC Technology, International Journal of Scientific &Engineering Research, Vol. 4 166-173
[2]   Pen Computing 2007 http://en. wikipedia.org/wiki/ Pen_computing
[3]   Rahul Sharad Kale, Dr.S.R.Gupta (2015), 5 Pen PC Technology, International Journal Of ComputerScience And Applications Vol. 6, No.2 275-278
[4]   Pen PC Technology 2012 http://seminarprojects.com/ Thread-5-pen-pc-technology--41404
[5]   Pen PC Technology http:// www. scribd.com/ doc/67990223/Report -on-5-Pen-Pc-Technology
[6]   http://en.wikipidia.org/wiki/pen_computing
[7]   http://www.softwaretoolbar.com/virtual_keboard.htm
[8]   http://www.compinfo_center.com/ledprojector.html

[9]   http://users.erols.com/rwseries/biblio.html
[10]   http://rwservices.no._ip.info:81/pens/biblio70html#gr ay1888b
[11]   What is Pen Computing? <http:// www.wisegeek.com/what-is-pen-computing.htm
[12]   http://www.rockinglearners.blogspot.in/p/virtual_keb oard.html
[13]   www.scribed.com/doc/67990223/report_on_5_pen_p ct_echnology
[14]   www.computinghistory.org.uk/history.html