



Advanced Computer Architecture Based P-ISM Technology Use to Implement Light Weight Pc Technology

Gajanan.P.Hingne^{1st}, Sumit .C.Lahe^{2nd}, Sandeep .S.Dabre^{3rd}

1 Computer Science and Engineering, Rajeshri Shahu College of Engineering, Buldhana,

2 Computer Science and Engineering, Pankaj laddhad Institutes of technology, Buldhana,

3 Computer Science and Engineering, Rajeshri Shahu College of Engineering, Buldhana, Maharashtra.

ABSTRACT

P-ISM (Pen-style Personal Networking device Package) is nothing however the new discovery, that is under developing, stage by NEC Corporation. P-ISM may be a device package as well as 5 operates: a pen-style cell phone with a handwriting knowledge input function, virtual keyboard, a really tiny projector, camera scanner, and private ID key with cashless pass operate. P-ISMs area unit connected with each other through short-range wireless technology. The complete set is additionally connected to the net through the cell phone operate. This personal device during a minimalist pen vogue permits the last word present computing.

Keyword— P-ISM, display, camera, CPU pen, Battery, Virtual Keyboard, Bluetooth, Wireless property, etc.

I. INTRODUCTION

Five pen computer shortly known as P-ISM (“Pen-style Personal Networking contraption Package”), is nothing however the new discovery, that is below developing stage by NEC Corporation. P-ISM could be a contraption package together with 5 operate: a CPU pen, communication pen with a cell phone perform, virtual keyboard, a small LCD projector, and a camera. P-ISM’s are connected with each other through short-range wireless technology Bluetooth and WF-FI. The full set is additionally connected to the web through the cell phone perform. This personal contraption during a minimalist pen vogue permits the last word present computing. [1]

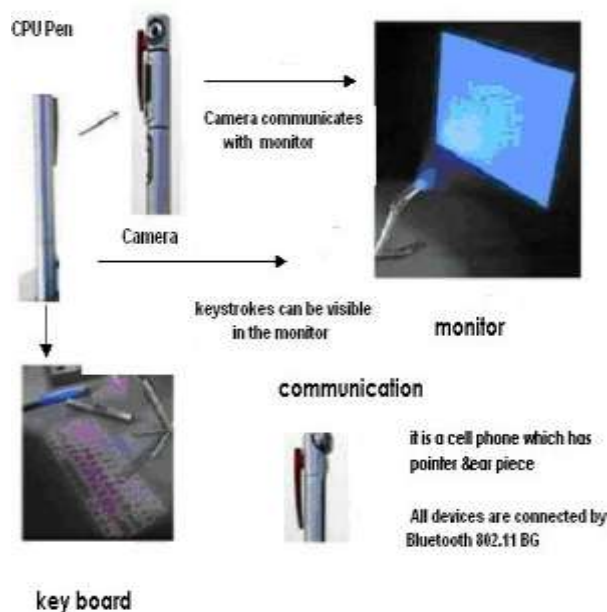


Fig. 1 Diagram of five Pen computer Technology



| 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 |

Fig 2: COMPONENTS NAME

II. HISTORY

The abstract image of the "pen" pc was in-built 2003. The image 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 telecommunication World control in Geneva, European country. The designer of the five Pen Technology, "Toru Ichihashi", aforesaid that "In developing this idea he asked himself – "What is that the way forward for IT once it's small?" The pen was a touch and feel. Further, the intent is to permit for associate workplace anyplace." However, though an abstract image of the "pen" pc was in- built 2003; such devices aren't however out there to shoppers. "The style thought uses 5 completely different pens to create a pc. One pen could be a hardware, another camera, one creates a virtual keyboard, another comes the visual output and so the show and another soul (a phone). All 5 pens will rest during a holding block that recharges the batteries and holds the mass storage. Every pen communicates wireless, probably Bluetooth."

III. CPU PEN

The practicality of the hardware is completed by one among the pen. It's conjointly called computing engine. It consists of twin core processor embedded in it and it works with WINDOWS operation system. The central process unit (CPU) is that the portion of a system that carries out the directions of a Trojan horse, and is that the primary part winding up the computer's functions. The central process unit carries out every instruction of the program in sequence, to perform the essential pure mathematics, logical, and input/output operations of the system.



Fig.3 Diagram of hardware

The management unit of the CPU contains electronic equipment that uses electrical signals to direct the whole automatic data processing system to hold out, keep program directions. The management unit doesn't execute program instructions; rather, it directs alternative components of the system to try and do therefore. The management unit should communicate with each the arithmetic/logic unit and memory.

3.1:- MICROCHIP (MICROPROCESSOR)

Previous generations of CPUs were enforced as separate elements and various little integrated circuits (ICs) on one or a lot of circuit boards. Microprocessors, on the opposite hand, are CPUs factory-made on a really little



range of ICs; sometimes only 1. the smaller central processing unit size as a results of being enforced on one die means that quicker switch time as a result of physical factors like attenuated gate parasitic capacitance. This has allowed synchronous microprocessors to possess clock rates starting from tens of MHz to many gigahertz's. In addition, because the ability to construct passing little transistors on Associate in Nursing IC has multiplied, the complexness and range of transistors in a very single central processing unit has multiplied dramatically. This wide discovered trend is represented by Moore's law, that has evidenced to be a reasonably correct predictor of the expansion of central processing unit (and different IC) complexness so far.

3.2:- OPERATION

There are four steps that almost all CPUs use in their operation: fetch, decode, execute, and write back. The first step, fetch, involves retrieving Associate in nursing instruction (which is drawn by variety or sequence of numbers) from program memory. When Associate in nursing instruction is fetched, the laptop is incremented by the length of the instruction word in terms of memory units. Often, the instruction to be fetched should be retrieved from comparatively slow memory, inflicting the central processing unit to stall whereas watching for the instruction to be came back. This issue is essentially self-addressed in trendy processors by caches and pipeline architectures (see below). The final step, write back, merely "writes back" the results of the execute step to some sort of memory. Fairly often the results are written to some internal central processing unit register for fast access by succeeding directions. After the execution of the instruction and write back of the ensuing knowledge, the complete method repeats, with subsequent instruction cycle ordinarily winning the next-in-sequence instruction as a result of the incremented worth within the program counter. In additional complicated CPUs than the one represented here, multiple directions will be fetched, decoded, and dead at the same time.

3.3:- CLOCK RATE

The clock rate is that the speed at that a microchip executes directions. Each pc contains an interior clock that regulates the speed at that directions are dead and synchronizes all the assorted pc elements. The central processing unit needs a hard and fast range of clock ticks (or clock cycles) to execute every instruction. The quicker the clock, the lot of directions the central processing unit will execute per second.

The late central processing unit style that uses clock gating is that of the IBM PowerPC-based Xbox 360. It utilizes intensive clock gating so as to cut back the facility needs of the same videogame console during which it's used.

3.4:-PERFORMANCE

The performance or speed of a processor depends on the clock rate and also the directions per clock (IPC), that along are the factors, for the directions per second (IPS) that the central processing unit will perform. Process performance of computers is multiplied by exploitation multi-core processors, which primarily is plugging 2 or a lot of individual processors (called cores during this sense) into one computer circuit. Ideally, a twin core processor would be nearly double as powerful as one core processor. In follow, however, the performance gain is much less, solely concerning half, attributable to imperfect code algorithms and implementation.

4:- COMMUNCIATION PEN:-

P-ISMs square measure connected with each other through short-range wireless technology. The entire set is additionally connected to the Internet through the mobile phone perform. They're connected through Tri-wireless modes (Blue tooth, 802.11B/G, and Cellular) which square measure created little and unbroken during a little pen like device.



Figure 4: Communication Pen

In fact, no-one expects a lot of activity on 802.11n installations until the center of 2008. "Rolling out 802.11n would mean a giant upgrade for purchasers UN agency have already got full Wi-Fi coverage, and would be a fancy ads networks, for those that haven't. Bluetooth is wide used as a result of able to able to transfer



knowledge or make connections while not wires. This is often terribly effective as a result of we can ready to connect whenever we'd like while not having wires. They are used at the waveband of

2.4 Gigacycle philosophy (although they use completely different access mechanisms). Blue tooth mechanism is employed for exchanging signal standing information between 2 devices. This techniques are developed that don't need communication between the 2 devices (such as Blue tooth's reconciling Frequency Hopping), the most efficient and comprehensive answer for the foremost serious problems is accomplished by semiconducting material vendors. They can implement data exchange capabilities among the styles of the Blue tooth. It's nothing however conjointly kind of Blue tooth. Victimization this property we are able to conjointly connect it with the web and may access it anyplace within the world.

4.1 :- BLUETOOTH

Bluetooth uses a radio technology known as frequency- hopping unfold spectrum, that chops up the information being sent and transmits chunks of it on up to 79 bands (1 MHz each; focused from a pair of 402 to 2480 MHz) within the vary 2,400-2,483.5 MHz (allowing for guard bands). This vary is within the globally unauthorized Industrial, Scientific and Medical (ISM) a pair of .4 giga cycle per second short vary frequency band.

4.2:- IEEE 802.11

IEEE 802.11 may be a set of standards for implementing wireless native space network (WLAN) laptop communication within the pair of .4, 3.6 and 5 Giga cycle per second frequency bands. They're created and maintained by the IEEE LAN/MAN Standards Committee (IEEE 802). The bottom current version of the quality is IEEE 802.11-2007.

4.3:- CELLULAR NETWORK

A cellular network may be a radio network distributed over land areas known as cells, every served by a minimum of one fixed-location transceiver called a cell website or base station. Once joined along these cells offer radio coverage over a good geographical region. This permits an outsized variety of transportable transceivers (e.g., mobile phones, pagers, etc.) to speak with one another and with mounted transceivers and telephones anyplace within the network, via base stations, although a number of the transceivers square measure moving through over one cell throughout transmission.

Cellular networks provide variety of benefits over different solutions:

- raised capability reduced power use larger coverage space.
- Reduced interference from different signals.

5. LCD/DIODE PROJECTOR:

The role of monitor is taken by LCD Projector that comes on the screen. The dimensions of the projector is of A4 size. It has the approximate resolution capability of 1024 X 768. So it's provides more clarity and sensible image.



Figure 5: diode Projector

5.1 PROJECTION TECHNOLOGIES

CRT projector stands for Cathode ray tubes. This usually involves a blue, a green, and a red tube. This can be the oldest system still in regular use, however rupture of favor mostly due to the large cupboard. However, it will give the biggest screen size for a given price. This conjointly covers 3 tube home models, which, whereas large, is touched (but then typically need complicated image changes to induce the 3 pictures to line up correctly). LCD projector victimization liquid crystal display light- weight gates. This can be the only system, creating it one among the foremost common and reasonable for home theaters and business use. Its common drawback could be a visible "screen door" or pixilation result, though recent advances have reduced this.

The most common drawback with the single- or two-DMD varieties could be a visible "rainbow" that some



individuals understand once moving their eyes. Newer projectors with higher speed (2x or 4x) and otherwise optimized color wheels have lessened this whole thing. Systems with three DMDs ne'er have this drawback, as they show every primary color at the same time. LCoS projector victimization liquid on semiconducting material.

- D-ILA JVC's Direct-drive Image light-weight electronic equipment supported LCoS technology.
- SXRD Sony's proprietary variant of LCoS technology. The biggest junction rectifier show within the world is over one, 500 foot (457.2 m) long and is found in city, Sagebrush

State covering the Fremont Street expertise. The biggest junction rectifier TV within the world is that the Center decorated monitor at Cowboys area that is one hundred sixty \times seventy two foot ($49 \times$ twenty two m), 11,520 sq. feet (1,070 m²). Most indoor screens on the market are designed victimization SMD technology—a trend that's currently extending to the out of doors market. An SMD component consists of red, green, and blue diodes mounted during a single package that is then mounted on the driving force board. The individual diodes are smaller than a pinhead and are set terribly close. The distinction is that the almost viewing distance is reduced by twenty fifth from the distinct diode screen with identical resolution. Indoor use usually needs a screen that's supported SMD technology and includes a minimum brightness of 600 candelas per square meter (cd/m²), generally informally known as nits). This can typically be quite example for company and retail applications, however under high ambient-brightness conditions, higher brightness is also needed for visibility. Fashion and motor vehicle shows are 2 samples of high-brightness stage lighting that will need higher junction rectifier brightness. Conversely, once a screen could seem during a shot on a TV studio set, the necessity can typically be for lower brightness levels with lower color temperatures; common displays have a white purpose of 6500–9000 K, that is far bluer than the common lighting on a TV production set.

6. VIRTUAL KEYBOARD:

The Virtual optical maser Keyboard (VKB) is that the final new gadget for laptop users. The VKB emits optical maser on to the table wherever it looks like the keyboard having QWERTY arrangement of keys i.e., it uses a beam to get a life-size utterly in operation laser keyboard that swimmingly connects to of laptop and Most of the handheld devices (PDA's, pill PC's).The I-Tech optical maser keyboard acts specifically like several alternative "ordinary" keyboard [2.4]

Features of virtual keyboards are:

- VKB settings is modified by Sound:
- Manageable Virtual Keyboard sound effects
- Affiliation: Connection to the acceptable Laptop/PC port
- Intensity: Intensity of the projected Virtual Keyboard
- Timeouts: coordinated timeouts to conserve the Virtual Keyboard's battery life
- Sensitivity: adjustable sensitivity of the Virtual Keyboard
- Auto-repeat: permits the VKB to mechanically repeat a key based on prescribed parameters.



Figure 6: Virtual Keyboard

7. DIGITAL CAMERA:

We had camera within the form of pen .It is helpful in video recording, video conferencing, merely it's known as internet (web) cam. It is also connected with alternative devices through Bluetooth and Wi-Fi. The major advantage it's little that is well transportable. It's a 360-Degree Visual Communication Device. We've seen video phones hundreds of times in movies. However, why cannot we tend to act naturally in front of videophone cameras? Typical visual communications at a distance are restricted attributable to the show devices and terminals. This terminal permits showing of the surrounding atmosphere and (peer to peer) group-to-group communication with a spherical show and a central super-wide-angle camera



Figure 7: Digital camera

8. BATTERY:

The most necessary half within the transportable sort of pc is its battery. Typically batteries should be little in size and work for longer time. It comes with battery lifetime of 6+. For traditional use it can be used for two weeks. This 'pen style of instrument' produces both the monitor furthermore because the keyboard on any flat surfaces from where you'll do functions you'd commonly do on your desktop pc.

9. CONCLUSINON

The communication devices have become smaller and compact. This is solely associate degree example for the beginning of this new technology. We can expect a lot of such developments within the future.

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