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"Industrial Automation using IVRS"

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Abstract: Currently a day's Constant electricity fluctuation and irregular power availableness for irrigation and industrial area unit daily issues visaged by several farmers for a protracted time. tho' several farmers use diesel operated pumps, an acceptable different, which needs neither diesel nor electricity and nonetheless meets their irrigation necessities could also be welcome (1). And additionally in home power are wasted in numerous things thanks to those things electricity bill will increase. To rectify such variety of issues we have a tendency to developed a tool that is to be used of dominant Motor pumps from any location. it's a mobile primarily based remote system for shift on/off and observance the water pumps, by mistreatment that a farmer or an individual are often free from numerous routine issues related to timely irrigation, saving lots of water, electricity, fuel, time, value effective (2).

Keywords: DTMF- twin tone multiple frequency, IVRS-interactive voice response system, , ADC- Analog to Digital convertor, LM- linear monolithic, GSM- international System for mobile communications.

I. INTRODUCTION

Witnessing numerous work hazards concerned in domestic cultivation and vouching an equivalent in numerous areas the requirement for modification appeared evident. Customizable IVRS module ability to accommodate usage for a group time betting on the provision of electricity. Eliminate uncertainty in power, electrical hazards In telecom, Interactive Voice Response, or IVR, is a phone technology that permits a laptop to discover voice and bit tones employing a traditional call (3). The IVR system will respond with pre-recorded or dynamically generated audio to additional direct callers on the way to proceed. IVR systems may be accustomed management nearly any perform wherever the interface may be reduced into a sequence of tranquil menu choices. After bent IVR systems typically scale well to holder huge choice capacity. Taking benefits of IVRS we tend to ar developing the system for faculty automation exploitation vocalization net protocol .Which is represented in next section. A caller dials a number that's Associate in Nursingswered by an IVR system. The IVR system executes Associate in Nursing application that is tied to range|theamount|the quantity} dialed DNIS (Dialed number data service). As a part of the appliance, recorded audio files or dynamically generated Text to Speech (TTS) audio make a case for the choices out there to the caller. The caller is given the selection to pick out choices exploitation DTMF tones orspoken word. Speech recognition is often accustomed carryout additional complicated transactions and simplifies the appliance menu structure (4).You can switch on/off devices abuse your transportable or land line phone five numbers heaps ar usually joined to the four relay give. Not entirely you will begin /off devices it will together dial out a proof simply just in case of security threat or any safety or protection parameters goes on the way facet safety limit. simply just in case of any of the on high of, for ex. Temperature of the machinery has gone on the way facet safety limit, the device will first cut the plant and dials out the pre keep sign and delivers the emergency message. It'll dial available for 5 times at the interlude of 1 minute and done over display the parameters, and if the parameters are not among limit over again it will dial out. This cycle will repeat until the parameters become ancient (5).

II. PROPOSED SYSTEM

This technique created by ARM 7, The IVR system uses pre-recorded voice responses to harvest information in answer to an effort from a mobile visitor. The input is also given by means that of touch-tone (DTMF) signal, that is produced once a visitor presses a key of his or her electrical tackle, and thus the order of posts to be contend is set energetically steady with an inside menu structure (conserved between the IVR use database) and therefore the user input

III. BLOCK DIAGRAM

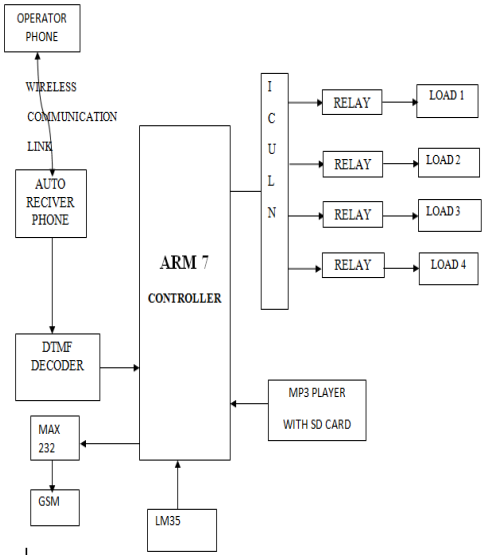

Fig.1. Block diagram

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IV. BLOCK DIAGRAM DESCRIPTION

- DTMF Detector

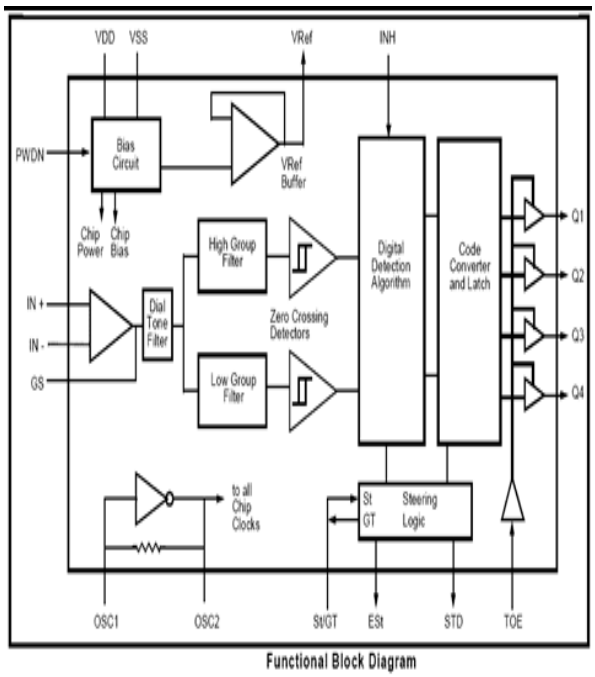

Fig.2. DTMF Detector

DTMF Decoder IC(MT8870) Description The M-8870 could be a full DTMF Receiver that integrates each band split filter and interpreter purposes into a single 18-pin DIP package. factory-made victimization CMOS method technology, the M-8870 offers low power consumption(35mW max) and precise information handling. Its filter section uses switched electrical device technology for each the high and low cluster filters and for dial tone r ejection.

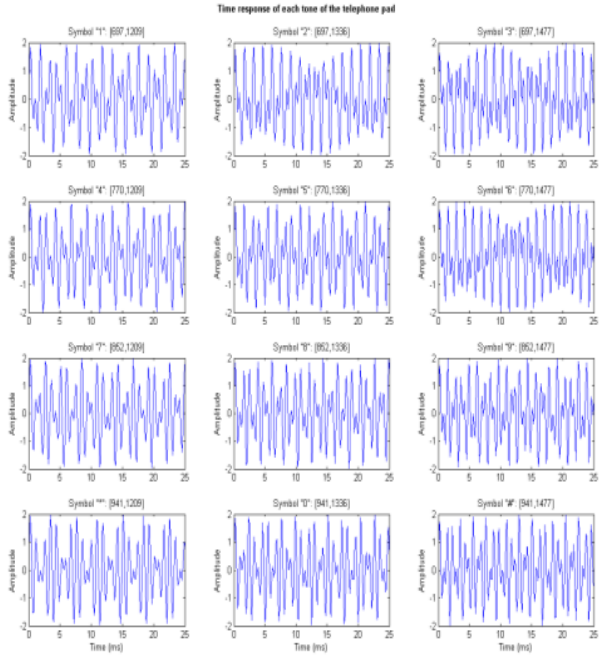

Fig.3. DTMF Frequencies pattern

Its decryptr uses digital enumeration techniques to sight and rewrite all sixteen DTMF tone Pairs into a 4-bit code. External half count is reduced by provision of associate degree On-chip differential input instrumentation, clock generator, and barred tri –state interface bus. smallest external parts needed embrace a low- price three.579545megacycle color burst crystal, a property resistance, and a property condenser. The M-8870-02 Provides associate degree influence -down probability that, once enabled, drops consumption to but zero.5Mw

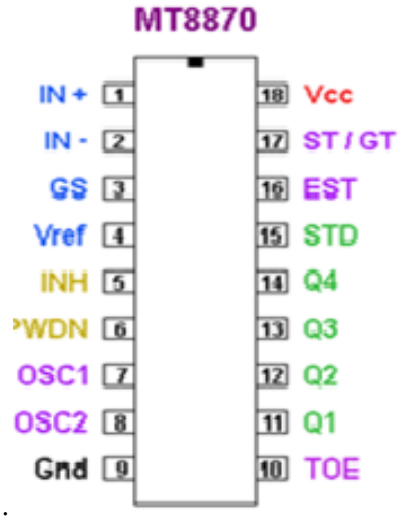

Fig.4. DTMF IC

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

Table DTMF Frequency

- **MP3 players**

Introducing the MP3 Player
The MP3 Player incorporates a transportable WMA/MP3 Player with USB two.0 Mass memory device.

Specifications: -
1. Interface
   a) USB
2. Ports
   a) USB Port
   b) Phone Out
3. Firmware
   a) Flash based mostly.
   b) User upgradeable.
4. Superb audio quality.
5. No cable needed.

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Fig.5. MP3 Player

•Relay Driver

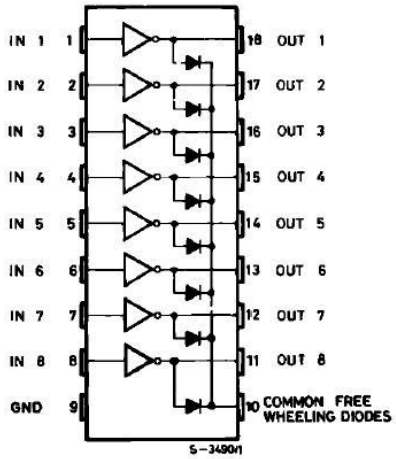

Fig.5. Relay pin configuration

The ULN2801A-ULN2805 Each holds 8 Darlington transistors per collective emitters and main dominance diodes for inductive hordes. each Darlington picks a peak load current rating of 600mA (500mA continuous) and may get on my feet to at least50V among the off state. Outputs maybe paralleled for higher current capability. five versions unit of mensuration offered to change interfacing to plain logic families: the ULN2801Ais designed for general applications with a current limit resistor; theULN2802Ahas a 10.5kW device and zener for 14-25VPMOS; theULN2803Ahas a try of.7kW device for 5V TTL and CMOS; the ULN2804A incorporates a 10.5kW device for 6-15V CMOS and thus the ULN2805A is supposed to sink a minimum of 350mA for ancient and Schott key TTL where higher output current is required.

•Temperature detector

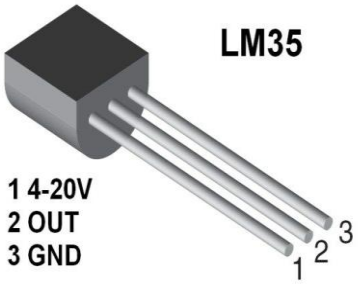

Fig.6. LM 35

The LM35 series square measure accuracy integrated-circuit temperature devices, whose productivity voltage is linearly relative to the uranologist (Centigrade) heat. The LM35 thus encompasses a and over linear temperature sensors label in ° Kelvin, as a result of the user is not required to cipher associate degree outsized constant voltage from its output to become appropriate Centigrade scrambling. The LM35 will not require any exterior activity or trimming to source distinctive precisions of ±1 to 4°C at warmness and ±3 to 4°C over a full −55 to +150°C temperature varies.

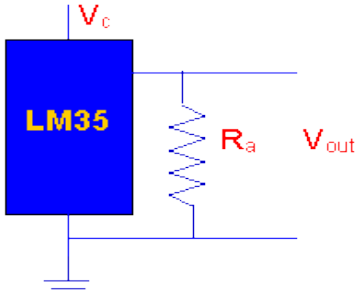

Fig.7. LM 35with load

• 16 x 2 Character LCD

FEATURES
- 5 x 8 dots with cursor
- Built-in controller (KS 0066 or Equivalent)
- + 5V supply power (Similarly for + 3V)
- 1/16 duty cycle
- B or L near be energetic by pin 1, pin 2 or pin 15, pin 16
- N.V. elective for + 3V supply power.

Microcontroller

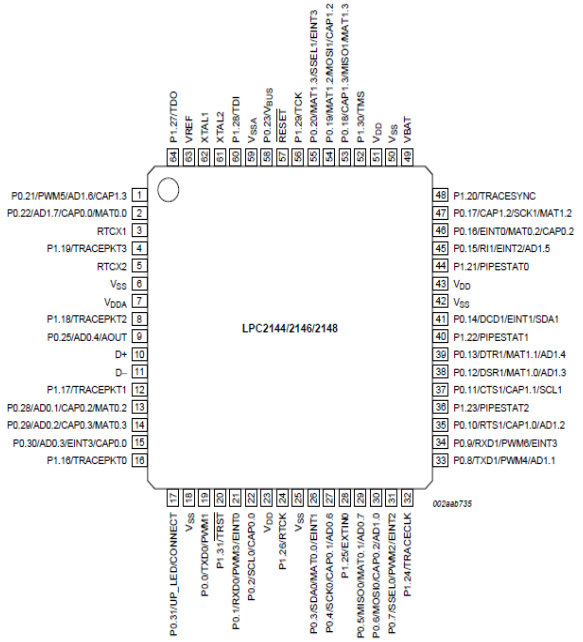

Fig.8. Microcontroller

The LPC2141/42/44/46/48 microcontrollers unit of activity supported a 16-bit/32-bit ARM7TDMI-SCPU with quantity of it slow emulation and embedded trace support, that mix the microcontroller with embedded high-speed

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hardware starting from thirty a pair of K to 512 K. A 128-bit wide memory interface and distinctive accelerator vogue modify 32-bit code execution at the foremost clock rate. For crucial encryption aspect claim, the choice 16-bit mode of Thumb reduces code by quite amount with tokenism performance penalty. attributable to their very little size and low power consumption, LPC2141/42/44/46/48 unit of activity ideal for applications wherever miniaturization would be a key demand, like access management and web site.

V. PACKAGE DESIGNING

EMBEDDED C
most common programming language for embedded system unit C, basic and programming language. C used for embedded system is slightly utterly completely different compared to C used for general purpose (under a laptop platform).Programs for embedded system is usually expected to look at and protocol external devices and directly manipulate and used the inner style of the processor like interrupt handling, timer, serial communication and completely different getable feature.

There unit many factors to admit once selecting language for embedded system

1. efficiency –Programs ought to be as short as potential and memory ought to be used with efficiency.
2. Speed-Program ought to run as fast as potential
3. simple implementation
4. Maintainability
5. Readability-C compiler for embedded system ought to supply ways that during which to seem at and utilize varied choices of the microcontroller internal and external architecture;

This includes;

a. Interrupt procedure
b. reading from and writing to internal and external memory C
c. Bit manipulation
d. Implementation of timer/counter
e. Examination of internal register- Most embedded collecting programs (as well as traditional compiling program)ar developed supporting the ANSI .

VI. ALGORITHM

1. START
2. Iniciat GSM and DTMF Translator.
3. mechanic build request.
4. If selection created then begin the comfy note and pointers.
5. If selection note shaped then head to step 3.
6. Enter the 2 digit countersign.
7. If countersign acknowledged then goes to next step otherwise head to step six.
8. Press the keys according to instruction for START OR STOP the device.
9. Turn ON or OFF the devices through relay driver.
10. One key of instruction is reserved for status of all connected devices.
11. If temperature of machine is on prime of the sting limit, GSM will send SMS to user.
12. STOP.Flow chart

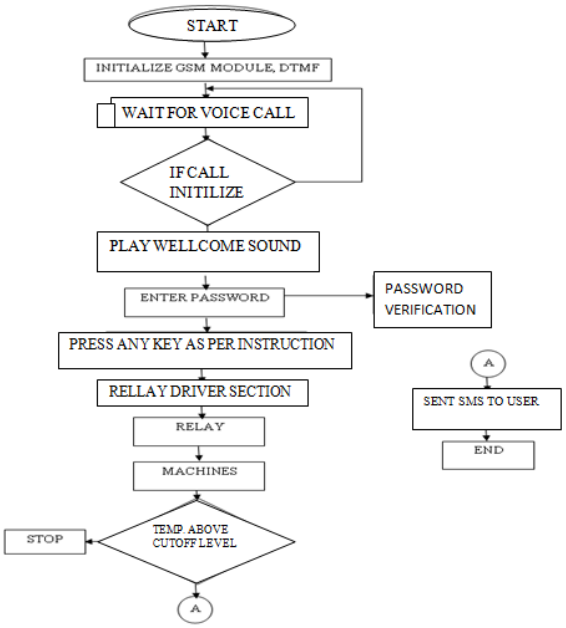

Fig.9. Flow chart

VII. APPLICATION

1. Any industrial application like cutter, power station machines.
2. in industrial appliances electricity management.
3. courageous gap in nuclear plant.

VIII. FUTURE SCOPE

Interface RTC to contour the important amount of it slow to on/off the instrumentality.

IX. RESULTS

Fig. 10. LCD Display

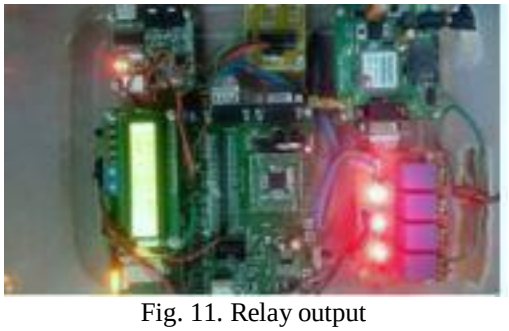

Fig. 11. Relay output

Sr. no.	Mobile key pressed	Operation
1	Key 1	Machine 1 is ON
2	Key 2	Machine 1 is OFF
3	Key 3	Machine 2 is ON
4	Key 4	Machine 2 is OFF
5	Key 5	Machine 3 is ON
6	Key 6	Machine 3 is OFF
7	Key 7	Machine 4 is ON
8	Key 8	Machine 4 is OFF
9	Key 9	All machines status SMS

A. Status

	Device1	Device2	Device 3	Device4
Status	X	X	X	X
ON/ OFF	Logic 1 for device is ON state. Logic 0 for device is OFF state.			

• If temperature is above 40^0 C, the SMS will be sent to operator.

X. CONCLUSION

In today's human race the entire factor should be complete from the calm of one's home or geographicpoint. For this application is geared up in such the approach that they'll be simply accessed from finish to finish computers? at intervals constant approach our system aim is to supply absolutely the data to the user at the tip of his fingers. for the rationale that of this performance the quality manual manner of treatment the user queries square measure planning to be handled in associate degree remarkably plenty of scientific and automatic manner. this sort of system performs operations constant as that of somebody's manipulator.

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