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Original Research Article

TRACING OBJECTS USING HC05 BLUETOOTH AND GPS

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Abstract-
Bluetooth and GPS are the two technologies used widely for sharing of data and for making navigation system easier respectively. We can even use these technologies for tracking the misplaced or lost objects. Nowadays the threat of losing things has increased, so there is a need of having track of our things. This can be made possible without keeping an eye on our things by developing a system known as object location detector .This system consists of a transmitter which senses the distance between the person and the object. If the distance range exceeds the limit then the warning is being sent through receiver and person can get track of the lost object by turning on GPS.

Keywords: GPS, HC05Bluetooth,Atmega16, LCD

INTRODUCTION:

Communication is an important aspect between two entities for information flow to take place .We can exchange data & can even get a track of devices & sites. Communication systems can even be used for keeping track of objects using Microcontrollers, Bluetooth and GPS tracker.

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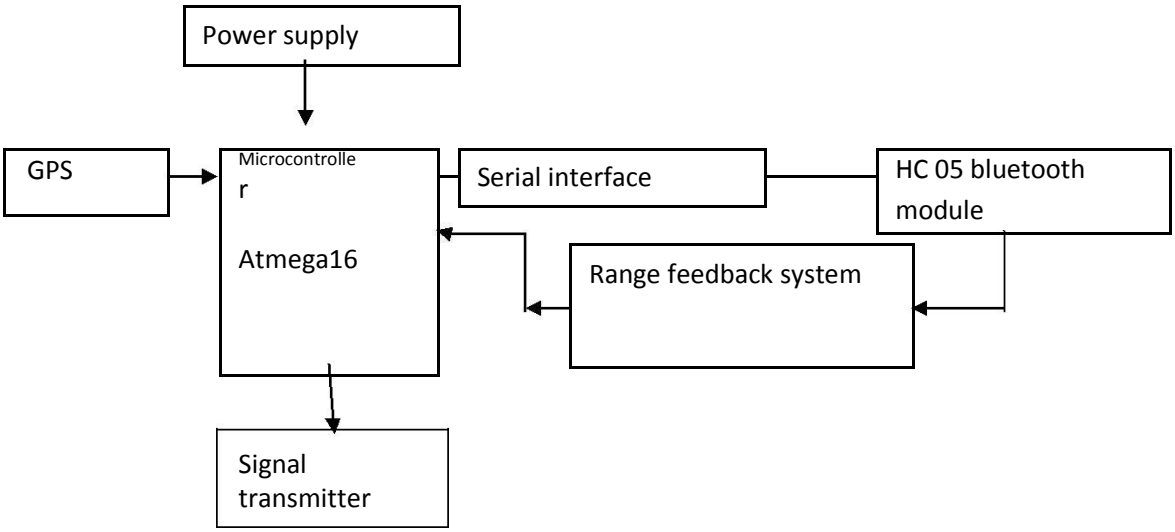
Microcontroller (ATMEGA16): It is a low power CMOS 8 bit microcontroller based on AVR enhanced RISC architecture. By executing powerful instruction in single clock rate it will enhance the designing system to optimize power consumption VS Processing speed.

GPS: GPS Modem is a device which receives signal from satellite & provides information about latitude, longitude, altitude, time etc.

Bluetooth: HC05 Bluetooth module is a class 2 Bluetooth module with serial port profile which can be configure as either master or

slave. By interfacing Atmega16 with GPS, Bluetooth and a range feedback system the transmitter will be attached to the object The installed GPS tracker notes down its location (LATTITUDE&LONGITUDE) from the GPGGA string & this information would be send to receivers

II.BLOCK DIAGRAM OF A TRANSMITTER



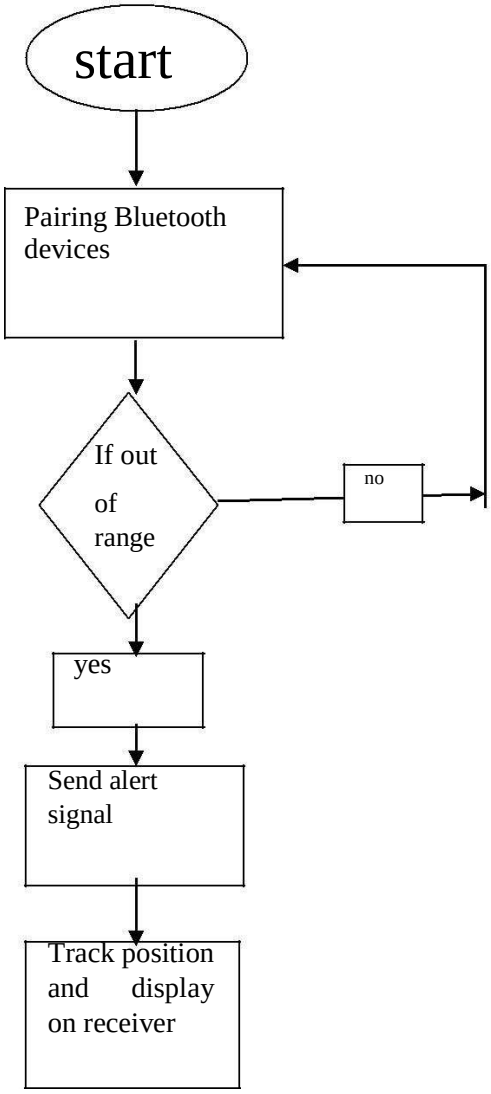
DESCRIPTION OF TRANSMITTER

The receiver consists of ATMEGA16 serially interfaced with GPS, BluetoothHC05 module, signal receiver and LCD.As soon as the transmitter goes out of the specified range signal receiver receives the alert signal from the transmitter and also the extracted GPS location will be displayed on LCD from the GPGGA string .Thus we can know the location of our misplaced object.This information (latitude and longitude) is displayed on LCD. The commonly available GPS modem gives output in serial (RS232) form. The output consists of a series of string. The output string contains information about latitude, longitude, time etc. and will be extracted using $ GPGGA string and then transmitted through transmitter.

FLOWCHART DESCRIPTION

1. Pairing of Bluetooth devices i.e. transmitter and receiver.The system requires 12V supply for operation.
2. If the two devices go out of range then;
3. Alert signal will be send to receiver from transmitter.
4. GPS turns on and tracks the position of device in the form of GPGGA.
5. The extracted information is displayed on receivers LCD else pairing continues.

VII. FLOW CHART



APPLICATIONS

1.We can have a track of our valuable objects without keeping an eye on them.
2.It can also be used as a spy gadget.

ADVANTAGES

1.Transmitter is small in size and so easy to attach with an object like purse, handbag…etc.
2.Cost efficient.
3.Receiver is simple and detection is easy
4.Transmitter is less complex.

CONCLUSION

With this object locator, there is no need for us to have a watch on our valuable objects. Attached transmitter will inform us as soon as we get far from it. Thus we conclude our paper by drewing the idea, after observing the need of it in congested and crowdy areas where there is a risk of losing objects.
While working on it we learnt about embedded system,communication system, HC05 bluetooth module, GPS.
It is indeed cost efficient, simple and easy detection method.

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