
WIRELESS DATA TRANSMISSION USING X-BEE/ZIG-BEE

ABSTRACT

The project is aimed to design a security system which can transmit the data between two microcontrollers located at two remote places by using wireless ZIG-BEE communication technology. The major advantage of this project is providing the security for data, so that the chances of hacking can be reduced.

ZigBee modules are designed with low to medium transmit power and for high reliability wireless networks. The modules require minimal power and provide reliable delivery of data between devices. The interfaces provided with the module help to directly fit into many industrial applications. The modules operate within the ISM 2.4-2.4835 GHz frequency band with IEEE 802.15.4 baseband. Transmit Power of zigbee module is up to 1 watt / 30 dBm nominal. Zigbee module Receiver Sensitivity is up to 107 dBm.

The ZigBee modules interface to a host device through a logic-level asynchronous serial port. Through its serial port, the module can communicate with any logic and voltage compatible UART or through a level translator to any serial device (For example: RS-232 or USB interface board). These ZigBee modules are in the form of ZigBee or x bee or Tharang.

The project is designed in such a way that one ZIGBEE transceiver will be interfaced to the PC through serial communication, so that we can input the data to the controller using the hyper terminal of PC. Here we will use a serial line driver IC MAX232 to interface the PC with controller. The ZIGBEE transceiver is used to encode the data received by the controller and to transmit the data. Hence the encoded data will be transmitted by the ZIGBEE transceiver over the wireless medium and the data will be received by another ZIGBEE transceiver which will be interfaced to the PC through serial communication on the receiver side. Now it is the responsibility of the controller to transfer the received data to the PC on the receiver side. Hence wireless data transfer between two microcontrollers can be achieved. By using this project two PCs will communicate each other in both directions.

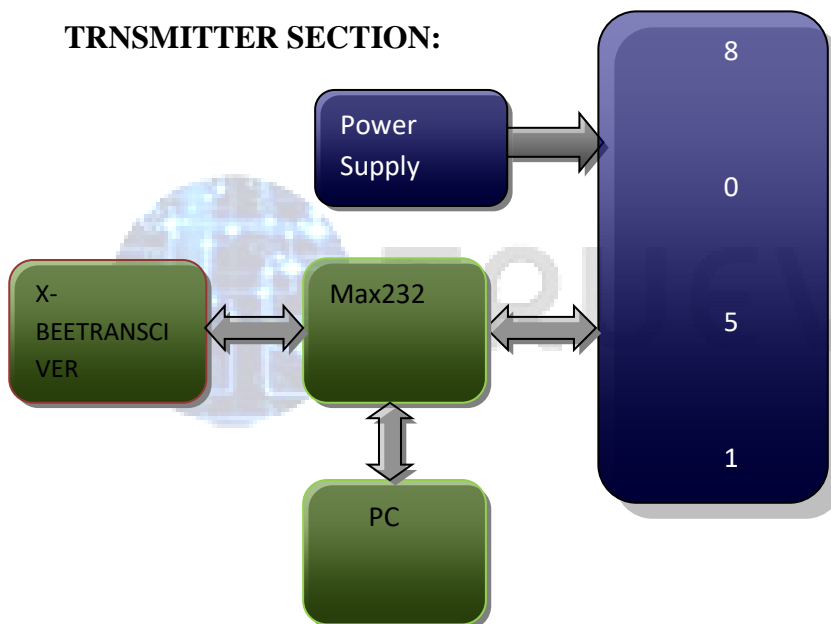
This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

APPLICATIONS:

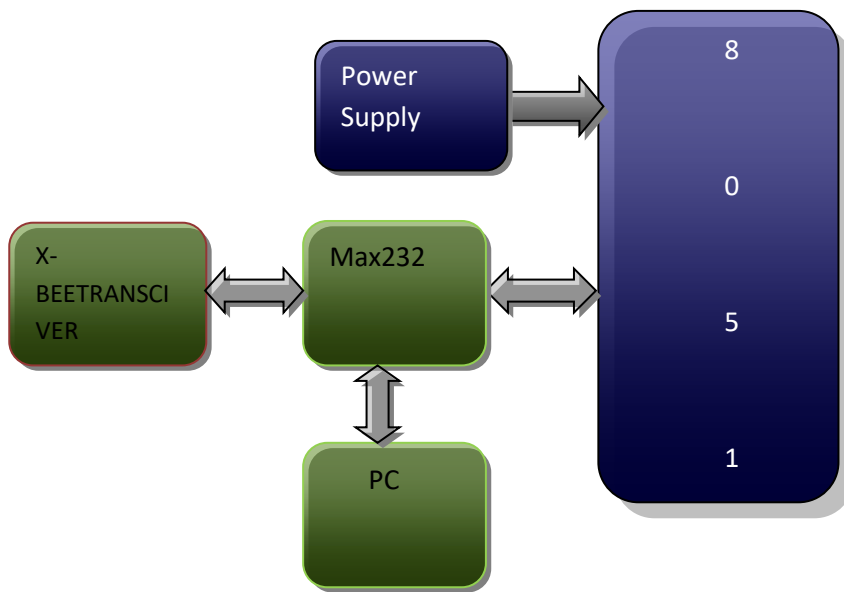
- Industrial applications
- Control systems

BLOCK DIAGRAM:

TRANSMITTER SECTION:



RECEIVER SECTION:



POWER SUPPLY BLOCK DIAGRAM:

