A Review on E-Ball Technology

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Abstract: We all are familiar with the word computer, and we all know that earlier computer was huge in size. Day by day the size of computer reduces and   now a new concept of PC is introduced that is E-Ball Concept pc. The E-Ball concept PC is the smallest design among all the laptops and desktops. *E-ball* is design by "Apostol Tnokovski", a 31 year old Macedonian product designer. He has replaced the old PC from the squares and rectangular shape with his newly designed wonder in a spherical shape. According to Apostol it is the best shape in nature and it draws everybody's attention. It is the smallest PC ever made. The size of E-ball is just like a ball, we can keep in our pocket and move from one place to another. This PC contain everything in-built like keyboard, mouse etc. This PC concept features all the traditional elements like mouse, keyboard, large screen display, DVD recorder; speaker etc. It is yet to be launched in market. The research in this field is still going on.

Keywords: E-Ball, Virtual keyboard, Paper Sheet holder, LCD Projector, DLP Projector.

Introduction: The E-Ball concept PC is a sphere shaped computer which is the smallest design among all the laptops and desktops. It has all the features of traditional computer like keyboard, mouse, DVD etc. The body of E-BALL is made up of aluminum and plastic parts.

E-BALL is the smallest among all the PCs developed so far as it has 120 x 120mm motherboard and is 6 inch in diameter. E Ball is designed that pc is be placed on two stands, opens by pressing and holding the two buttons located on each side of the E-Ball pc which is seen in figure 1. The unique feature of E-Ball computer is that when we close it no one can guess that whole computer is hidden in this ball. This e ball is highly stylized and is user friendly too and easy to use.

Figure 1.

Starting the E-Ball:

 The first thing before starting the E-ball is to put it into standing position. For this we have to press the two buttons on the sides of E-ball for 5 seconds and the stands are automatically opened and adjusted so as to hold the E-ball Pc in position.

   After this the on/off button shown in figure 2 on the top of the E-ball must be pressed to turn on the PC and then the Projector pops up. After this the focus, direction etc can be adjusted using the navigation buttons.

Figure 2.
Elements of E-BALL:

- It has around 350-600 GB of Hard Disk Drive.
- It contains wireless optical mouse and keyboard, and LCD projector.
- It contains 5GB RAM.
- It has two 50W speakers.
- It has LAN and WLAN card and a Web cam.
- It has Virtual keyboard.
- Dual core processor.
- Integrated graphics and sound card.
- LCD projector Paper holder

Figure 3. FRONT VIEW OF E-BALL

Figure 4. SIDE VIEW OF E-BALL

Figure 5.

Working of E-ball : A working of E-ball is very simple. It has a button at the top when we press this button a projector will pop and focus the computer screen on the wall which can be adjusted with the help of navigation key.
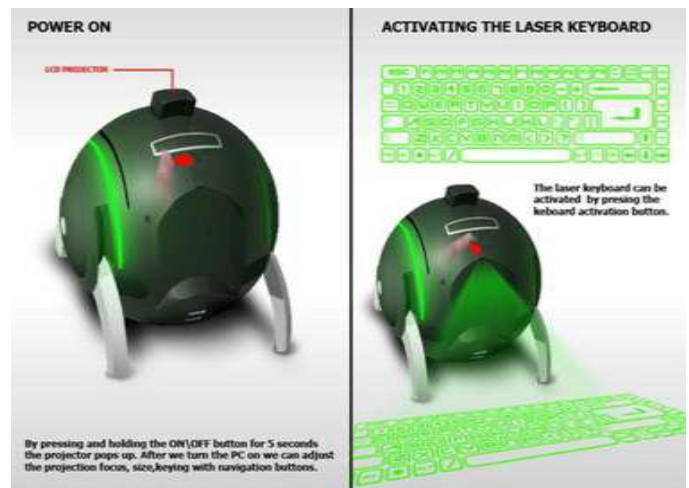

Figure 6.

But if there is no wall then also we can use E-ball. This is the special features of E-ball, it has a paper sheet holder .When we are working in an open place we can make use of a paper sheet as a screen. Paper sheet holder is placed at the back panel of this computer. The holder can be opened by pressing it in the lower part which is clearly seen in the below diagram. In this paper sheet holder we place a plan paper which act as a screen. It is clearly shown in the figure 7.
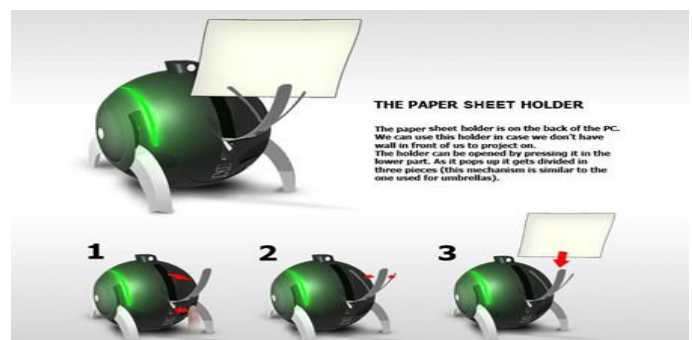
Figure 7.

This concept PC will measure 160mm in diameter and it was designed for Microsoft Windows OS. E-Ball concept pc has a laser keyboard that is fully a concept keyboard that is visible when the pc is in working. The keyboard is not physical - it is interpreted by lasers that appear after we press the respective button. It recognizes your fingers with the help of an IR sensor when we are typing at a particular place, while the mouse is a pop out this wonder make this an existing piece of technology. E-Ball concept pc work very easy while we are making video presentations, listening music watching large screen movies, and chatting on the net.

Essential Parts of E-Ball:-

1. **Virtual keyboard**:-A virtual keyboard is a software component that allows a user to enter characters. A virtual keyboard is a projection keyboard that is projected and touched on any flat surface. These Virtual laser keyboard works by using sensor technology and artificial intelligence to let user work on any flat surface. The device detects the movement of fingers when they are pressed down. The movement of fingers is measured and the device accurately determines the pressed keystrokes and at the same time it translates them into text.

Reasons to use the Virtual Keyboard.

• When connected to your handheld computer it is more convenient to carry around than your laptop.
• It takes up less desk space than a conventional keyboard.
• You could use it with your desktop, laptop or handheld computer.
Virtual keyboard basically consists of three components:-
a. The Sensor Module:-

The sensor module serves as the eyes of the Keyboard Perception technology. The Sensor Module operates by locating the user's fingers in3-D space and tracking the intended keystroke

Figure 8.

b. IR(Infrared light)Light Source:- Infrared (IR) light is the part of the EMI spectrum that people encounter most in everyday life, although much of it goes unnoticed. It is invisible to human eyes, but people can feel it as heat. The light which is generated from IR-Light source is not visible to the user. The IR-Light source emits a ray of infrared light.

c. The Pattern Projector: - The pattern projector basically presents the image of the keyboard. This image can be projected on any flat surface. The projected image is that of a standard keyboard with all the keys and control functions.

2) Projector: - E-ball Technology basically use a LCD projector to Project an image on screen or flat surface. In LCD projector video signal are comprised of three colors: red, green, blue.

Generally there are two types of projector used:-

1)LCD Projector:-LCD projector is a type of projector based on liquid crystal displays which can display images, data or video on screen or flat screen. An LCD projector works on transmissive technology. LCD projectors are more popular than many alternatives because it is cheaper to produce and have excellent color reproduction. They are commonly used in business meetings, presentations and seminars.

An LCD projector allows the source light to pass through the three colored liquid crystal display light panels. The panels in turn allow some colors to pass through and block some colors to form the images on the screen.

Figure 9.

Benefit of LCD Projector:-
1) It has low-priced.
2) It can also provide greater brightness with lower energy consumption.
3) This projectors do not suffer from rainbow effects and dithering.
4) It provides greater zoom magnification.

Drawback of LCD Projector:-

1) If an LCD projector is used frequently over a long period of time, image degradation is possible, and they also heat up more quickly than DLP projectors.
2) The life time of LCD panel is limited.
3) They do not have high contrast.
2. **DLP Projector :-** DLP (Digital Light Processing) technology uses micro-mirrors to project images from a monitor onto a large screen. DLP is seen in standalone projection units, in rear projection TVs, and in a majority of digital cinema projection.

Benefit of DLP Projector:-

1) DLP projectors require less maintenance than LCD projectors because they have a filter-free and sealed chip design, which means dust cannot settle on the chip and cause an image spot.
2) They are not subject to the misalignments that can occur in LCD projectors.

Drawback of DLP Projector:-

1) It provide less zoom magnification so, it is best suited for small environment.
2) Its Price is high as compared to LCD Projector.

Pros of E-Ball:

• The E-ball PC is smaller in size and spherical in shape so, it is portable and each to carry from one place to another.
• E-Ball has large memory so we can store large amount of data in it.
• Useful for making video presentations.
• The speed of E-ball is high.
• It Supports user-defined keyboard layouts
• It is efficient.
• It is more secure than other computer.
   • We can use E-ball where there is no wall also.

Cons of E-Ball:

• Normal OS can't work in these computers.
• Cost of E-Ball is very high.
• It is difficult to understand if any problems occur in hardware components and to recover it.

Conclusion:

Today the technology is beyond our imagination and it is at peak point. As the year passes the size of computer is becoming smaller and smaller and now the time came that we can keep the computer in our pocket and move from one place to another. E-ball is just like a ball and does all the function of traditional computer. It is spherical in shape. At last this E-ball technology has taken the computer technology to new horizons. This paper provides a descriptive review on the incoming technology. Hope, this will satisfy the human needs and expectations in future.

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