An Overview of Wireless Mouse

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ABSTRACT: As the method of existing wired mouse not adequately efficient in terms of mobility and independent of wire. So the users switch over to the concept of wireless mouse which has many unique features. In this paper, we are scrutinizes the methodology of wireless mouse A wireless mouse is a computer mouse that needs no wires to send signals from the mouse to a computer. Over time, different technologies have led to the emergence of different types of wireless mice on the market. The cordless mouse offers obvious advantages over its tethered brethren, such as being able to point and click on a computer screen from across the room and run on multiple surfaces.

Keywords: Mice, Tether less

1. **INTRODUCTION**: A mouse is a pointing device that functions by [1] two-dimensional motion relative to its supporting surface. Physically, a mouse consists of an object held under one of the user's hands, with one or more buttons. The mouse sometimes features other elements, such as "wheels", which allow the user to perform various system-dependent operations, or extra buttons or features that can add more control or dimensional input. The mouse's motion typically translates into the motion of a pointer [2]on a display, which allows for fine control of a graphical user interface. Wireless mouse technology predominantly uses radio frequencies (RF) to send signals from the mouse to the computer. Like other radio technologies, this requires a transmitter and a receiver. The mouse transmits radio signals to a receiver, which is itself connected to the computer hardware, normally via a wire. This kind of wireless mouse is very reliable, and capable of transmitting the mouse's movements to the receiver from across a room. The various types of mouse technologies are-

- Mechanical mice
- Optical and laser mice
- Inertial and gyroscopic mice
- 3D mice
- Tactile mice
- Ergonomic mice
- Gaming mice

RF MOUSE: Wireless mice usually work via radio frequencies (2.4GHz ISM Band) commonly referred to as RF. RF wireless mice require two components to work properly – a radio transmitter and a radio receiver. A radio frequency (RF) transmitter is usually integrated inside the mouse. The mouse records its movements and buttons that are clicked and then sends this information via radio signal to the receiver.
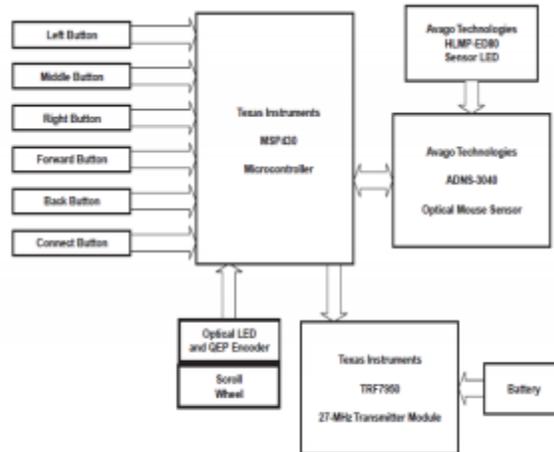
Fig 1. Mouse Transmitter Hardware Architecture

RF Receiver: The radio frequency (RF) receiver usually connects to the computer's peripheral mouse input. It receives these RF signals, decodes them, and then sends these signals directly to the computer as normal. RF receivers usually come in a few styles. The majority come as built in components that connect to the mouse input, others come as a separate card that is installed in one of the many expansion slots of computers, and the third type of receiver is a separate unit that is connected to a cable going directly to the computer's peripheral input. Since the technology has been mastered, most wireless mice [3]have integrated receivers that plug into a computer's peripheral input and are very small in size.

IR MOUSE: In which the mouse is equipped with a Dot per Inch (DPI) shift button to adjust between 3 levels, meeting both common and gaming needs. By adopting infrared technology, the Anker 2.4G Wireless Mouse can be used on almost any surface and works with amazing stability.
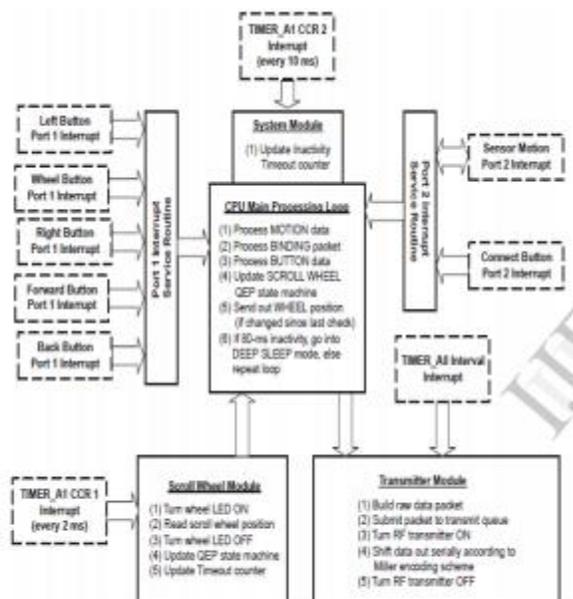

Fig 2. Mouse Transmitter Software Architecture

BLUETOOTH MOUSE: A Bluetooth mouse is a computer mouse that uses radio waves to communicate wirelessly with a computer. Bluetooth mice are mobile, have a great range, and can be used with many different devices.

OPTICAL MOUSE: An optical mouse is an advanced computer pointing device that uses a light-emitting diode (LED), an optical sensor, and digital signal processing (DSP) place of the traditional mouse ball and electromechanical transducer. Movement is detected by sensing changes in reflected light, rather than by interpreting the motion of a rolling sphere. The optical mouse takes microscopic snapshots of the working surface at a rate of more than 1,000 images per second. If the mouse is moved, the images change. The tiniest irregularities in the surface can produce images well enough for the sensor and DSP to generate usable movement data. The best surfaces reflect but scatter light; an example is a blank sheet of white drawing paper. Some surfaces do not allow the sensor and DSP to function properly because the irregularities are too small to be detected. An example of a poor optical- musing surface is unfrosted glass. In practice, an optical mouse does not need cleaning, because it has no moving parts. This all-electronic feature also eliminates mechanical fatigue and failure. If the device is used with the proper surface, sensing is more precise than is possible with any pointing device using the old electromechanical design. This is an asset in graphics applications.
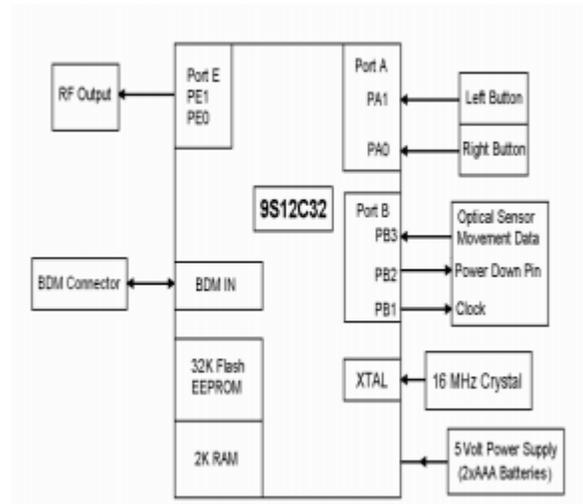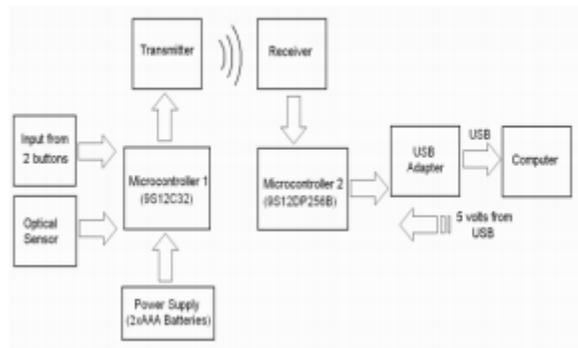
LASER MOUSE: A laser mouse[4] is a type of computer pointing device that uses a laser beam rather than a ball to track the movement of the user's hand. This type of mice is becoming increasingly common because they are perceived to have better tracking ability. In addition, they are not as subject to gumming up and subsequent distortion of the signal as conventional ball mice [1]. The lack of moving parts also makes them far less subject to damage.

MECHANICAL MOUSE: A mechanical mouse is a computer mouse that contains a metal or rubber ball on it's under side. When the ball is rolled in any direction, sensors e allows quick and easy access too many icons and operations on the computer, such as selecting from a list of possible actions (menu), work

with Windows and moving files. When you move the mouse, the rubber ball turns and runs two rollers, both associated with wheel with slots. Light-emitting diode (LED) sends light through the slits and transducers convert light into an electrical signal. Pressing the button will send additional information to the computer. The main goal of any mouse is to translate the motion of your hand into signals that the computer can use.

2. **CONCLUSION**: Its intrinsic flexibility, lack of infrastructure, ease of deployment, auto-configuration, low cost and potential applications makes it an essential part of future pervasive computing environments. From a technological point of view, the realization of this vision still requires a large number of challenges to be solved related to devices, protocols, applications and services. From an economical point of view, wireless mouse open up new business opportunities for various kind of people.

3. **REFERENCES:**

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