

antenna of 433M frequency band through coaxial cable; there is also an antenna solder eye ANT2 in the module, and it is convenient for user to weld spring antenna. User could select one of these antennas according to use requirements.

2. AVR Controller:

AVR is microcontroller families to use on-chip flash memory for program storage. The Atmel® pico Power® ATmega328/P is a low-power CMOS 8-bit microcontroller based on the AVR® enhanced RISC architecture. By executing powerful instructions in a single clock cycle, the ATmega328/P achieves throughputs close to 1MIPS per MHz. This empowers system designer to optimize the device for power consumption versus processing speed.

3. GPS Module:

It works something like this: If we know our exact distance from a satellite in space, we know we are somewhere on the surface of an imaginary sphere with radius equal to the distance to the satellite radius. If we know our exact distance from two satellites, we know that we are located somewhere on the line where the two spheres intersect. And, if we take a third measurement, there are only two possible points where we could be located. By taking the measurement from the fourth satellite we can exactly point out our location. The Global Positioning System satellites transmit signals to equipment on the ground. Each GPS satellite transmits data that indicates its location and the current time.



4. Arduino UNO R3:

Arduino microcontrollers are pre-programmed with a boot loader that simplifies uploading of programs to the on-chip flash memory. The default bootloader of the Arduino UNO is the optiboot bootloader. Boards are loaded with program code via a serial connection to another computer. Some serial Arduino boards contain a level shifter circuit to convert between RS-232 logic levels and transistor-transistor logic (TTL) level signals. Current Arduino boards are programmed via Universal Serial Bus (USB), implemented using USB-to-serial adapter chips such as the FTDI FT232. Some boards, such as later-model Uno boards, substitute the FTDI chip with a separate AVR chip containing USB-to-serial firmware, which is reprogrammable via its own ICSP header. Other variants, such as the Arduino Mini and the unofficial Boarduino, use a detachable USB-to-serial adapter board or cable, Bluetooth or other methods, when used with traditional microcontroller tools instead of the Arduino IDE, standard AVR in-system programming (ISP) programming is used.

B. Software Used:

1. Embedded C:

The embedded system designers must know about the hardware architecture to write programs. These programs play prominent role in monitoring and controlling external devices. They also directly operate and use the internal architecture of the microcontroller, such as interrupt handling, timers, serial communication and other available features. The basic additional features of the embedded software

2. Arduino:

Arduino board designs use a variety of microprocessors and controllers. The boards are equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The boards feature serial communications interfaces, including Universal Serial Bus (USB) on some models, which are also used for loading programs from personal computers. The microcontrollers are typically programmed using a dialect of features from the programming languages C and C++. In addition to using traditional compiler tool chains, the Arduino project provides an integrated development environment (IDE) based on the Processing language project.

3. Visual Basic 6.0:

Visual Basic is a tool that allows you to develop Windows (Graphic User Interface - GUI) applications. The applications have a familiar appearance to the user. Visual Basic is event-driven, meaning code remains idle until called upon to respond to some event (button pressing, menu selection). Visual Basic is governed by an event processor. Nothing happens until an event is detected. Once an event is detected, the code corresponding to that event (event procedure) is executed. Program control is then returned to the event processor.

V. CONCLUSIONS

It need to have some realistic expectations when using this module. It work well when the receiver and transmitter are close to each other. If you separate them too far you'll lose the communication. The communication range will vary. It depends on how much voltage that you're supplying to your transmitter module, RF noise in your environment and if you're using an external antenna. By considering this signal, we can conclude that by using real time tracking with GRS assistance we can locate accurate position of device in nearby area.

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