Voice In Text Out And Text In Voice Out Communication Device For Deaf-Dump

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Abstract - Communications between deaf-mute and a normal person have always been a challenging task. This paper describes a way to reduce barrier of communication by developing an assistive device for deaf-mute persons. The advancement in embedded systems, provides a space to design and develop a sign language translator system to assist the dumb people, there exist a number of assistant tools. The main objective is to develop a real time embedded device for physically challenged to aid their communication in effective means. The proposed work in this paper is to implement a system without handheld gloves and sensors and by text to voice converter speck jet IC and voice to text conversion and vice versa, thus making the communication simpler for deaf and dumb people by a handheld embedded device along with the hardware setup.

Keywords — communication aid, PIC18F, MP Lab

1. Introduction

The world is a place of misery. We see there are millions of people who suffer from hearing loss (deaf) and speech loss (dumb) that might have occurred since birth or at a later stage during their lifetime. For those who suffer, this cannot be cured by medicines because they are not some disease caused by some virus. There are no sages alive who can cure them by their will power and hence those people must depend on science and technology to innovate a solution to make them live a better life.

Deaf and dumb often communicate via sign language, a kind of representation of words through hand and finger positions. But it has got serious limitations because it is not easy to understand by a normal listener on the opposite and to make things worse, not many in the world know sign language at all. Also, it is difficult to represent all the words of a plain language like English into a sign language symbol. Even if there is one, then learning and using them would be tough and cumbersome.

2. SYSTEMDESIGN

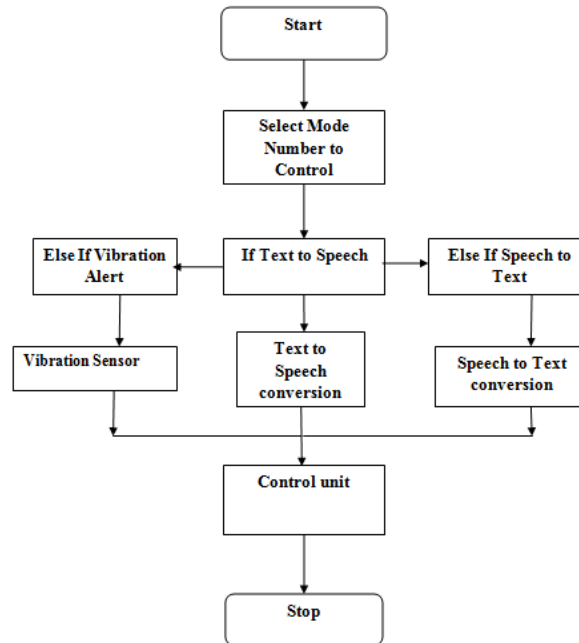Project has three different mode for controlling deaf and dump device. Fig.1 shows the flow our project.

Fig.1 Flow Diagram

3. SYSTEM DESCRIPTION

Our project aim is to build a new form of handheld communication device that would help deaf and dumb people to communicate with others in a common language like English. The project can be divided into three modules.

Proposed system is based on speech synthesis and speech recognition technology. Speech Recognition will converts Voice Input to Text Output which is for deaf mute to understand what others speaks Speech Synthesis that is Text to Speech Converter converts Text Input to Voice Output which is for hearing person to understand what the deaf mute is saying.

Text to Voice Conversion:

It involves advanced Speech Recognition feature and display. The process is to recognize the words spoken by a normal person and to convert this voice input to text and to display it on the screen of the device.

Voice to Text Conversion:

The process is to recognize the words spoken by a normal person and to convert this voice input to text and to display it on the screen of the device.

Vibration Alert

If some people behind calling meaning MEMS MIC automatically detect and give vibration alert in road.
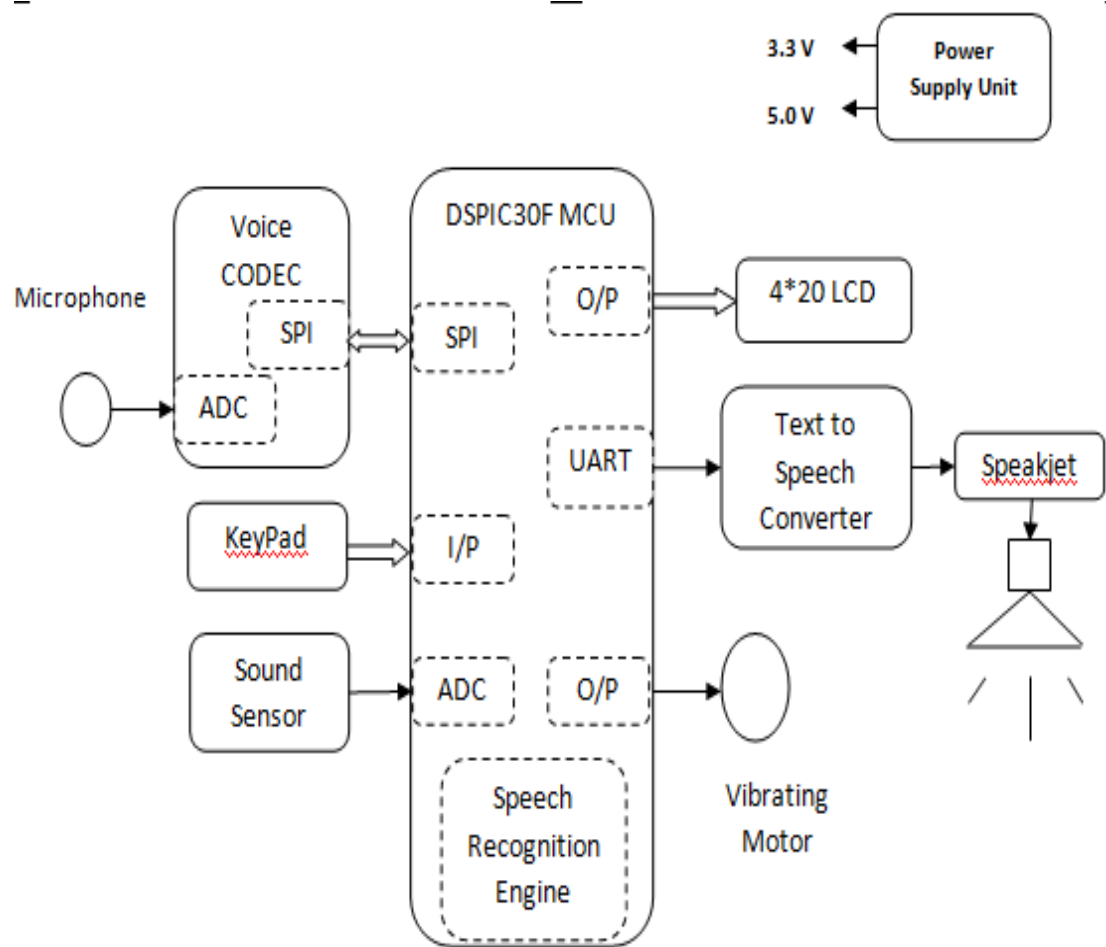

Fig.2 Block Diagram
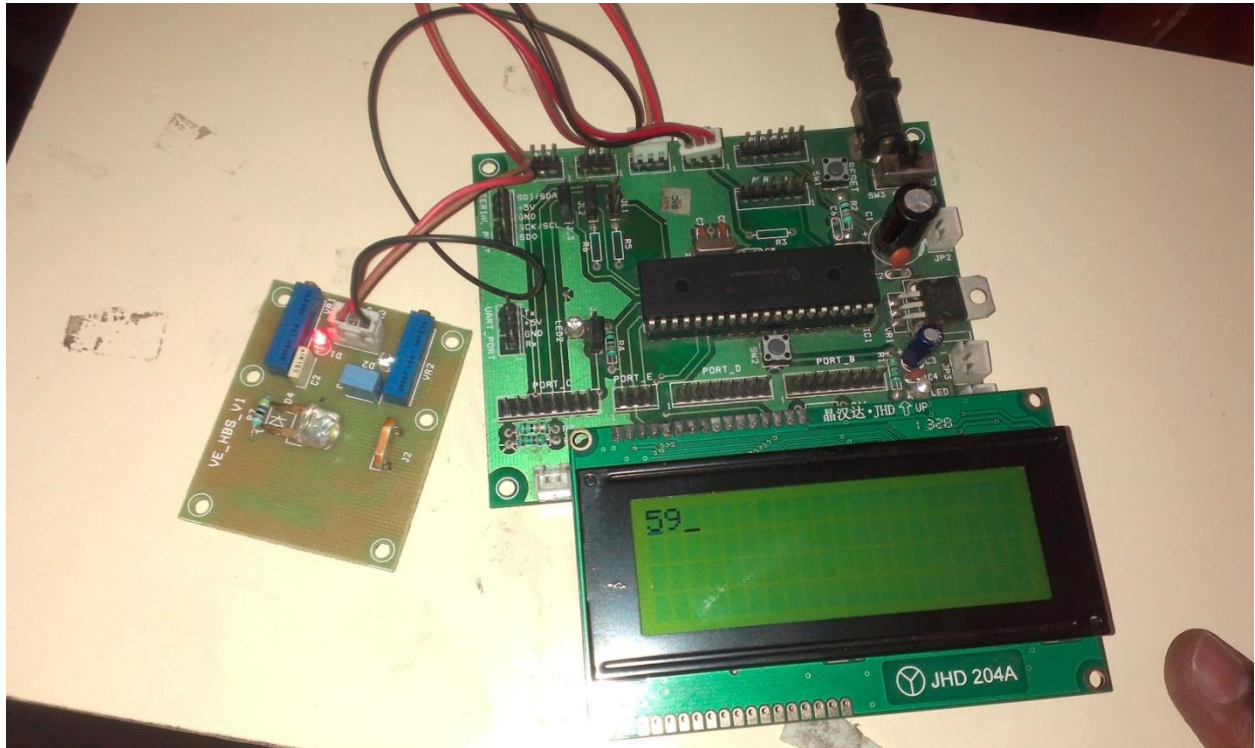
4. RESULT ANALYSIS

Fig.3 Project image

5. CONCLUSION

This paper has described the development of portable, voice output communication aid controllable by automatic speech recognition. The device can be configured to enable the user to create either simple or complex messages using a combination of a relatively small set of input "words." Evaluation with a group of potential users showed that they can make use of the device to produce intelligible speech output. The evaluation also, however, highlighted several issues which limit the performance and usability of the device, confirming that further work is required before it becomes an acceptable tool for people with moderate to severe dysarthria. Overcoming these limitations will be the focus of our future research.

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