DIGITAL BRAILLE PAD ON MOBILE PHONE FOR VISIONLESS PERSONS

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Abstract : In our ordinary life telecommunication field performs a critical role. There is a complete revolution inside the manner we speak mainly lengthy distance communique. Irrespective of a lot of these development in the area of telecommunication, the physically impaired people have not that much quantity of access as compared to regular humans for these technologies. This mission is primarily based on inventing a messenger for the in another way disabled set of Humans, who won't be within the function of the usage of cell cellphone for messaging or any other styles of communicating gadgets, with the quality consolation, that is known as software. This gadget establish a manner communiqué route through the usage of a wi-fi era. Here the person sends the SMS to the blind man or woman's cell quantity that is linked to the microcontroller that is capable of read the SMS the use of GSM module via built in the AT commands after which converts the characters of the SMS into the Braille language the usage of the lookup table present in its reminiscence. With the assist of 6 relays Microcontroller vibrates the Braille pad which act as platform on which the blind individual can study the SMS.

IndexTerms **-Messengers, impaired, AT commands, GSM module**

I.INTRODUCTION

Mobile cellular phones are fundamental important a part of our cutting-edge existence. It is usually vital for us to make a name or send a message at each time from anywhere in global. For visually impaired users voice based listing of contact are furnished with many mobile telephones, they could pick touch thru voice and make name while necessary. Irrespective of all these advancement within the telecommunication era, the bodily (visually) impaired people have constrained get entry to for these technologies. So to fill up the space between the blind human beings and the technological advancement within the telecommunication subject we've got decided to layout a SMS device for them. We are designing a modular device which is obtainable by using blind character. For that cause we are the usage of Braille language because the spine of the assignment. So the blind human beings use the Braille language for analyzing and writing messages. Now let's limit our consciousness towards quick message machine, it's far text messaging service serves as issue of mobile smartphone, through using standardized communications. Protocols that permit the exchange of brief text messages among mobile phones. SMS text messaging is one of the most extensively used message application within the global, with 2.4 billion lively customers, or 74% of all cell smartphone subscribers. We are designing such sort of a modular device which may be available through blind person. Till date they conventionally use Braille books. But it is not an economical way of communicating now a day. It has predicament on the maximum variety of phrases according to web page and pages consistent with e book. So we are interfacing Braille pad with the mobile phone in order that visually impaired individual can have the access to the SMS device. Till date they conventionally use Braille books. But it is not a maximum efficient and low-priced manner of speaking. We also are imparting voice declaration system with it as more feature. Braille is known as after its writer, Frenchman Louis Braille, who misplaced his eyesight because of a formative years twist of fate.

II.PROPOSED SYSTEM

The proposed gadget layout implements microcontroller Atmega328p based totally Braille pad the usage of GSM Module and Solenoid transfer. Fig. 2 shows block diagram of proposed machine in which energy deliver is hooked up to present 5V deliver to microcontroller and 5V deliver to operate solenoid transfer. GSM module is hooked up to get hold of message. The blind character's cellular range that's linked to the microcontroller which reads the SMS the use of GSM module thru the AT commands and then converts the letters of the SMS into the Braille language using the lookup table in its memory. As per the acquired instructions the solenoid valve are toggled up and down. Thus the blind character can be capable of experience the letter. All ongoing technique is displayed on LCD (16x2) module.
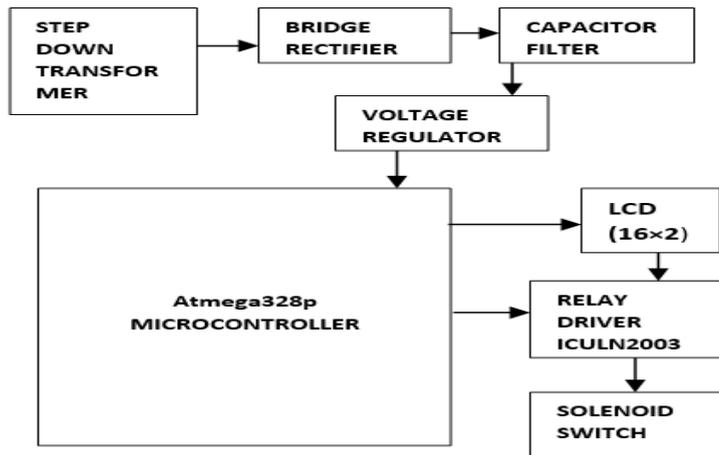
III.BLOCK DIAGRAM

Fig1: -Block Diagram of Proposed System

A. Microcontroller (Atmega328p)

- High performance, low power **8-**Bit Microcontroller
- Advanced RISC Architecture
- High Endurance Non-volatile Memory Segments
- Peripheral Features:

- Two 8-bit Timer/Counters with Separate Prescaler and Compare Mode
- One 16-bit Timer/Counter with Separate Prescaler, Compare Mode, and Capture
- Mode
- Real Time Counter with Separate Oscillator
- Six PWM Channels
- 8-channel 10-bit ADC in TQFP and QFN/MLF package
- Temperature Measurement
- 6-channel 10-bit ADC in PDIP Package
- Temperature Measurement
- Programmable Serial USART
- Master/Slave SPI Serial Interface
- Byte-oriented 2-wire Serial Interface (Philips I2C compatible)
- Programmable Watchdog Timer with Separate On-chip Oscillator
- On-chip Analog Comparator
- Interrupt and Wake-up on Pin Change

- Low Power Consumption at 1 MHz, 1.8V, 25°C for ATmega48P/88P/168P:

- Active Mode: 0.3 mA
- Power-down Mode: 0.1 μA
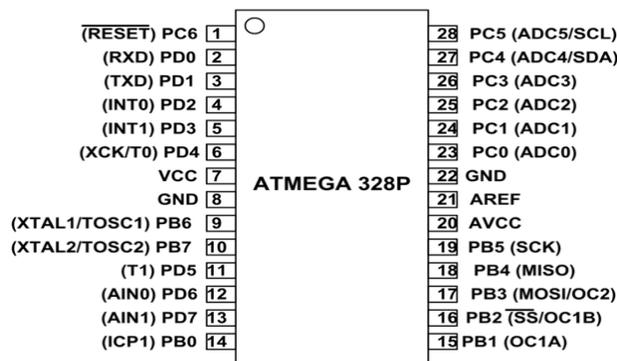- Power-save Mode: 0.8 μA (Including 32 kHz RTC)

Fig2: - Pin Configurations

B. Power Supply

To function Microcontroller 5V DC and 12V DC electricity supply is wanted respectively. The AC voltage is connected to Step down Transformer, which steps down AC voltage amplitude. To rectify signal a complete wave bridge this offers pulsating DC. Capacitor filter connected in parallel with the burden gives DC voltage which incorporates ripple in it. To get pure DC regulator IC is used.

C. GSM Module

The on-board GSM module is answerable for receiving the SMS containing the data which other humans need to communicate with visually disabled man or woman who's carrying the tool. GSM Modem-RS232 is built with Dual Band GSM engine-SIM800C works on frequencies 900MHz. The baud charge is configurable as 38400.The GSM module is controlled via AT instructions which can be sending thru USART the use of microcontroller. Table1. Shows AT instructions used to manipulate the operation of GSM modem.

TABLE 1
AT Command of GSM Modem

Command	Operation
AT	Initialize GSM
AT+CSMS	Select message service
AT+CMGF	Message format
AT+CMGR	Read message

D. Solenoid Valve

To manipulate the flow of drinks i.E. Ink solenoid valve is used. Solenoid valve is an electromagnetical controlled valve. Valve is an electric coil with movable ferromagnetic center in its centre. Electric present day creates a magnetic area which exerts a force on the core. The controlling of solenoid valve is carried out by microcontroller (Atmega328p) the use of relay and relay motive force circuit.

IV.CONCLUSION

In this manner this venture explains the idea of messaging machine for visually impaired peoples. This crucial technology tool and its application in the place of telecommunication have large and substantial. It permits environmental barriers to be eliminated for people with a huge variety of disabilities. Thus with some adjustments in previous conventional communicating tool, we will accommodate big no. Of visually impaired people in conversation system.

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