# Special Issue Published in International Journal of Trend in Research and Development (IJTRD),

ISSN: 2394-9333, www.ijtrd.com

# E-Ball Technology

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*Abstract* - The word computer comes from the "compute" that means to calculate or manipulate, so that generally people consider that the computer is a device which is used to calculate or manipulate any operation within a less amount of time. The computer was invented in 19<sup>th</sup> century. A new concept of pc is coming now that is E-ball concept pc it was invented by APOSTOL TNOKOVSKI. The E-ball is a new concept of pc which is having all the features like a traditional chip has some components such as laser, keyboard, and mouse. E-ball pc is nothing but whole computer within the ball shape. E-ball is very attractive and unique. E-ball is possible to change the life of people completely in upcoming days. E-ball is innovative hand-hold computer with the properties of existing with the improvised design.

#### Keywords - Optical mouse, Laser keyboard, projectors

#### I. INTRODUCTION

The concept of E-ball is introduced by the **APOSOTOL TNOKOVSKI**.he designes theE-ball in spherical sphere shape because his opinion is that the shape attracts everybody to bring attention towards the technology.E-ball is smallest computer among all the laptops &desktops[1]. E-ball having only 6-inch diameter sphere. It is having 120x120mm motherboard and 160mm round sphere. E-ball was designed for Ms-windows,OS.

E-ball has feature like dual core processor 250-500GB hard disk drive,5GB of RAM, integrated graphic & sound card, 2x50W spaekers, DVD recorder, mouse, laser keyboard, LAN & WLAN card, webcam and integrated LCD projector. E-ball is easy to handle and portable it can carry anywhere easily[2].



Figure:1The E-ball image

# II. COMPONENTS OF E-BALL

A) Size Of E-Ball

E-ball is a spherical sphere shape ball of 6-inch in diameter and contains a motherboard of size of 120x120mm.E-ball is made up of aluminium and plastic body.

#### B) RAM

Random Access Memory(RAM). RAM is a volatile memory.it is a storage device but the data is not store permanently.[1]E-ball pc is basically uses the 5GB of RAM. RAM is measure by bits.8bits equal to 1 byte. It has two types of RAM. SRAM &DRAM.

#### C) Processor

Intel core is a brand name used for various mid-range to high end consumer on business micro processor made by intel.the current lineup of core processors include the latest processor: intel core i7, intel core i3, intel core2 solo, intel core i5, intel core2 duo, intel core2 quad. The E-ball basically uses Intel core2 duo processor[2].

#### D) Speakers

The E-ball has two inbuilt 50W speaker. The E-ball pc speakers work in very high speed.

#### E) Holographic Display

Holographic is the best way of displaying the true 3Dimension displays.[4] It is a type of diffraction based display technology which reconstructs the light field of 3D in space with the light.

#### F) Hard Disk Drive

In every pc the hard disk drive is the major part it is a secondary storage device. It is a volatile in nature. It consists of oxide coated metal platter that can be magnetized to represent data, The E-ball pc has a 350-500GB hard disk dirve.

#### G) HD-DVD Recorder

HD is the expansion of high definition.HD-DVD recorder is an independent unit which dwells the functions of video cassette recorder. It records into a DVD disc or in the internal disc.

#### H) Webcam

Webcam is extensively used by all the computers. It can be connected to E-ball through USB cable or fire wire cable.

#### I) LAN&WAN Card

LAN is used to connect the user to LAN through wireless connection.WAN is used to connects the user to a WAN. WAN is a network interface card. The Figure 2

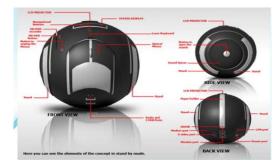


Figure:2 Elements of E-ball

#### III. WORKING OF E-BALL

E-ball concept pc don't have any external display unit, it has a buttonON/OFF. When you press the ON/OFF button on the top of E-ball to turn on the pc and the projector pops up the first thing before standing the E-ball pc is to put it standing poisition. 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 theE-ball pc in position.[1]E-ball is a modern system which doesn't require any conventional keyboad and mouse. The working of E-ball parts are:

National Conference on Prominent Challenges in Information Technology (NCPCIT-18) organized by Department of Computer Science, St. Joseph's college of Arts and Science for Women on 18<sup>th</sup> Sept 2018 24 | P a g e

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- Projector,
- Optical mouse,
- Virtual keyboard,
- Paper sheet holder,
- Power port,
- Modem port.

#### A) Projector

Projector focuses on the computer screen on a wall, on pressing and holding the button a projector will display from the upper surface on the E-ball. There are types of projector

- LCD(Liquid crystal display)
- DLP(Digital light processing)

### • LCD(Liquid crystal display)

LCD is used to display videos, images & computer data on the screen. LCD uses metal halide lamp to emit the light and a series of Di-chloric filters to separate the lights. LCD videos signals are comprised of primary colours: red, green & blue. LCD are more light efficient than DLP projectors. [6]

### • DLP(Digital light processing)

DLPis based on DMD(Digital micromirror device) chip.Each DMD chips is comprised of two million of tiny mirror.Each tiny mirror is capable of producing pixels. The advantages of DLP projector are higher constrast and less door screen effect. The image is created by small mirror.

### B) Optical Mouse

Itisawireless device which uses the graphitelight emitting diode for purpose of movements of opticalmouse[5].E-ball can be easily carried from one placeto another place.



Figure:3 Optical mouse

# C) Virtual Keyboard

It is a wireless laser projection keyboard which uses the priniciple of sensor technology.virtual keyboard is also called laser keyboard[4].It is not physical but it is visible on a flat surface when pc is working.In laser keyboad infrared sensors are used.keryboard consists of three components,

- Sensor module
- IR-light source
- Pattern-projector
- Sensormodule

The sensor module act as eyes of the keyboard. It is used to detect which key is pressedbyuser.

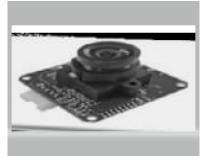


Figure:4 Sensor module

• IR-Lightsource

The IR-light source is not visible by the user. The IR-light source emits a ray of infrared light.



Figure:5 IR-Light source

• Pattern Projector

The pattern projector is used to display the image of keyboard is projected on a flat surface.



Figure:6 Pattern projector

# D) Paper Sheet Holder

If there is no wall for projection of computer screen. We can make the use of paper sheet holder. The holder can be opened by pressing it in the lower part of pc for 5 seconds. It is used to portrays the presentation. The Figure:7



Figure:7 Paper sheet holder

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### E) Power Port

The Power port is used to plug-in any electronic device such as DVD player.

#### F) Modemport

The Modem port is used to connect the internet to the computer.

# **5-STEPS OF E-BALL**

1. Place the pc using the two stands on suitable surface it is opened by pressing and holding two buttons which is located at each side of the E-ball.

2. Adjust the LCD projector and detach the optical mouse from the body of E-ball.

3. The keyboard is activated by pressing the keyboard activation button.

4. Press the front button projector will pop up and a computer screen will be focused on wall. If there is no wall, use paper sheet holder.

5. Now E-ball is ready to use do whatever we want[5].

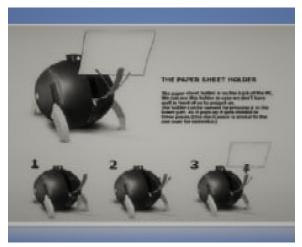


Figure:8 Paper Holder Steps

# IV. SOFTWARE INTERFACE

The software interface of E-ball pc is highly stylized with icons that can be remembered easily that support all type of windows operating system. E– ball concept pc don't have any external display unit.

# V. ADVANTAGE OFE-BALL

- It is portable.
- It is hard free to use.
- It is efficient.
- It has a larger storing capacity.
- It is easy to understand.



Figure: 9 E-ball

#### V. DISADVANTAGE OF E-BALL

- Cost of E-ball is higher .
- It is not easy to understand if there is any error in the hardware resource.
- The laser keyboard cannot work without smooth surface.
- It cannot work in Normal OS, Except than Microsoft windowsOS.

# CONCLUSION AND FUTURE SCOPE

E-ball can be used in high-tech and industrial sectors, used with smart phone, PDAs, E-mail, word processing and spreadsheet tasks, also in operate theatres.

As, year passes, the computer size is becoming smaller. The world has come to our pocket because of E-ball pc device. The new concept of E-ball pc that has been proposed few years back but yet has not practically implemented for use in any field. The E-ball has taken the computer technology to new horizons.

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