

# Wireless voice Controlled cursor Control using RF

Karthik.B, Hemalatha.S, Jasmin.M.

**Abstract:** This paper provides a solution for the hand impaired people who cannot use the mouse to operate the computer. This is a device which controls the mouse using voice commands using HM 2007 Voice DSP Processor. A specific function is assigned to specific instructions. According to the instructions given, the mouse is controlled wirelessly using RF. Therefore, to make the assistive device for the disabled people is the main aim of this paper. Here, we design a mouth-activated mouse applying face detection technique. By using a webcam, the pictures of mouth position can be captured in a computer. We can then control the cursor and click the mouse by moving mouth. Through this equipment, the living quality of disabled people can be improved.

**Keywords :** Voice DSP Processor, face detection technique, tracking..

## I. INTRODUCTION

The progressive growth of PCs in recent days has greatly helped in the technology development. Computers capable of ascertaining capacities have augmented the scope of human's perception to the degree that we get unlimited chances to build our mindfulness and information of numerous angles throughout our life.

Therefore, we have connected a basic office of registering to make this investigation, with the forecast that we might utilize different body parts to control PCs rather constraining utilization to just hands. The greater part of the PCs introduce Windows, and Mouse assumes a vital part in utilizing this product. Along these lines, we will likely utilize the mind to control the mouse. The hand controlled mouse is not so much advantageous to numerous crippled individuals. Subsequently, we have decided utilizing the mouth to control PCs, because hands are not accessible for the greater part of debilitated individuals.[1-5]

## II. Related Study

## II. EXISTING SYSTEM

In the recent days, the research in the field of assistive devices integrated with computers has greatly increased. In a conventional QWERTY keyboard, the number of keys is high, and the spaces between neighboring keys is very less for physical challenged. Chan-Hao Huang and Sheng-Wen Shih proposed a new type of prosthetic keyboard with lesser keys and with increased space between neighboring keys which will be better suited for the physically challenged. This keyboard is designed with only 12 keys, and radix-12 Huffman algorithm is used for encoding each character. Compared to the different input methods, the proposed method assists the hand impaired person to type at a faster rate.[5-10]

## III. PROPOSED SYSTEM

The purpose of this paper is to identify the position and the shape of the mouth when it is opened and closed. The image can be captured by webcam, and is used to recognize the shape of the mouth. This system will help the hand disabled people to have control of the cursor easily. Before implementing the system, the following introductions should be clearly understood: Initially when the system starts, the system converts the image position from left to right; because the image captured by a webcam will be opposite to that of the original person. Secondly, the system converts the RGB image into HSV using the default setting of HSV. This helps to identify the position of mouth. Enhancement techniques such as Erosion and dilation are applied to the image to erase the stains. It is then linked with the webcam to locate the position of the person's mouth. From that image, the system identifies the position of cursor in the monitor, and then the shape of mouth is analysed to identify when the person's 'click' the Mouse.[10-14]

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IV. SYSTEM ARCHITECTURE

A. Block diagram

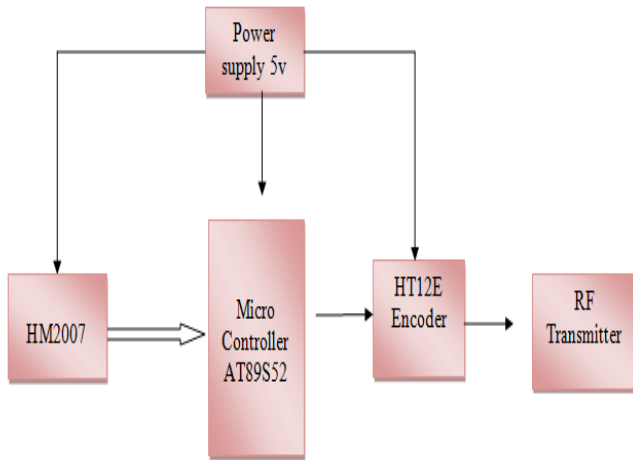


Fig 1. Transmitter section

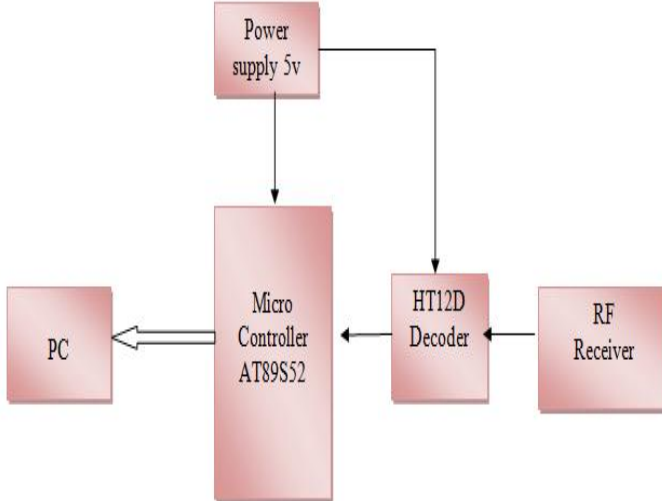


Fig 2. Receiver section  
B. Voice recognition kit using hm2007

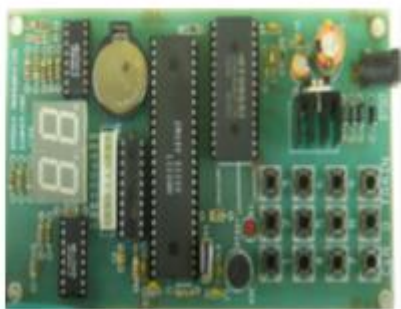


Figure 3. Voice Recognition kit

C. Working

Speech recognition has become a suitable method for controlling appliances, computers and toys. At the simple level, while using this tool or appliance, it helps the user to perform parallel tasks. The main component of the kit is the speech recognition ICHM2007. This IC will be able to recognize 20 words, each of length 1.92 sec. A digital display and keypad can be fixed in the kit to communicate with the HM2007 chip and it is also used for

programming the chip. Generally, the keypad comprises of 12 normally open contact switches.[18-20] When the circuit gets switched ON, “00” will be displayed, the red color LED (READY) glows and the circuit gets ready and awaits a command.

D. Training Words For Identification

Initially, press “1” on the keypad, “01” gets displayed and the LED turns OFF. Then the TRAIN key is pressed. Now the LED turns ON to keep the circuit in training mode, for the first word. The target word is said into the onboard microphone placed near the LED. The circuit will accept the input word, so that the LED starts blinking. First it blinks OFF then ON. This word will now be identified as the “01” word. Suppose if the LED does not blink, then begin again by pressing “1” and then “TRAIN” key. Then “2” is pressed followed by TRAIN to identify the second word. It will accept and will be able to identify a maximum of up to 20 words. It is needed to train only 10 target words that is required.[15-17]

E. Simulated Independent Recognition

The Independent speech identification system depends on the speaker. The voice that is utilized to prepare the system will demonstrate the most astounding recognition precision. Be that as it may, independent speech recognition can additionally be included. To recreate speaker independence one should use more than single word space for every objective word. Presently we utilize four word spaces for each objective word. Subsequently we acquire four distinct enunciations of every objective word. The word spaces 01, 02, 03 and 04 are dispensed to the primary target word. We proceed the same for the left out word space. That is, the second target word will utilize the word spaces 05, 06, 07 and 08. We proceed in this way until all the words are programmed.

In the event that you are exploring different avenues regarding speaker autonomy use diverse individuals when preparing a target word. This will empower the framework to perceive diverse voices and articulations of the objective word. If we increase the system resources apportioned for independent recognition the circuit will get to be more powerful.

V. CONCLUSION

In this research, the cursor position and click functions of the mouse are controlled. But still there are many issues to be resolved. For instance, under fixed position of the webcam, it is difficult to recognize the mouth position mainly when the user nods or raises his/her head. This greatly restricts the movement of the cursor. The brightness of the environment also has a great impact on the processing of the image captured by the webcam. This effect of lights is considered to be decreased by the usage of HSV mode. The right key of the mouse and the double click of mouse are not included in the research. In the future, this idea can be still improved to be used in any computer so that it helps the physically challenged people to use the computer effectively.

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