

INTELLIGENT AUTONOMOUS SIX LEGGED ROBOT TO OPERATE ON UNEVEN SURFACES

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ABSTRACT:

Legged robots are well suitable to stroll on troublesome landscapes at the use of requiring complex control frameworks to walk even on at surfaces. In any case, essentially strolling on a surface is not worth utilizing a legged robot. It ought to be accepted that strolling on unforeseen landscape is the commonplace circumstance for a legged robot. Considering this reason, we have built up a hearty controller for a six-legged robot that allows it to stroll over troublesome territories in an independent route, with a restricted utilization of tangible data (no vision is involved). This walk controller can be driven by an upper level which require not be worried about the points of interest of foot position or leg developments, taking care just of abnormal state angles, for example, worldwide rate and heading.

KEYWORDS:

Microcontroller, Rf Encoder, Rf Decoder, Rf Transmitter, Rf Receiver, Motor.

INTRODUCTION:

A Robot is a mechatronics gadget which likewise incorporates creativity or self-governance. A gadget with self-rule does its thing "all alone" without a human specifically directing it minute by-minute. A few writers would challenge that all mechatronic gadgets are robots, and this current



book's confinement on robot involves just concentrated programming .Robotics can be depicted as the present apex of specialized improvement. Apply autonomy is a streaming together science utilizing the proceeding with progressions of mechanical designing, material science, sensor creation, fabricating methods, and propelled calculations. The study and routine of apply autonomy will uncover an amateur or expert to several unique parkways of study. For a few, the sentimentalism of apply autonomy delivers a practically enchanted interest of the world prompting formation of astounding machines. A voyage of a lifetime anticipates in mechanical autonomy. Apply autonomy can be characterized as the science or investigation of the innovation essentially connected with the configuration, manufacture, hypothesis, and use of robots. While different fields contribute the science, the procedures, and the segments, apply autonomy makes the enchanted finished item. The handy uses of robots drive advancement of mechanical technology and drive-headways in different sciences thus. Crafters and analysts in mechanical autonomy concentrate more than just apply autonomy. An inserted framework is a mix of programming and equipment to perform a dedicated assignment. A percentage of the fundamental gadgets utilized as a part of installed items are Microprocessors and Microcontrollers. Microchips are ordinarily alluded to as broadly useful processors as they essentially acknowledge the

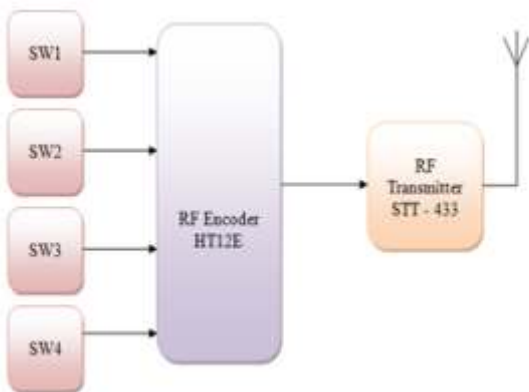
inputs, process it and give the yield. Conversely, a microcontroller acknowledges the information as inputs as well as controls it, interfaces the information with different gadgets, controls the information and consequently at long last gives the outcome. As everybody in this focused world wants to make the things simple and easy to handle, this undertaking sets a sample to some degree. This is a canny robot that can without much of a stretch proceed onward uneven surfaces too with the assistance of his six legs, and he can take its own particular choice if there should be an occurrence of any snag. This robot is entirely keen. At whatever point a hindrance is recognized, the robot alters his course and advances.

II. PROBLEM FORMULATION

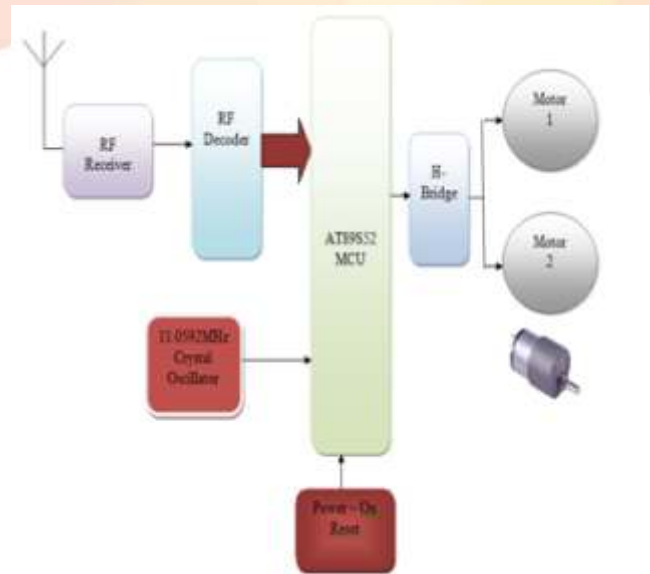
Most of the robots are not strolling on uneven surfaces

III. BLOCK DIAGRAM AND EXPLANATION

Transmitter



Receiver



Microcontroller

The AT89S52 is a low-power, superior CMOS 8-bit microcontroller with 8Kbytes of in-framework programmable Flash memory. The project memory can be reinvented with the on chip streak or by a preservationist static memory software engineer. The Atmel AT89S52 is an effective microcontroller which gives an exceptionally flexible and sparing answer for some inserted control framework applications

Switches and Pushbuttons:



A push button switch is used to either close or open an electrical circuit depending on the application. Push button switches are used in various applications such as industrial equipment control handles, outdoor controls, mobile communication terminals, and medical equipment, and etc. Push button switches generally include a push button

disposed within a housing. The push button may be depressed to cause movement of the push button relative to the housing for directly or indirectly changing the state of an electrical contact to open or close the contact. Also included in a pushbutton switch may be an actuator, driver, or plunger of some type that is situated within a switch housing having at least two contacts in communication with an electrical circuit within which the switch is incorporated.

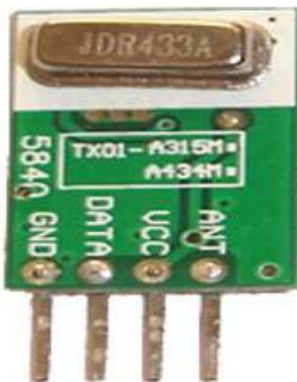
H-Bridge Driver:

The switching property of this H-Bridge can be replaced by a Transistor or a Relay or a MOSFET or even by an IC. Here we are replacing this with an IC named L293D as the driver whose description is as given below.

Features:

- 600ma output current capability
- Per channel
- 1.2a peak output current (non repetitive)
- Per channel
- Enable facility

RF TRANSMITTER STT-433MHz:



Features:

- 433.92 MHz Frequency
- Low Cost
- 1.5-12V operation
- Small size

I. RF RECEIVER STR-433 MHz:



Subterranean insect interface receiving wire info GND Connect Receiver Ground.

VCC (5V) VCC pins are electrically joined with give working voltage to the beneficiary. Information Digital information yield pin.

Encoder HT 12E

They are capable of programming 12 bit of data which comprises of 12-N message bits and N address bits. HT12E is arrangement of CMOS gang.

Decoder HT12D

Highlights

- Low power
- high solid safety CMOS innovation.
- Low supply current.
- Able to translating 18 bits of messages .
- Pairs with HOLTEK's 318 arrangement of encoders.
- Operating voltage: 2.4V~12V.

Precious stone Circuit

This precious stone circuit gives the required clock heartbeats to the microcontroller to give it the feeling of the reference time

Reset Circuit

This circuit gives the microcontroller the beginning heartbeat required to begin the operation from the begin. Unless this heartbeat is given, the microcontroller doesn't begin working

Control supply

The A.C. 230 info is given to rectifier circuit and Output acquire from the rectifier is a throbbing D.C voltage. The yield from the rectifier is given to a channel circuit to channel A.C segments present

consistent later than amendment. Presently, this voltage bolstered to voltage controller to unadulterated steady D.C voltage get.

II. SOFTWARE DESCRIPTION

This venture is executed utilizing taking after software's:

- 1.Express PCB – for outlining circuit
- 2.PIC C compiler - for assemblage part
- 3.Proteus 7 (Embedded C) – for reproduction part.

III. ADVANTAGES:

- 1) Highly delicate
- 2) No false discovery
- 3) Operates with CMOS info levels
- 4) Low cost and dependable circuit
- 5) Battery Operated

IV. APPLICATIONS:

- 1) Autonomous Robot Building
- 2) Artificial Intelligence
- 3) Night Vision Industrial Applications

V. RESULT



CONCLUSION

This task displays an Intelligent self-sufficient six legged robot to work on uneven surface and it is been outlined and executed with a comparator circuit and a transistor based H span Driver is utilized to drive the DC gear engines. Trial work has been done precisely. The outcome demonstrates that higher proficiency is without a doubt accomplished utilizing the implanted framework. The proposed technique is checked to be exceptionally useful for

the mechanical reason.

II. REFERENCES

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