Under Water Wireless Control Using Zigbee For Transmissions Systems

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ABSTRACT
The aim of this project is to develop under water communication system using the zigbee protocol stack. A robot can be defined as a programmable, self-controlled device consisting of electronic, electrical, or mechanical units. An industrial robot is officially defined by as an automatically controlled, reprogrammable, multipurpose, manipulator, programmable in three or more axes. Robots are especially desirable for certain work functions because, unlike humans, they never get tired. They can endure physical conditions that are uncomfortable or even dangerous; they can operate in airless conditions.

I. INTRODUCTION
The aim of this project is to develop under water communication system using the zigbee protocol stack. This is very useful to find out any problem in caves and mines. An embedded system is a special-purpose system in which the compute is completely encapsulated by or dedicated to the device or system it controls. Personal digital assistants (PDAs) or handheld computers are generally considered embedded devices because of the nature of their hardware design, even though they are more expandable in software terms. This line of definition continues to blur as devices expand.

Examples of embedded systems
- Automatic teller machines (ATMs)
- Avionics, such as inertial guidance systems, flight control hardware/software.
- Cellular telephones and telephone switches
- Engine controllers and antilock brake controllers for automobiles
- Home automation products, such as air conditioners security monitoring systems

II. HEADINGS

2.1 History of embedded systems
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2.4 Technical description
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2.6 Types of power supply
2.7 Rectifier
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III. INDENTATIONS AND EQUATIONS

3.1 History of embedded systems
In the earliest years of computers in the 1940s, computers were sometimes dedicated to a single task, but were too large to be considered "embedded". The first recognizably modern embedded system was the Apollo Guidance Computer, developed by Charles Stark Draper at the MIT Instrumentation Laboratory. Since these early applications in the 1960s, embedded systems have come down in price. In 1978 National Engineering Manufacturers Association released the standard for a programmable microcontroller. By the mid-1980s, many of the previously external system components had been integrated into the same chip as the processor. By the end of the 80s, embedded systems were the norm rather than the exception for almost all electronics devices, a trend which has continued since.

3.2 Peripherals
Embedded Systems talk with the outside world via peripherals, such as:
- Serial Communication Interfaces (SCI): RS-232, RS-422, RS-485 etc
- Synchronous Serial Communication Interface: I2C, JTAG, SPI, SSC and ESSI
- Universal Serial Bus (USB) ppp
- Networks: Controller Area Network, Lon Works, etc
- Timers: PLL(s), Capture/Compare and Time Processing Units
- Discrete IO: aka General Purpose Input Output (GPIO)
3.3 Rectifiers
- There are several ways of connecting diodes to make a rectifier to convert AC to DC. The bridge rectifier is the most important and it produces full-wave varying DC. A single diode can be used as a rectifier but it only uses the positive (+) parts of the AC wave to produce half-wave varying DC.

1.4 Bridge rectifier
- A bridge rectifier can be made using four individual diodes, but it is also available in special packages containing the four diodes required. It is called a full-wave rectifier because it uses the entire AC wave.

1.5 Technical Description
Numbers of axes – two axes are required to reach any point in a plane; three axes are required to reach any point in space. To fully control the orientation of the end of the arm three more axes are required.

Kinematics – the actual arrangement of rigid members and joints in the robot, which determines the robot's possible motions.

Speed – how fast the robot can position the end of its arm. This may be defined in terms of the angular or linear speed of each axis or as a compound speed.

Motion control – for some applications, such as simple pick-and-place assembly, the robot need merely repeatable to a limited number of pre-taught positions. For more sophisticated applications, such as arc welding, motion must be continuously controlled to follow a path in space, with controlled orientation and velocity.

Accuracy – how closely a robot can reach a commanded position. Accuracy can vary with speed and position within the working envelope and with payload (see compliance). It can be improved by Robot calibration.

Power source – some robots use electric motors, others use hydraulic actuators. The former are faster, the latter are stronger and advantageous in applications such as spray painting, where a spark could set off an explosion.
IV. FIGURES AND TABLES

Fig 1: Receiver

Fig 2: Transmitter

V. CONCLUSION

The project “Under Water Wireless Control Using Zigbee For Transmissions Systems ” has been successfully designed and tested. Integrating features of all the hardware components used have developed it. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit. Secondly, using highly advanced IC’s and with the help of growing technology the project has been successfully implemented.

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