

Communication In USB'S For Data Transfer

Omprakash Gawali, Ketan Pandurang Kale, Mahesh Sanjay Gund, Ganesh Balasaheb Gaware

Abstract—The system enables data sharing between mobile and pen drive directly without using computer or laptop. An arm processor is interfaced USB and USB host controller. Latest mobile phones have got memory capacities GB's and can be connected computers. These mobile phones have capability to get connected to the internet. The mobile phones have the additional features like camera, mp3, multimedia A/V, etc. A large amount of data is handled through mobiles. The system will enable data sharing between mobile, pen drive, digital camera and the device having USB interface. This will eliminate need of an intermediate computer and thus save time and power.

Keywords- USB, GB's, MP3, A/V.

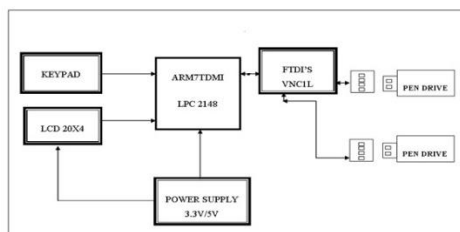
I. INTRODUCTION

Electronics plays a vital role in our daily life. It is a key in making this world a small and making everything happen at our finger tips. In the present world of electronics there are various ways are present for storage of any type of data electronically, today's most used and flexible is pen drives. But data transfer between them related with computer, and we are not able to share files between two USB flash drives when user is away from computer. So we wanted to do a project which is complete blend of hardware and software. This project is used to direct data transfer between USB flash drive to USB flash drive without connecting to computer. The disadvantage of using USB Flash Drives is that it requires a personal computer or a laptop to initiate file transfers between one another. As a solution of this disadvantage of USB pen drive, our research project aims to develop a device that allows the file transfers between two USB BOMS (bulk only mass storage i.e. Mass Storage Class Devices) without use of personal computer or a laptop.

We propose to provide two options:

- Complete data transfer from one flash drive to another flash drive.
- Selected file is transfer from one flash drive to another flash drive.

A. System Block Diagram



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B. Block Diagram Description

The main object of this project is to do data transfer from one pen drive to another pen drive.

As shown in block diagram, we have master USB terminal and a slave USB terminal. Here user has to first insert the first pen drive in the master USB terminal. Then the ARM controller reads the data from pen drive using SPI protocol and display contents list on 20*4 LCD.

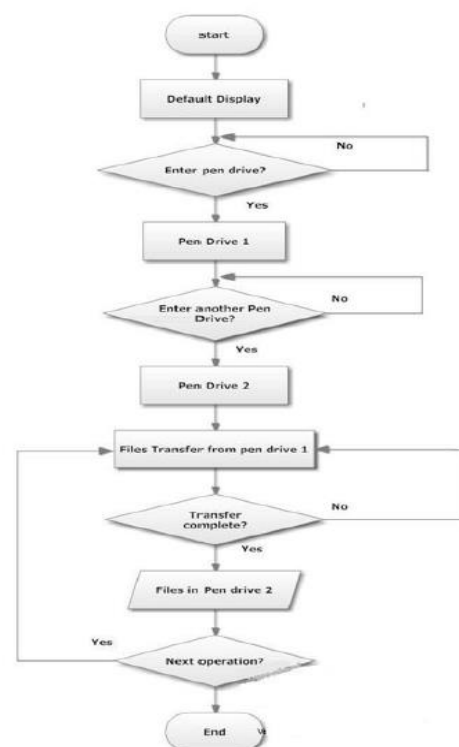
After this user needs to put another pen drive in slave USB terminal. The ARM controller reads the data of this pen drive as well and displays the contents on 20*4 LCD.

After this user can use matrix keyboard to search data on either of pen drives. From the menu screen the user can select/copy/cut/paste the data/files from the master pen drive to the slave pen drive.

For USB interface with microcontroller we are using interfacing IC VNC1L. The interfacing IC forms a bridge between USB and arm7 microcontroller. The IC has features of serial interface and a USB host interface. On the other side, we are connecting both UART ports of microcontroller arm7 to the two sets of UART Tx and Rx. So data is sent on UART to the interfacing IC VNC1L. This IC will in turn communicate with USB device, in our case it is pen drive.

Once the IC successfully establish a communication with the USB devices i.e. pen drives, the user can do the necessary like copyand paste operation from one pen drive to another pen drive with help of matrix keyboard.

II. FLOW CHART



III. ALGORITHM

- 1) Start
- 2) Initialize LCD and Display string.
- 3) Wait for detection of both drive A and B.
- 4) If both drives are connected and detected then select drive as per user requirement.
- 5) Display contents of the selected drive.
- 6) Perform required operation on selected file from selected drive A to B.
- 7) Check the contents of drive B.
- 8) Operation done then go to step 5.
- 9) Stop

III. FUTURE SCOPE

While working on the development of the system and exploring the peripherals that can be interfaced with the ARM 7 we found that with little modification in the project several new features could be added. Following are the things that can be done with few modifications.

1. Add USB host capability to embedded products.
2. Interface USB Flash drive to MCU/PLD/FPGA
3. Using Bluetooth in our device, we can connect with any Bluetooth enable devices making the data transfer wireless.
4. Keypad and Graphical LCD could be replaced by touch screens which could make human work easier by drag and drop method.

IV. CONCLUSION

Transferring the data through USB in today's scenario is the most common task. But the problem is that for transferring the data to a personal computer or laptop is difficult if u don't have any of them. It is affordable to purchase a USB data drive than purchasing a laptop or PC. Therefore we came up with a handled battery operated affordable device which can transfer the data between two USB data drives without the help of PC or laptop.

The advantage of this device is that it is battery operated so there is no need of power supply connection and data transfer can take place at any place

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