

# IMPLEMENTATION PAPER ON DATA TRANSMISSION AND RECEPTION USING RASPBERRY PI

Pushpak Dhangar, Sonam Kanade, Aishwarya kute, Kavita Labhade  
Department of Electronic and Telecommunication, SITRC Nashik

## ABSTRACT

Nowadays portability is most important aspect in our life. In order to achieve this, we have designed such a system which we can carry anywhere. With the help of this system we can not only transfer the data but also we can see the transfer process of a particular file which we would like to transfer by using TFT display. Now a days to transfer data between two pendrive's we use PC or laptop, but it is not always possible to carry such a large device everywhere only for the data transfer. So we design a system which is more compact to overcome this problem. In our project transfer of data between two pendrive's by using tiny computers i.e. Raspberry pi. We insert two pen drives into the USB port of Raspberry Pi, The processor indicates that the pen drive is inserted successfully the operation cannot start till the user can not send any command to processor, As soon as the command is send to processer, the processer will start fetching the data from source pen drive into buffer and the ARM processor wait for the signal from destination pen drive. Whole operation is performed by using a "Raspbian wheezy" operating system on the Raspberry Pi board.

## I. INTRODUCTION

Usually, we transfer data between two pen drives by using desktops or laptops. Practically it is not always possible to carry such a large devices to the required location. In order to overcome this problem, we are designing a hardware which is more handy, portable to carry anywhere. With the application of this project we can not only transfer the data but also we can see the transfer of the particular file which we want to send by using TFT display. The os tells the Raspberry Pi its functioning, how to handle any input from the user and how to manage when they are running. It has 4 USB ports. To plug in keyboard, mouse, external hub etc USB 2.0 is used. The USB is used for the one interface for many devices, automatic configuration, easy to connect. The micro USB is used to power the Raspberry pi device. The HDMI port is used to plug into modern TV and monitor. In this way we can transfer the data easily for transmission and reception.

## II. LITERATURE SURVEY

**1. Singh Harpreet states that** In order to transfer the data to a personal computer or laptop is difficult if we do not have any of them. It is always easy to afford a USB data drive than purchasing a laptop or PC. Therefore this affordable device which is battery operated can transfer the data between two USB data drives without taking help of laptop. The advantage of using this device is that as it is battery operated so there is no need of external power supply connection and data transfer can take place at any place. The popularity of the Universal Serial Bus storage device is very vast in the modern era. The disadvantage of using USB is that being a peripheral device, it needs a host usually a PC to initiate and mediate communications between two USB storage devices. With help of this project it has become possible that two USB can communicate directly without laptops. USB devices directly connected to embedded system. Flash devices are hosted by controller. Just Insert pen drive into USB port, then an signal will sent to the processor indicating that source pen drive is inserted so now processor will wait for the signal from other USB device. When the controller gets the signal from other USB drive then controller is ready to transfer the data between two. External hard key from the user gives input to the Controller. Once the user presses the hard key, controller gets the information to transfer the data between two drives. The user interface consists of keypad 20x2 LCD display. User can see the data of both the flash drive and can send in either direction from first flash drive to other or from second to first.

**2. Sonal N.Kawale states that** transfer of data between pen drive to pen drive without using a c laptop or computer is discussed. It consumes more power when data transfer -is done by using a computer or laptop and it is not a handy device to carry to particular locations. In order to overcome this, data transfer is done by using an ARM processor. A pen drive is inserted into the USB hub then a signal will be sent to the ARM processor. By using this signal processor identifies the host pen drive is detected. Now ARM processor starts fetching the data from the source pen drive into the buffer and the ARM

processor waits for the signal from the destination pen drive. When the ARM processor gets the signal from the other pen drive, the ARM processor is ready for transferring the data. Before transfer of data the ARM processor should get the input from an external touch panel from the user. Once the user presses the button from TFT display unit, the arm processor gets the information to transfer the data between two pen drives.

**3. Omprakash Gawali states that** Transferring the data through USB in today's scenario is a very simple task. As concerned the problem is that to transfer the data to a personal computer or laptop is not easy if u don't have any of them. It is affordable to purchase a USB data drive than purchasing a laptop. Therefore we came up with a handheld battery operated affordable device which can be used to transfer the data between two USB data drives without the help of PC or laptop. The main advantage of using this device is that it is battery operated so there is no need of power supply & data transfer can take place everywhere.

The system thus enables sharing of data between mobile and pen drive directly without using computer or laptop. An arm processor is interfaced by USB and USB host controller. Latest mobile phones have got memory capacities upto GB's and can be connected to computers. These mobile phones have capability to get connected to the internet. Additional features like camera, mp3, multimedia A/V, etc are provided by Mobile phones. Mobiles handle a large amount of data. The system enables data sharing between mobile, pen drive, digital camera and the device having USB interface. This eliminates the need of an intermediate computer and thus save time and power.

### III. METHOD /IMPLEMENTATION

Transfer of data through USB in today's scenario is the very easy task. But the problem is that to transfer the data to a personal computer or laptop is not easy if u don't have any of them.

So to overcome this problem we implement device using raspberry pi .It overcame all the disadvantages of other papers.

### BLOCK DIAGRAM

The block diagram gives a general idea for designing our project. For designing purpose the over view of our project is given in the block diagram. The 2.0 USB connector are connected to the module. This USB port

are used for connecting other device such as mouse, and external hubs. As there are two USB port in Raspberry pi and it has the central host controller. The host controller manages attachment and removal of USB devices Manage data flow between host and devices Provide and manage power to attached devices Monitor activity on the bus. For communication it's more important to connect the two pen drives into the USB ports of controller. When it connect to the system first it does the job of initialization and then we provide the option such as copy, paste, cut etc. by using switches for dealing with the data. After completion of this procedure the particular file name in the pen drive are shown in TFT display. To provide the option such as cut, copy, paste is provided with the help of switching kit.. When we select the specific file it is sensed by the Raspberry pi, it provides the required operation as per we send the information, then the output our data on TFT and then actual data transfer.

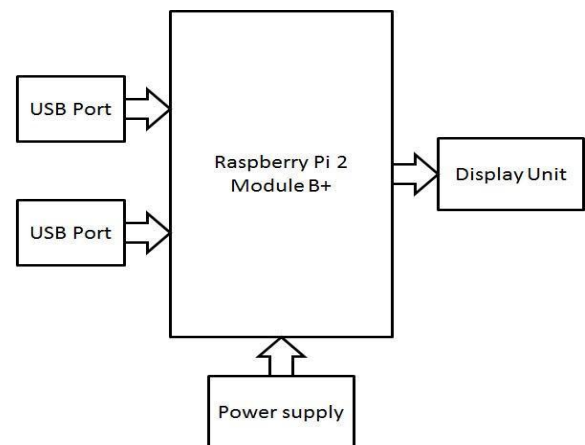
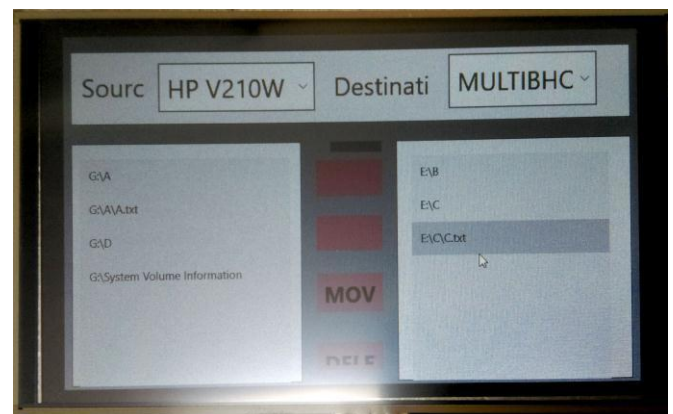
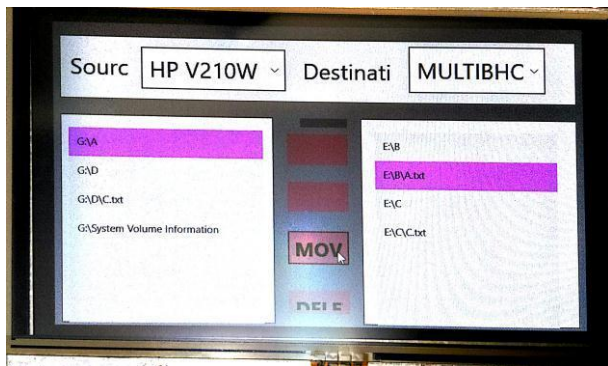
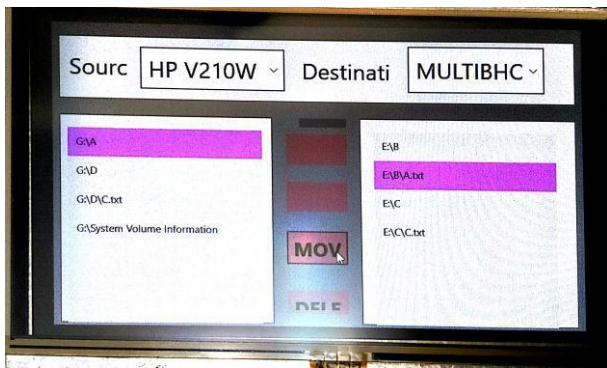


Fig 1: Block Diagram

### IV. RESULT





## REFERENCES

- [1] Sonal N.Kawale, "USB to USB and Mobile Data Transfer Without, connecting to PC Using ARM Processor" International Journal of Engineering Research and Application. Issue 12-13 April 2014.
- [2] Singh Harpreet 1, Flash Drive Communication Using Embedded System International Journal of Engineering and Computer Science Volume-3 Issue 2 February, 2014 Page No. 3947-3950
- [3] Omprakash Gawali, "Communication in USB's For Data Transfer, International Journal of Engineering and AdvanceTechnology, Vol-2, Issue - 4, April 2013.

## V. CONCLUSION

This paper is for transferring the data between two USB data drives using Raspberry pi. We can, not only transfer the data but also can see the particular data file on screen using TFT display.

## VI. FUTURE SCOPE

- It can be implemented to provide security for data transfer with the help of Ethernet.
- USB to printer interface.

## ACKNOWLEDGEMENT

We are thankful to Management of Sandip Institute of Technology and Research Center and all our faculty members of E&Tc Department for their encouragement and whole hearted cooperation. We would like to thank Prof.Kavita Patil for her guidance and valuable suggestions time to time. We would like to express profuse thanks to all our colleagues for their support during this work.