HEAD MOVEMENT TRACKING SYSTEM

ABSTRACT

Micro electromechanical systems (MEMS) (also written as micro-electro-mechanical, Micro Electro Mechanical or microelectronic and Micro Electro Mechanical systems) is the technology of very small mechanical devices driven by electricity and it merges at the nano scale into nano electromechanical systems (NEMS) and nanotechnology.

MEMS are separate and distinct from the hypothetical vision of molecular nanotechnology or molecular electronics. MEMS are made up of components between 1 to 100 micrometers in size (i.e. 0.001 to 0.1 mm) and MEMS devices generally range in size from 20 micrometers (20 millionths of a meter) to a millimeter. They usually consist of a central unit that processes data, the microprocessor and several components that interact with the outside such as micro sensors.

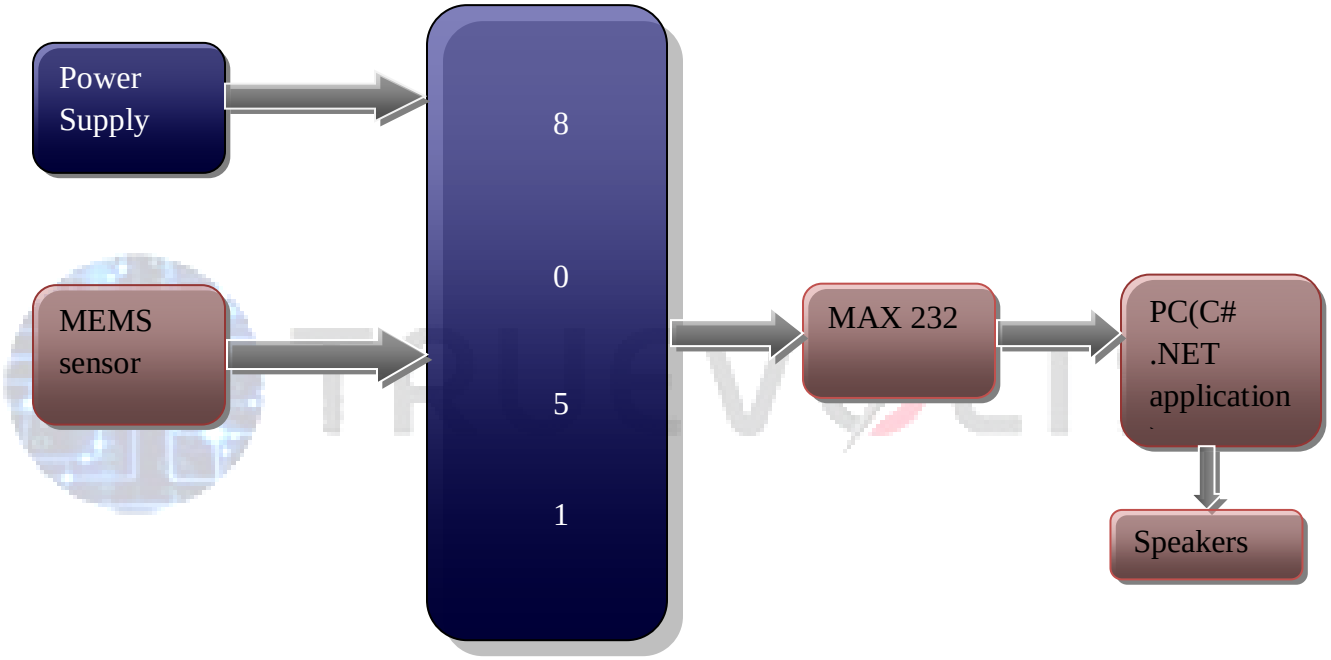
The main aim of this project is to track the position of head using MEMS. The MEMS will be placed on the head. Whenever the head moves in any direction, the mechanical movement of the head will be recognized by MEMS.MEMS convert this mechanical head movement into equivalent electrical signals and send it to the microcontroller. The microcontroller receives these signals and sends them to the PC. And here the front end application will be developed in PC on c# .NET platform which can read the data from the serial interface and as per the gesture according to the head movements, the audio is provided through speakers like LEFT, RIGHT etc.

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

APPLICATIONS:

- Industrial applications
- Automatic control systems
- Wheel chair for PHC

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM: