

# An Implementation to sending Word and Text files without internet

**Pooja Sharma, Dapinder Singh Virk**

Computer Science & Engineering, Rayat Bahra group of Institutes, Punjab, India

Computer Science & Engineering, Rayat Bahra group of Institutes, Punjab, India

## Abstract

Now a day's all the work is computerized. Internet is used to send any text file from one place to another place. At some time we want to send the important data but because of some internet problem we cannot send the data. This problem can be solved by using ZigBee as a data communication medium. This paper proposed a review on data communication using Zigbee. This paper presents the data communication technique in which the text files are sending from one place to another place without internet. By using Zigbee we can send the text files from one place to another place. Zigbee is WPAN (Wireless Personal Area Network) technology. It is an IEEE 802.15.4 standard for data communications. ZigBee is a low data rate wireless network standard with added features like low-cost, low power consumption and fast reaction.

**Keywords:** Zigbee, WPAN, IEEE 802.15.4

## 1. Introduction

Zigbee is wireless pan technologies .It provide digital radio connections between computers and related devices. ZigBee provides specifications for devices that have low data rates, consume very low power. The ZigBee Alliance, is the group of companies which defines ZigBee. The lists of applications are:

- Home Automation
- ZigBee Smart Energy
- Telecommunication Applications
- Personal Home

The relationship between IEEE 802.15.4 and ZigBee is similar to that between IEEE 802.11 and the Wi-Fi Alliance. The ZigBee Alliance has been set up as “an association of companies working together to enable reliable, cost-effective, low-power, wirelessly networked, monitoring and control products based on an open global standard”.

IEEE 802.15.4/ ZigBee Architecture: Zigbee define two layer of OSI (Open system interconnection) model: the Application Layer and the Network Layer. Each layer performs a specific set of services for the upper layer. The different layers communicate through Service Access Points (SAP's). The ZigBee Network Layer (NWL) is responsible for Network management procedures (e.g. nodes joining and leaving the network), security and routing.

Zigbee Devices: ZigBee defines 3 types of devices:

- **Zigbee Coordinator:** It is the most capable device in the network. ZC is the root of the tree network. It is able to store information about the network and also acting as the Trust Centre & repository for security keys. In a star topology, the network is controlled by one single device called ZigBee coordinator. The ZigBee coordinator is responsible for initiating and maintaining the devices on the network.
- **Zigbee Router:** A router is used in tree and mesh topologies to expand network coverage. The function of a router is to find the best route to the destination over which to transfer a message. A router performs all functions similar to a coordinator except the establishing of a network.
- **Zigbee End device:** ZEDs are only communicated with their parent nodes (either the Coordinator or a Router). It cannot relay data from other devices. An End Device can sleep in order to save power.

### ZigBee Topologies:

The ZigBee standard allows the formation of three types of network topology: star, tree, and mesh.

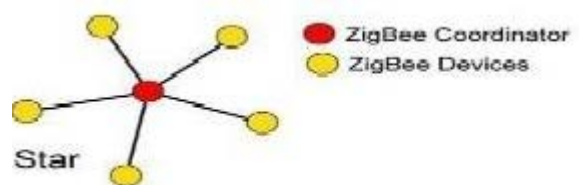


Fig 1: Star topology

**Star topology:** The star topology is consisting of only a single coordinator with a number of end-devices. The terminal (Zigbee End Devices) nodes cannot directly communicate with each other. They are communicating with each other through the Zigbee coordinator.

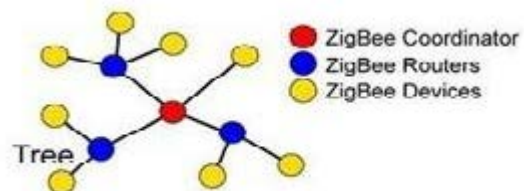


Fig 2: Tree topology

**Tree topology:** The devices are organized in the form of tree structure. The coordinator is representing the root of the tree, routers representing the roots of sub-trees, and end-devices representing leaves.

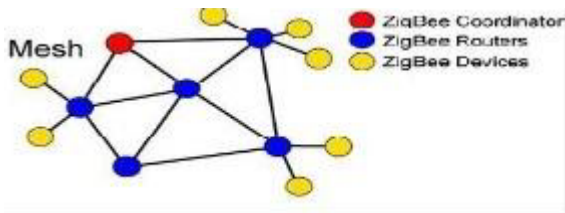


Fig. 3:Mesh topology

**Mesh topology:** In mesh topology the Zigbee routers and Zigbee end devices are children of Zigbee coordinators. The Zigbee coordinators and Zigbee routers have multiple links in mesh topology.

## 2. Problem statement

1. Always internet required to send file from one place to another place.
2. When the internet is not working some alternatives are requires to solve the problem.
3. An alternative require which provide free communication link (PAN) within small geographical area.

## 3. Objectives of Proposed Work

In this work the research is carried out keeping in the view the following objectives:

1. To offer free communication service and data sharing within organization.
2. To share the textual data in the absence or malfunctioning of internet.
3. To transmit the data at large distance.

## 4. Proposed Work

This system is designed to send textual data from text file without using internet from one place to another place. In this system three software are created one for Head Office and to other for CSE and ECE department. The head office send the data to the both departments at same time or at the different time using check boxes.CSE and ECE department can also send the data to the head office one by one or to both together. Basically there are three different computer software for the proposed work.That are:

- Head Office
- E.C.E
- C.S.E

**Head Office:** In this software first is login form and second one is main form.

**Login Form:** In this form, a user has to enter his user name and password to login window of computer software to pass his authenticity.



Fig 4: Login window

**Main form:** In this form there is one Open Word File and Open Text File which are used to open word and text file respectively. Send File Button is used to send the file. Save Word File and Save Text File button are used for send word file and send text file respectively.The head office send the data to both the department .

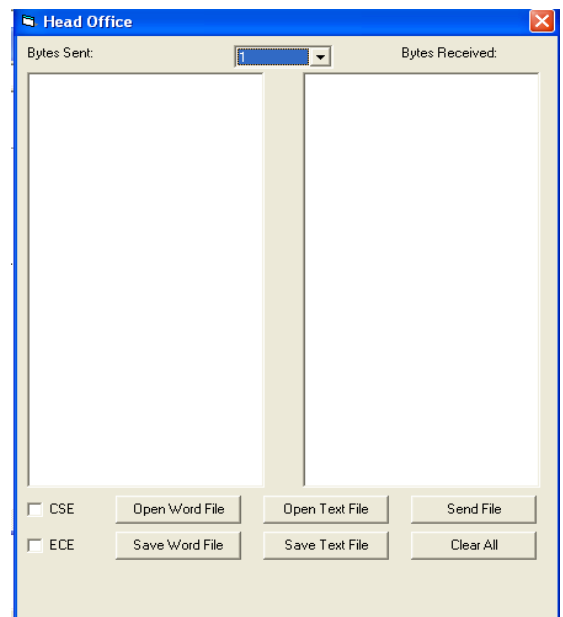


Fig. 5:Main Form

**ECE Department:** In this also first form is login form and second is main form like head office department. The work of login form is same as head office, but the main form work in different way. This is used to send the data only head office department. It cannot send the data to the CSE department.

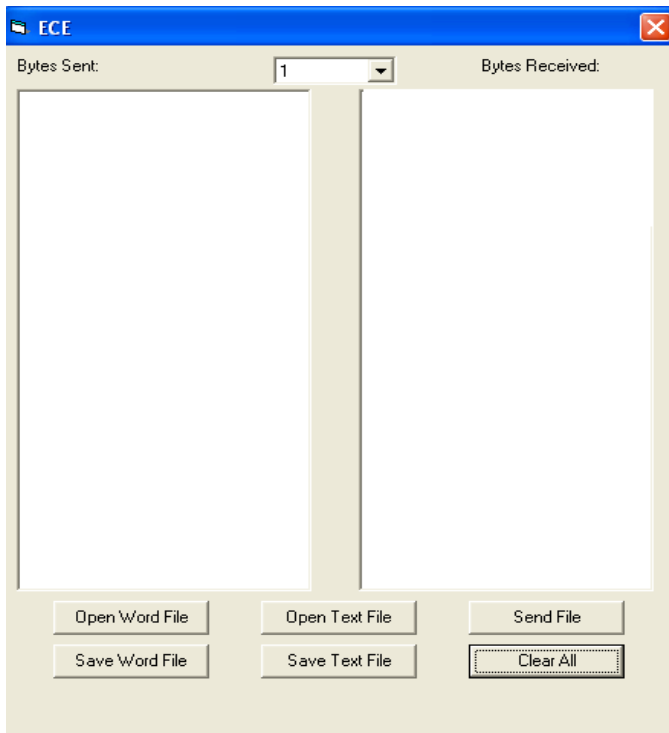


Fig 6: ECE Department

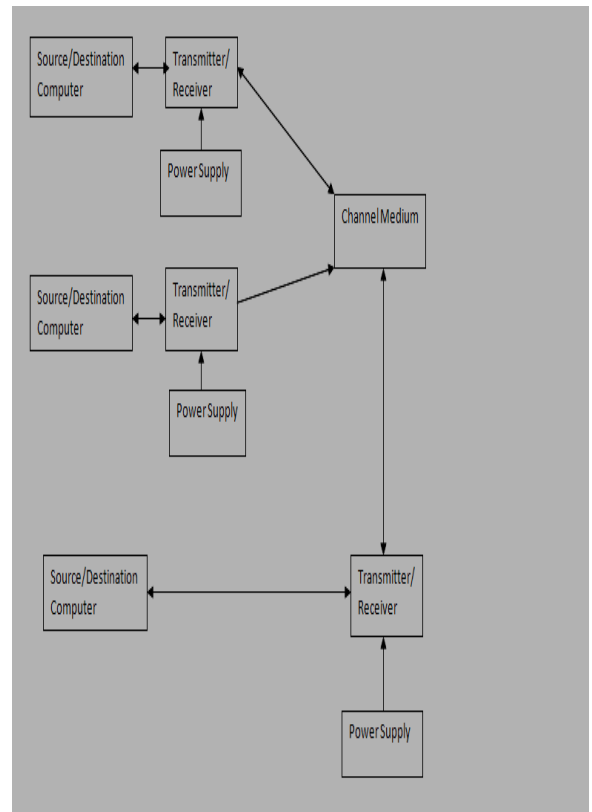


Fig 8: Functional Structure

**CSE Department :** In this also first form is login form and second is main form like head office department. The work of login form is same as head office, but the main form work in different way. This is used to send the data only head office department. It cannot send the data to the ECE department.

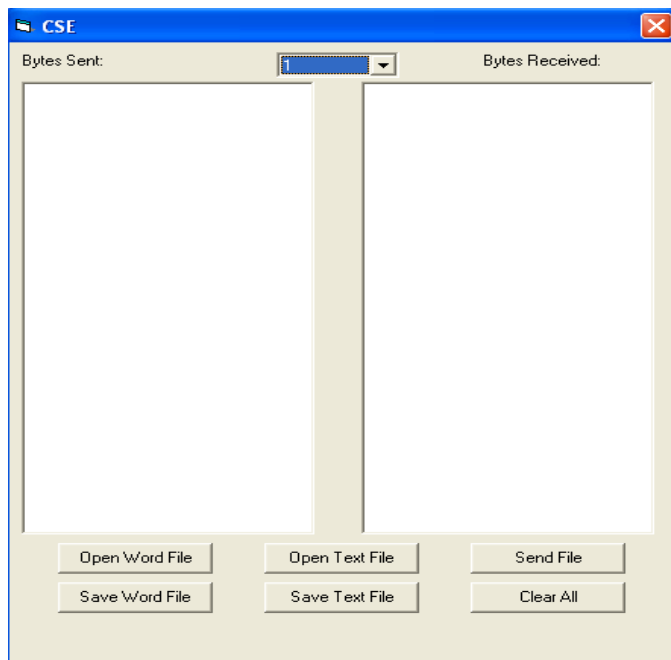


Fig 7:CSE Department

## 5. Functional Structure of System

## 6. Results and Discussions

- A. Zigbee based Email and SMS communication: It is a unique project in which wireless messages are transferred from independent terminals to the net terminals using ZigBee & from there directly to the E-mail system automatically, but in proposed system all the terminals are independent terminal. The textual data is transferred from independent terminals to independent terminals using ZigBee.
- B. SMS application: In SMS application .txt, .pdf, .doc etc types of files are sending in Compressed form via SMS could be boon for the world because one could send files even when there is shortage of internet balance, Government could send their guidelines over paid SMS to their employees, doctors could send guidelines to the catastrophic area, remote areas like villages etc.,but the proposed system offer free communication service and data sharing within organization. There is no need any paid SMS service.

## 7. Objectives Achieved

- 1) Offer free communication service and data sharing within organization.
- 2) Share the textual data in the absence or malfunctioning of internet.
- 3) Transmit the data at large distance.

## 8. Conclusion and future scope

This is the unique project in which the textual data is send from one terminal to another terminal using Zigbee. It consumes less power, long battery life and can support many users (255) at a time. ZigBee has an inbuilt micro controller which can be programmed to do many other applications like automation, sensor etc.

This System efficiently sends 740 bytes (2 or 3 KB File) at one time .But when the bytes are increased then some bytes are lose. So, It can be improved in future work. This system sends only textual data. So, In future one can also send the ppt and images

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