

Theoretical assessment of E-Ball: A diminutive PC obscuring the traditional PC

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Abstract—This yet embryonic technology sobriquet as E-ball technology is the most prodigious research artifact imminent in the arena of personal computers (PC). The E-Ball concept PC, a sphere-shaped computer avowed to deliver the smallest physical design among all the hitherto extant laptops and desktops. This work of genius consists all the features pertaining to conventional computer elements like keyboard, mouse, DVD, large screen display but the line of attack incorporated by E-ball technology PC for integrating these elements is impeccable which outweighs the services offered by traditional systems. E-Ball PC magnanimously boasts a petite 6 inch diameter sphere and a seamless 120×120mm motherboard. E-Ball is premeditated to be positioned on two stands, which open simultaneously using buttons located on each side. After opening the stand and switching on the PC, a detachable optical mouse and laser keyboard can be activated and put into use to experience this flummoxing technical revolution which has revolutionized the landscape of Personal Computers.

Key Words: E-ball technology, holographic display, laser keyboard, LCD projector.

I. INTRODUCTION

E-Ball is one of the ingenious emerging technologies designed by Apostol Tnokovski, a 31 year old Macedonian product designer. This sphere shaped PC is predominantly grounded on the laser rays technique and dwells all the necessary and vital features which a normal computer possesses. In other words, a complete computer is veiled inside it. Principally designed for Microsoft Windows Operating System, this sophisticated technology does not comprise of any external display unit. A button is provided for the purpose of projection through LCD projector. On pressing this button, the projector will pop up which will focus the computer screen on the wall. Navigation keys are provided for adjustment operations. [1].

This technology is astounding and exclusive in a way that it consists of a paper sheet holder which divides into three pieces like an umbrella just after popping up, and it will show desktop on the paper sheet in the absence of any wall. This paper holder can also act like a screen for making exquisite presentations or watching movies. This technology is the eighth wonder which can revolutionize the world sooner prove to be efficacious in years to come.

This research paper aims to remit an exhaustive theoretical review of the E-ball technology. The section I of this paper familiarizes the given topic in concoction with illuminating the background information. The rest of the paper is structured as superseded; section II concisely explicates the salient features of E-ball, section III and IV deal with description of elements and their operating principles. The advantages and limitations of the technology

are elucidated in section V and VI respectively, followed by the conclusion in the terminating section.

II. FEATURES OF E-BALL

E-ball technology includes the following features: [7]

A. A holographic display:

Holographic display is an authentic three-dimensional (3D) display technology that expounds all depth cues devoid of any special glasses. It offers an innate 3D experience for multifarious spectators.

B. Optical Mouse:

Adopting the concept of light-emitting diode (LED) and an optical sensor instead of the outmoded mouse ball, optical mouse is a precocious computer pointing device whose movement detection is attainable by apperceiving the modifications in the reflected light, rather than by deciphering the motion of a rolling sphere. [6]

C. 350-600 Gigabytes of Hard Disk Drive:

It is a data storage device comprehending the capacity in the range of 300-650 GB used for retrieving digital information utilizing expeditiously rotating disks smeared with magnetic material.

D. 5 Gigabytes of RAM:

This petite PC consists of 5 Gigabytes of RAM which is an abbreviation for random access memory. It is the dominant and most congruous type of memory endowed in computers which can be accessed randomly without touching any of the preceding bytes.

E. 50 Watt speakers:

Prominently known as multimedia speakers, these speakers are external to a computer that sabotages the lower fidelity built-in speaker which often has a low-power internal amplifier.

F. LAN and WLAN card and a Web cam:

LAN and WAN cards are hardware devices which can be consolidated into the main hardware of the computer and acquire connection with computer network.

A video camera that bolsters its image in real time to a computer network is a webcam. A webcam is extensively connected by a USB cable or FireWire cable unlike an IP camera where a direct connection using Wi-Fi or Ethernet is obligatory.

G. LCD projector:

A device that avails a liquid crystal display technology for projecting videos, whist and static images along with auxiliary data onto a screen is known as an LCD projector.

Metal halide lamp or similar to it is used to spawn light, which outstrips polarized light through three LCD panels. These panels judiciously allow pixels of blue, red and green light to pass through another prism that amalgamates the colors and projects them onto a remote surface. [8]

H. HD DVD Recorder:

High Definition DVD recorder exemplarily refers to an independent unit that resembles and functions like a VCR. Rather than a video tape, it records onto a DVD disc. Any analog video source can be used by DVD recorders for the utility of recording.

I. Integrated graphic card and sound card:

A sound card is an integrated circuit, also called an expansion card, which dispenses a computer with the competence to beget sounds that can be heard by the user either over speakers or headphones. A graphic card is a dole of hardware installed in a computer that is culpable for rendering the image on the display screen. [10]

J. Power port:

Electronic devices such as portable DVD players can be plugged in using power ports.

K. Paper sheet holder:

The paper holder acts like a screen for forging splendid presentations or watching movies. In this petite PC, a paper sheet holder is incorporated which gets segregated into three pieces like an umbrella just after it pops up, and displays the desktop on the paper sheet in the absence of any wall.[4]

L. Modem port:

Using standard telephone service, modem port is used for connecting PC to the Internet. The computer can call an Internet service provider (ISP) to deliver the desired information over voice lines with the help of it.

M. S-video port:

Popularly known as S-Video and super video, separate video is an analog video transmission that hauls standard definition video customarily at 480i or 576i resolution. [11]

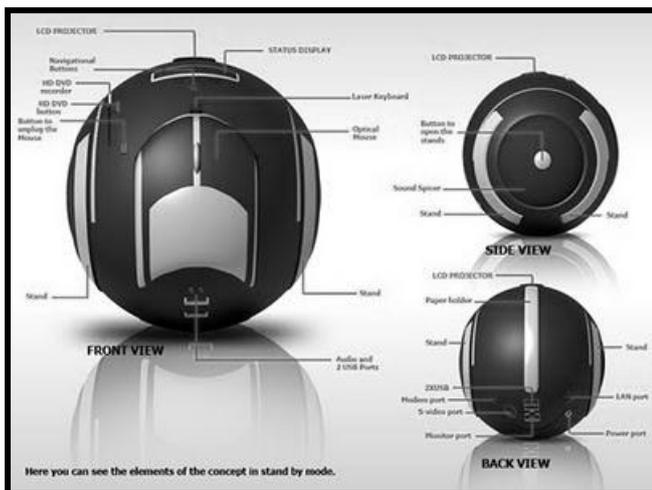


Fig. 1: Rear, front and side view of E-Ball PC

N. Dual core processor:

A dual core processor is a central processing unit consisting of two disassociated cores on the same die, possessing its

own cache. There are two imperforate execution cores instead of one, each with an autarchic interface to the front side bus which makes it pertinent for multitasking environments.

O. Laser keyboard:

It is utterly a concept keyboard that is discernible when the pc is working. The keyboard is not physical, it is interpreted by lasers. It recognizes your fingers with an aid of an IR sensor when you are typing at an appropriate place, while the mouse is a pop out wonder fabricating this as an existing morsel of technology.

III. WORKING OF E-BALL

To reinstate grotesque and walloping PC's, Apostol decided to contrive the smallest pc ever. E Ball concept pc is sphere shaped as in Apostol's conviction; spherical shape entices everyone's attention. It doesn't require a physical keyboard or mouse. Working of an e-ball is as follows:

A. Display unit:

Devoid of any external display unit, it has a button which on pressing pops up a projector that focuses the computer screen on the wall. For adjustment operations, navigation keys are also bestowed.

B. Paper sheet holder:

It is at the back of PC and is pragmatic in the absence of a wall for projection. The lower part needs to be pressed for opening the holder. By pressing and holding the on/off button for five seconds the Pico projector will recur. It divides into three pieces like an umbrella just after barging in, and it exhibit desktop on the paper sheet. It can act as a source for portraying presentations or watching shows and movies or chatting on the net. [4].

C. Laser keyboard:

This keyboard is based on laser rays technique. It discerns your fingers with an aid of an IR sensor when you are typing at a specific place. It almost certainly is a clumsy input device.

D. Optical Mouse:

It is a detachable optical mouse which relies on the laser ray technique that utilizes light-emitting diodes (LED) or laser as a method of tracking movement. As an optical mouse does not contain mobile parts, it does not require cleaning which annihilate mechanical failure.

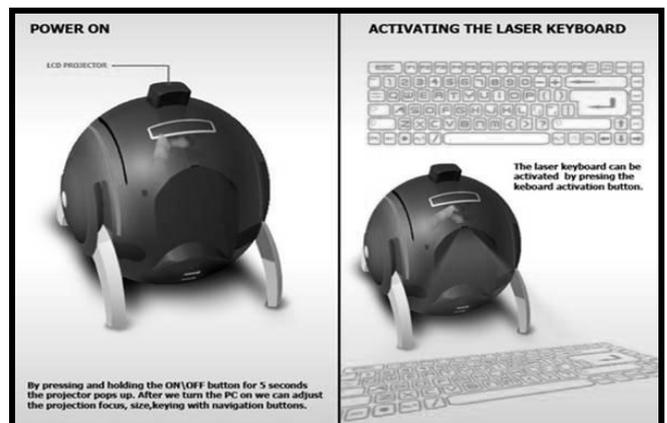


Fig. 2. the activation of E-ball PC

IV. ADVANTAGES OF E-BALL

- 1) *E-ball is advantageous in terms of portability:* It is designed to be easily transported and relocated in comparison with conventional computers. It can be easily hauled from one place to another.
- 2) *E-Ball has large memory:* It has colossal dominant memory i.e. RAM (5 Gigabytes) which acts as an interim storage area for holding the data and instructions that is required by the Central Processing Unit
- 3) *Easy to use for making magnificent presentations:* Using the holographic display or paper sheet in absence of wall, hellacious presentations can be created which can be displayed by the aid of LCD projector.
- 4) *This technology is quite handy:* It is very convenient to carry as it can be packed into a ball and convoyed anywhere.
- 5) *Works hastily as it possesses high speed:* It acquires high speed of execution for performing disparate operations.
- 6) *User-defined keyboard layouts are supported:* Functional arrangement or visual arrangements of the keys or key-meaning associations are well supported by this technology.

V. DISADVANTAGES OF E-BALL

- 1) *One of the major deprivations of this technology is that it can't be used with normal operating systems:* It is compatible only with Microsoft Windows operating systems and can't be adopted with normal operating systems.
- 2) *High cost is another disadvantage as common horde cannot afford it:* Being an exorbitant and extravagant technology, it is out of reach of prevalent people.
- 3) *Difficulty in understanding and detection of any problem in hardware components, if it has occurred:* Unlike normal PC's, it is arduous and strenuous to track problems and faults that can occur in hardware components.

VI. CONCLUSION

As the years are passing, the computer size is dwindling. The software interface of E-Ball concept PC is highly formalized with icons that can be commemorated easily which support the windows operating system. E-Ball concept is considered to be the 8th wonder which has the potential to reform the world with its unblemished and stupendous features. Its spherical shape is envisioned to captivate everyone's attention. Its candor and ingenuousness makes it simple while creating video presentations, listening to music, watching large screen movies or chatting on the net. It's unbelievable and astounding that technology can be prospected up to this extent. Contemporary concoctions and innovations are emerging on the daily basis. The uniqueness of this superlative technology is that it ensconces full fleshed features of a normal PC. This diminutive ball computer is anticipated to take the world to the new horizons.

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