"IVRS for Industrial and Home Appliances Control"

Prof. Sachin D. Anap

Assistant Professor, Dept. of Electronics Engg., Pravara Rural Engineering College, Loni, India

Abstract: The Interactive Voice Response (IVR) System is a bridge between folks and system hardware by connecting the phone system with the information. The phone user will access the knowledge from anyplace at Associate in Nursing time just by dialling a mere range and following an on-line instruction once a association been built up. The IVR framework utilizes pre-recorded voice responses to produce data in response to Associate in nursing input from a phone caller. The input could also be given by means that of touch-tone or twin Tone Multi-Frequency (DTMF) signal, that is generated once a guest presses a key of his/her electronic gear, and therefore the sequence of messages to be contend is set dynamically consistent with an inside menu structure (maintained inside the IVR application program) and therefore the user input. The IVRS system which is able to be designed will give a perfect stage for the operation of new businesses and existing modest issues. It'll be extremely economical and economical thanks to replace the Dialogic card that is incredibly pricey and needs a high support and customary up degree. The IVRS framework which is able to be designed will comprises straightforward elements like microcontroller and a few basic application chips interfaced to a system which is able to have tiny software system running within the backend whereas the opposite jobs square measure performed on the face.

Keywords: IVRS, GSM, ADC, DTMF, LM.

I. INTRODUCTION

The mentioned Seminar relies on the world's most powerful system. Most of the services provided in today's world ar voice interactive, you decision up your bank and computerized voice can speak to you, and guide you to enter a selected variety from your phone to induce the specified service. This service is just accessible through the quick speed computers and having large quantity of memory. We have a tendency to enforced interactive service for industrial applications. [6]

You can switch on/off devices mistreatment your transportable or land line phone 5 numbers masses are often connected to the 5 relay provided. Not solely you'll start /off devices it'll conjointly dial out a sign just in case of security threat or any safety or protection parameters goes on the far side safety limit. Just in case of any of the on top. Temperature of the machinery has gone on the far side safety limit, the device can 1st cut the plant and dials out the pre keep sign and delivers the emergency message. It'll dial out foe 5 times at the interval of 1 minute and once more monitor the parameters, and if the parameters aren't among limit once more it'll dial out. This cycle can repeat till the parameters become traditional.[2]

II. PROPOSED SYSTEM

This technique created by ARM7, The IVR system uses pre-recorded voice responses to produce info in response to AN input from a phone caller. The input is also given by means that of touch-tone or twin Tone Multi-Frequency (DTMF) signal, that is generated once a caller presses a key of his/her electronic equipment, and therefore the sequence of messages to be contend is set dynamically consistent with an inside menu structure (maintained among the IVR application program) and therefore the user input[7]
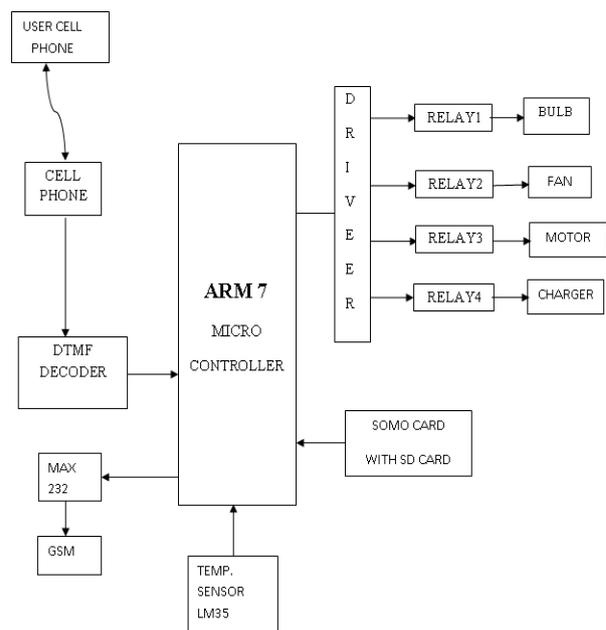
III. BLOCK DIAGRAM

Fig.1. Block Diagram IVRS

A. Block Diagram Description

• **DTMF Detector**
The CAMD CM8870/70C gives full DTMF recipient ability by gathering action each band split channel and computerized decoder capacities into one 18-pin DIP, SOIC, or 20-pin PLCC bundle. The CM8870/70C is plant made victimization progressive CMOS method technology low power utilization (35mW, max.) and exact knowledge handling. The filter section uses a switched electrical device technique for each high and low cluster channels and dial tone dismissal. The CM8870/70C decoder

IJIREEICE

ISSN (Online) 2321 – 2004
ISSN (Print) 2321 – 5526

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN ELECTRICAL, ELECTRONICS, INSTRUMENTATION AND CONTROL ENGINEERING
Vol. 4, Issue 4, April 2016

utilizes computerized figuring techniques for the detection and coding of all sixteen DTMF tone pairs into a 4-bit program. This DTMF receiver reduces outside component count by providing associate degree on-chip differential input electronic equipment, clock generator, and a three-state interface transport. The on-chip clock generator needs exclusively an occasional price TV crystal or ceramic resonator as associate degree external element.
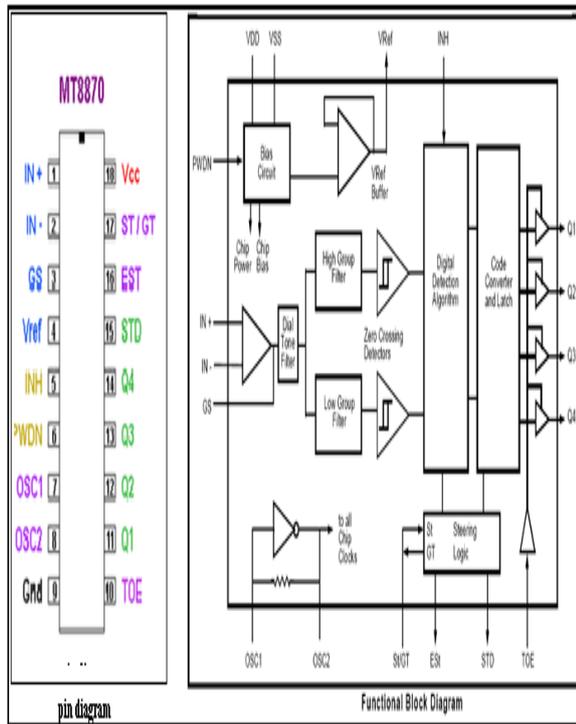

Fig.2 DTMF Detector

Table 1 DTMF Frequency

DTMF Keypad Frequencies (with sound clips)			
	1209 Hz	**1336 Hz**	**1477 Hz**	**1633 Hz**
697 Hz	1	2	3	A
770 Hz	4	5	6	B
852 Hz	7	8	9	C
941 Hz	*	0	#	D

- **SOMO card**

The SOMO-14D could be a little Audio-Sound module that may replay pre-stored audio files like voice and song from a micro-SD CARD memorial. The module supports 4-bit ADPCM auditory records with test rates from 6 KHz up to with sample rates from 6 KHz up to 32 KHz. By victimization the freely offered software system instrument, any (.wav) or else MP3 (.mp3) file may be basically born-again to the ADPCM (.ad4) format which may be saved to a micro-SD memory card.
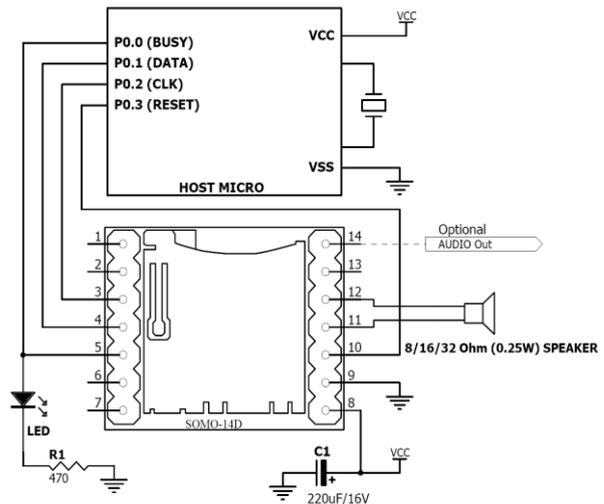

Fig.3. Typical Host Micro Interface

The compact 14pin drop-in-module takes up terribly stripped board area and is right for any application that needs embedded audio. The module offers 2 modes of operation, SERIAL-MODE and therefore the KEY-MODE. The SERIAL-MODE provides an easy 2-wire interface to any smaller scale controller by means of its data and CLK lines. Audio operations similar to Play, Pause, Stop and Volume organization functions are all to be had to the host small via easy serial commands.

The KEY-MODE provides a standalone operation wherever a bunch small isn't needed. With solely three push catches, a 3V battery and a speaker, a particularly compact and low part count MP3-Player like system may be enforced. In short, the SOMO offers a awfully versatile, compact and low price embedded audio answer for several applications.
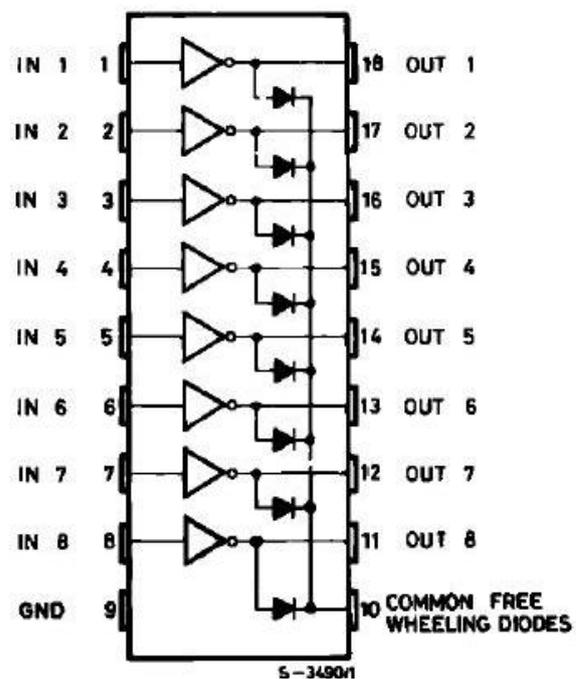
- **Relay Driver**

Fig.4 Relay pin configuration

The ULN2801A-ULN2805Aeach comprises 8 Darlington transistors with communal emitters and primary suppression diodes for inductive multitudes. Every Darlington options crest load current rating of 600mA (500mA persistent) and may stand up to at least50V within the off state. Outputs perhaps paralleled for higher current capability. 5 versions are offered to modify interfacing to plain logic families: the ULN2801Ais designed for general applications with a current limit resistor; the ULN2802A has a ten. 5kW input electrical device and zener for 14-25VPMOS; theULN2803Ahas a pair of.7kW input electrical device for 5VTTL and CMOS; the ULN2804A fuses a ten.5kW input electrical device for 6-15V CMOS and therefore the ULN2805A is meant to sink a minimum of 350mA for normal and Schott key TTL wherever higher output current is needed. every type are provided in a very18-lead plastic DIP with a copper lead from and have the convenient input opposite- output pin resolute modify board layout.

• **Temperature sensing element**

The LM35 series are exactitude integrated-circuit temperature devices, whose productivity voltage is linearly relational to the Celsius (Centigrade) heat. The LM35 therefore has a plus over linear temperature sensors label in ° Kelvin, because the user isn't needed to cipher an oversized constant voltage from its output to become appropriate Centigrade scrambling.

The LM35 does not require any exterior activity or trimming to source distinctive precisions of $\pm 1/4°C$ at hotness and $\pm 3/4°C$ over a full -55 to $+150°C$ temperature varies.
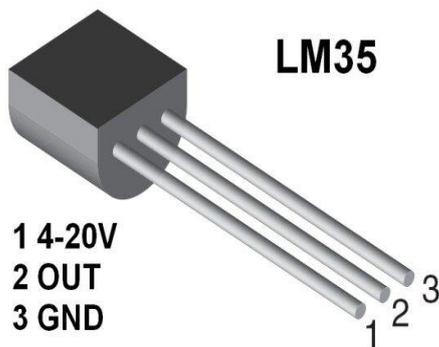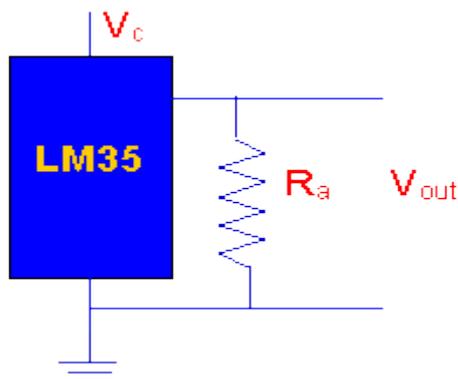

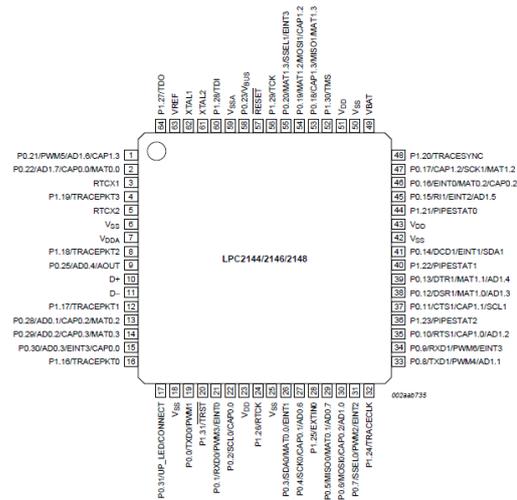Fig.5 LM 35

Fig.6 LM 35 with load

• **Microcontroller**

Fig.7Microcontroller

The LPC2141/42/44/46/48 microcontrollers area unit supported a 16-bit/32-bit ARM7TDMI-SCPU with period of time emulation and embedded trace support, that mix the microcontroller with embedded high-speed non-volatile storage starting from thirty two K to 512 K. A 128-bit wide memory interface and distinctive accelerator design modify 32-bit code execution at the most clock rate. For crucial code dimensionapplication, the selection 16-bit Thumb mode reduces code by quite half-hour with tokenism performance penalty.

Due to their small size and low power consumption, LPC2141/42/44/46/48 area unit ideal for applications wherever miniaturization could be a key demand, like access management and location.

IV. SOFTWARE DESIGNING

In this system micro'C skilled is used to develop the program for ARM7 processor. The programming is completed by victimization in Embedded C language. The compiler used here is ANSI C as a results of it is best resolution for developing code for PIC devices jointly these square measure user friendly and a worth effective tool for all embedded C comes. This choices spontaneous IDE powerful compiler with advance version. It having lots of package and hardware libraries with additional tools will assist you in your work

A. Algorithm
1.   START
2.   Initialize GSM and DTMF Decoder.
3.   Await user telephone.
4.   If decision created then play the welcome note and directions.
5.   If decision note created then head to step three.
6.   Enter the secret.
7.   If secret accepted then goes to next step otherwise head to step six.
8.   Press the keys consistent with instruction for activate the device.
9.   Management the devices through relay driver.

10. If temperature of machine is on top of the edge limit, GSM can send SMS to user.
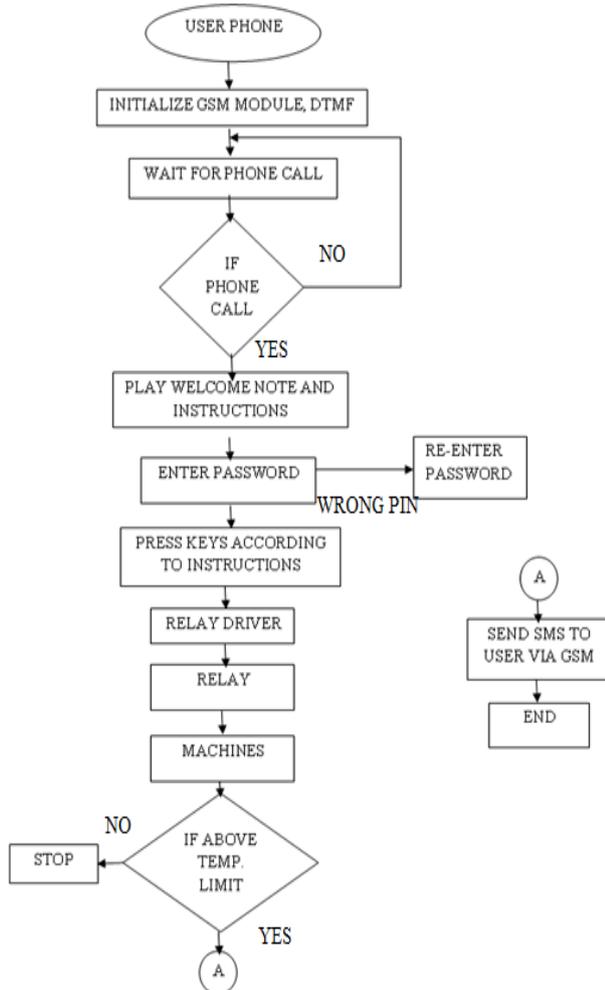11. STOP.

B. Flow chart

Fig.8. Flow chart

V. APPLICATION

This system is employed for kind of purpose wherever you would like to manage totally different application like Fan, Bulb, Motor, and Charger remotely.

1. in business for Drilling, mining, cutting machine.
2. in industrial appliances management.
3. Venturesome space in nuclear plant.

VI. CONCLUSION

In today's world everything must be done from the solace of one's home or home or workplace. For this application is ready in such the way that they will be simply accessed through computers. Within the same manner our system aim is to supply the complete info to the client at the tip of his fingers. Because of this technique the normal manual manner of handling the client queries are going to be handled in an exceedingly a lot of technological and automatic manner. This kind of system performs operations the same as that of a person's manipulator.

REFERENCES

1. AdityaVashistha, IVR Junction Building Scalable and Distributed Voice Forumsin the Developing World,Microsoft Research India William Thies Microsoft Research India
2. A. Alkar and U. Buhur, "An Internet Based Wireless Home Automation System for Multifuntional Devices", 2005.
3. David Cantor, Douglas Wiliams, Assessing Interactive Voice Response for the National Crime Victimization Survey
4. Srivastava Kumar Devesh, Dr. Hada Singh Priyank ,Effective Risk Management Techniques in Development of IVR Software Dept. of CSE, Manipal University, Jaipur, Rajasthan, India.
5. EswaraRao Pandiripalli1, Phani Ram Veeramachaneni2, SambhaniMadhu Babu3, JafarSadikUsha, Interactive irrigation system through mobile with IVR response Rama College of engineering & technology, Telaprolu, Vijayawada, Krishna District, A.P.
6. AdityaVashistha ,IVR Junction: Building Scalable and Distributed Voice Forums in the Developing World Microsoft Research India William Thies Microsoft Research India
7. George Papazidis, George DimitriouCardisoft,Voice Campus An Automated Interactive Voice Response System for Students Andreas Velonis, The ofilosMilonas, S.A., 60 Monastirioustreet, GR-54627, Thessaloniki

BIOGRAPHY

Prof. Sachin D Anap, has completed his M.E. (Electronics and Telecommunication) & B.E. (Electronics and Telecommunication). He is working as a Assistant Professor in Electronics Department, Pravara Rural Engineering College, Loni, Dist. Ahmednagar, Maharashtra, India. Prof. S.D. Anap has teaching experience of 08 years to Graduate Students. Prof. S.D. Anap has Published 07 papers in International Journal, 01 paper in National Journal & presented 03 papers in National Conference.