
WIRELESS DATA ENCRYPTION AND DECRYPTION FOR SECURITY IN ARMY APPLICATIONS

ABSTRACT

Everyone in this world wants to be safe and secure. Even a small kid tries to protect his toys in a safe place. The situation becomes more complicated when it comes to Multinational companies, Military, Army.

One of the popular methods to protect the data in a more secure way is to encrypt the data while sending and when received, decrypt the data to retrieve the original message. Before transmitting the data, the data will be converted into an unreadable form and will be sent. At the receiving end, the reverse of encryption carries on to get back the original message. Thus the data will be protected in every way by following the encryption and decryption standard formats. Wireless makes this project more flexible. Standard algorithms require software to be installed into the system before actually using them and hardwired connections. The hardware connections and cabling can be completely eliminated in this project.

ZIGBEE is a specification for a suite of high level communication protocols using small, low-power digital radios based on the IEEE 802.15.4-2003 standard for Low-Rate Wireless Personal Area Networks (LR-WPANs). ZIGBEE is targeted at radio-frequency (RF) applications that require a low data rate, long battery life, and secure networking. ZIGBEE protocols are intended for use in embedded applications requiring low data rates and low power consumption. ZIGBEEs current focus is to define a general-purpose, inexpensive, self-organizing mesh network that can be used for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation, home automation, etc. The resulting network will use very small amounts of power.

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.

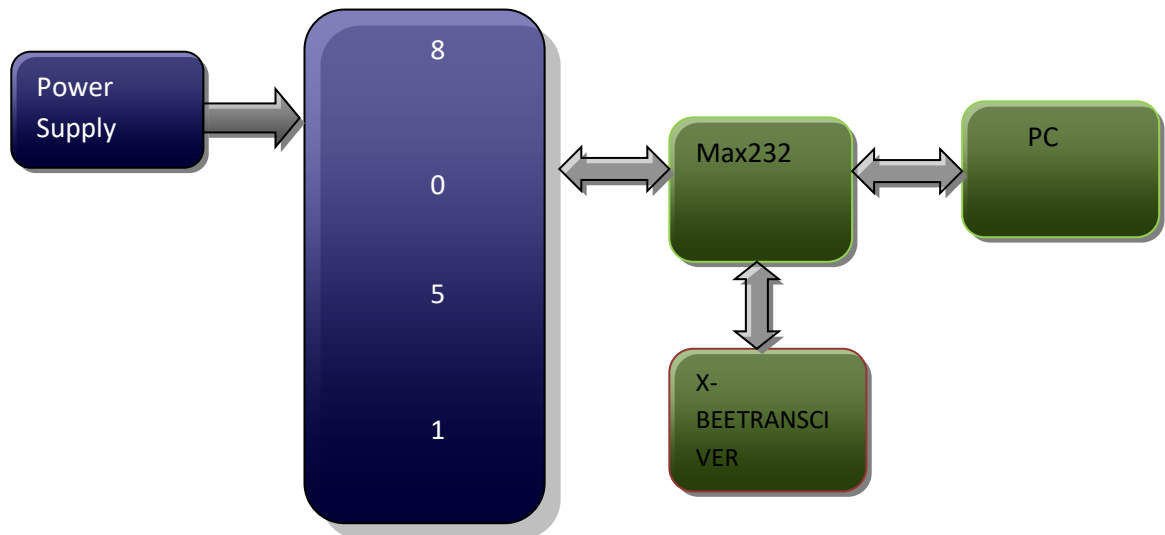
This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

APPLICATIONS:

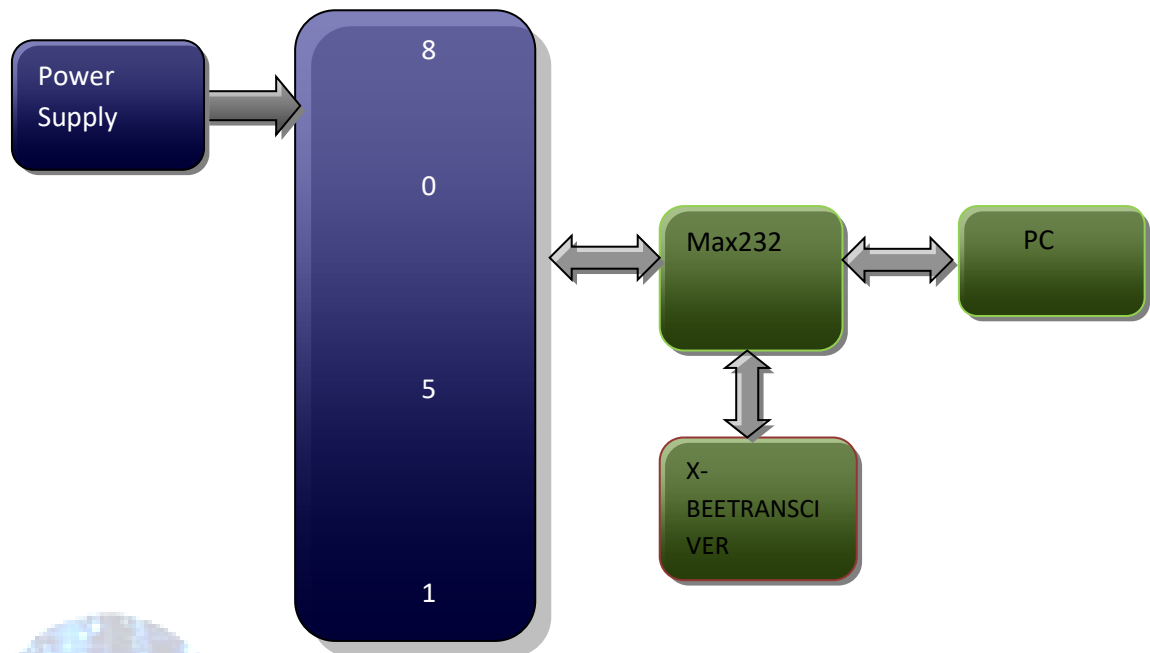
- Industrial applications
- Control systems

BLOCK DIAGRAM:

TRANSMITTER SECTION:



RECEIVER SECTION:



POWER SUPPLY BLOCK DIAGRAM:

