3 ½ Floppy to USB Flash Reader

Manual

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PLRElectronics

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About this document

About this document

   This document is to be used as a reference user's manual for the 3 ½ Floppy to USB Flash Reader system.

   We highly encourage you to completely review the entire contents of this manual before installing or using your USB device.

   To download a copy of this manual at anytime, please go to:
     http://www.PLRElectronics.com/3-and-A-Half-USB-Reader-Manual.pdf

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Chapter 1

Product introduction

Undoubtedly, the floppy drive will soon be eliminated due to its small storage space, short lifetime and fragility along with the fast development and popularization of USB Flash drives   For most industrial computerized devices which are still equipped with floppy drives as the only or main data imputing device, the most effective method to continue its life span is to convert it to a USB Flash drive reader or use network data transferring. PLRElectronics brings you a USB Simulating Floppy Drive which offers a solution to companies with equipment needing the floppy drive upgrade. Just Install a SFDR to replace the original floppy drive in its existing location using the systems original hardware. You will then be able to store and transfer data using a USB Flash drive or directly by network.

1.1 About the SFDR

PLRElectronics SFDR is designed for replacing original floppy drives in computers and most all kinds of all devices which use floppies, while still using the original wires and space. The device is easy to install and does not require any modifications or changes on your existing device. While using USB flash drive as the data transfer device and storage media, you can take advantage of mass storage, easy reading and writing operations, permanent data storage, and avoiding using easily damageable floppy drives and floppy disks.

There are four types of the SFDR unit:

The SFDR-I is the basic floppy emulator and there are variants to match most any machine.

The SFDR-II allows a central computer control of the contents of the drive, and units may be daisy chained together.

The SFDR-III is a laptop-sized floppy drive emulator. It is half the height as a normal drive.

The SFDR-IV is a 26-pin variant of the floppy emulator.

There is also an optional file chooser attachment, which opens up the size capability of USB flash drives and allows many "disks" to be switched without changing out the USB stick.

1.2 Function & Features

1.) Powerful: It is designed to replace traditional floppy drive equipped on all types of device, enabling the transfer of data from a USB flash drive or via a network system to ensure a more convenient and efficient data storage and transferring drive

2.) Application: Suitable for all kinds of devices which are equipped with floppy drives. For example: computers, digital machinery tools, CNC, embroidery machine, computerized knitting machines, quilting machines, test equipment, sound equipment and instruments, copiers, etc.

3.) Simple installation: Install the SFDR in the existing location of the original floppy drive. It's simple, easy, and fast.

4.) Convenience: Insert the USB flash drive into the SFDR to read data to the device through the original floppy drive connection cable.

5.) Advanced management: Both USB and network port are available for stand alone or multi-device network data transferring. The choice of USB or Network provides the best quality price product for your future upgrades.

6.) Higher efficiency and Reliability: The SFDR works stable with higher efficiency and it's safer and more reliable than a floppy drive. It also helps avoid lost data due to damaged floppy disks, reduces production cost and increase production efficiency.

Chapter 2

Installation Instructions
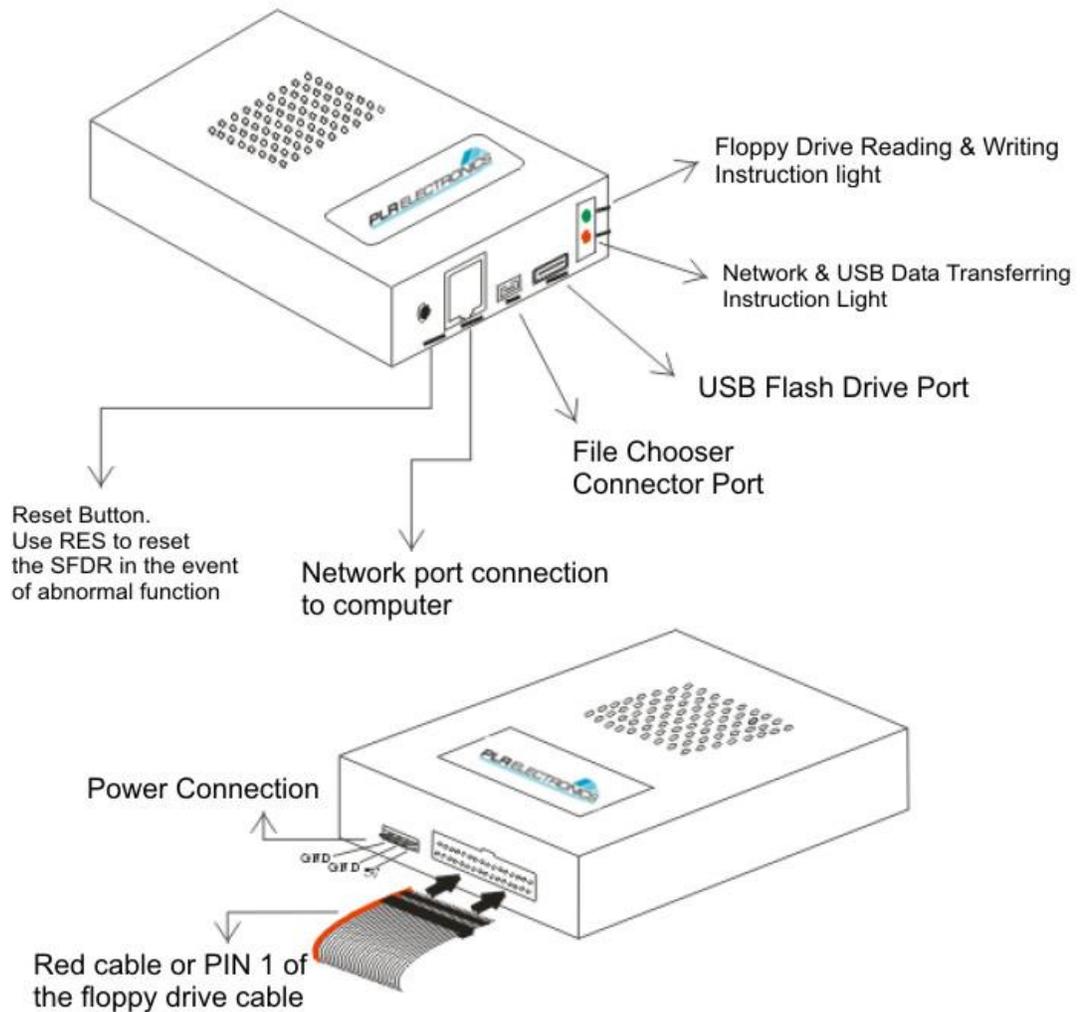
To install your 3 ½ floppy to USB Flash Reader, with the device powered off and unplugged, simply remove the existing drive from its cradle. Disconnect existing ribbon cable and power cable from existing drive. Reattach existing power cable and ribbon cable to the USB Flash Reader. Insert USB Flash Reader into existing 3 ½ floppy cradle and reattach all hardware. Be certain where PIN1, or the red stripe, is plugged in (it should be nearer the power connection, not to the outside). Some host system manufacturers are not careful of matching the red stripe with PIN1, so double check. PIN3 is usually marked on the original floppy drive, by being missing, and PIN1 is definitely next to the missing slot, so when you remove the old floppy you can check, and that side of the ribbon cable can be considered PIN1. If there is a USB stick inserted, and the red light flickers a little on power up, then you have your cables connected correctly. Your host system may need reconfiguration of floppy drive settings in its software.

Chapter 3

Usage Instructions

Description

1.) SFDR base unit: Uses the USB flash drive storage capacity as per the equipment's identifiable floppy drive capacity: 1.44M/1.2M/720KB. Capability of being used as the system startup disk. USB flash drive plug-and-play. Uses the same functions of reading floppy disks from devices standard control system to read the USB flash drive. Is only compatible with DOS/FAT file systems, proprietary file systems must use the Image type.

2.) SFDR + File Chooser: Using the file chooser device in conjunction with the SFDR-I will give the ability to choose any file folder inside the USB flash drive, the maximum size of each file folder is equal to the original floppy disks storage capacity. The capacity of each file folder cannot exceed the original storage size of the floppy drive which is identified by the equipment's computer system (1.44MB / 1.2MB / 720KB). Files beyond this size cannot be identified by the SFDR. The function of the chooser is to be able to choose any file folders inside the USB flash drive without limitation on the total file size. Be sure to place at least one file, for example a blank text file, in each and every folder, including the main folder.

3.) SFDR variants: The letter on SFDR type label represents the different floppy drive model. We request that you inform us of the original floppy drive type and host machine, when placing an order to avoid mismatching. For example, the popular type 1 variants:

SFDR-I-I--------------Basic IBM type, PCs, Haas, SONY MPF920 (twisted ribbon cable is a giveaway)
SFDR-I-A-------------Tajima Embroidery machines
SFDR-I-B-------------Barudan Embroidery machines
SFDR-I-SW-----------Universal TEAC FD-235 (highly configurable)
SFDR-I-F--------------Similar to the SW, for hosts that load quickly; always has a dummy disk loaded.
SFDR-I-G-------------Image type, for non-DOS applications. May require two units.

3.1 Reading, Writing, and Formatting functions of the SFDR

Reading Function of SFDR:

1.) FAT (FAT16) format is required for use with the USB flash drive. If there are any errors when using the USB flash drive on the SFDR for the first time, it is suggested to format it on a separate computer system and set file system parameter into FAT (FAT16, not FAT32). Not every make and model of USB flash drives are compatible. 4GB or larger drives are not compatible.

2.) Insert the USB flash drive into the SFDR's USB port. Files inside the USB stick are loaded into the SFDR automatically when read light of the SFDR is on. Do not remove the USB flash drive during the loading process. The USB will gather files until its configured emulated floppy size (720kb/1.44mb) is full.

3.)The green light on the front panel will activate when the host machine is accessing the drive. Failure of the green light means that there is a miscommunication between host and USB emulator, and either dipswitch 5 must be flipped, or it is a mismatched drive, or some another issue.

Writing Function of SFDR:

1.) To write any files from the device to the SFDR's memory, you may use the standard copy, remove, edit, save, delete, etc functions as supported by your device's operating system.

2.) After the data is written to the SFDR unit, the green light of the SFDR will go off. But the red light will not turn off until the USB flash stick has been successfully written; there will be loss of data if the stick is removed during red light.

3.) The SFDR distinguishes files which have been written into its memory as per the defined memory capacity of the floppy drive setting on the device. When more files are needed be sure the size of each file combined isn't bigger than the total memory capacity of floppy drive setting. In the event that the

total size of those files is bigger than the floppy drive's set size, there may be uncertainty about which files will be visible and which will not. Memory space should be released by deleting existing files, until under the emulated floppy size, or by using the file chooser and loading a different folder.

Note:
1.) When writing files to the USB flash drive, files with the same name will replace the previous one.
2.) The SFDR will start writing files to USB flash drive for a few seconds after the green light is off. If you try to access the drive again during this process, errors such as "Floppy drive is not ready" may appear. In this event just wait until the red light of the SFDR is off and continue operating the device once the error disappears.
3.) Do not remove the USB flash drive during the writing process in order to avoid damaging the USB file system or the USB flash drive, causing loss of data.
Formatting Function:
4.) Formatting the SFDR on the device will set the file system parameter to the FAT format, all other parameter are set default by the system.
5.) When formatting the SFDR, all files inside the USB flash drive will be deleted. It is recommended to only format the USB flash stick directly from a PC.

3.2 Making a DOS startup disk with the SFDR
Application:
DOS startup disk can be made when it is required to startup or boot the computer controlled equipment, with a disk. The process is as follows:
1.) Format the USB flash drive to the FAT format.
2.) Connect the SFDR to a computer which is able to format a startup floppy disk.
3.) Insert the USB flash drive into the SFDR, and format the SFDR as a startup disk.
4.) After formatting, wait until the files of the SFDR are written onto USB flash drive.
5.) Once the Read light of the SFDR is off, the files have been written into USB disk which is now able to work as a startup disk.
6.) You may now install the SFDR in to the device
Note:
1.) The startup USB flash disk can only be used for startup with the SFDR.
2.) If here are any other files to be attached with the startup disk, copy them to the USB flash drive directly. The total size of the file shouldn't be any bigger than the specified size of a floppy disk.
3.) Insert the startup USB flash drive into SFDR as a startup disk when booting the device.

3.3 Installing programs by a SFDR
1.) Format the USB flash drive and set the file system parameter to FAT (FAT16).
2.) Copy all of the files from the floppy disk onto the root of the USB flash drive. If there is only one disk of the installation, insert the USB flash drive into SFDR and start the installation process.
3.) The SFDR file chooser is helpful in the event that there are more than one installation disk. The process is as follows:
    a.) Create folders under the root of USB flash drive as per the number of installation floppy disk. It is suggested to use the same folder names as per the original installation disks.
    b.) Copy all files of the installation disks into the USB flash drive's folder accordingly; hidden files should also be copied if applicable.
    c.) Insert the USB flash drive into the SFDR and choose the first installation disk folder using the chooser device. Copy all of files onto the SFDR.

        d.) When prompted for the next disk of the installation, use the chooser to select the next directory corresponding to the next disk.

        e.) Repeat the process until installation is done.

Note:

1.) Do not copy any other folders or files onto the USB flash driver if they are not necessary for the installation process.

2.) Be sure to check if there are any hidden files and copy them onto USB flash drive as well.

Chapter 4

How to use the File Chooser (when applicable)

1.) How to connect the SFDR File Chooser:

A.) Connect the File Chooser to the LK port of the SFDR and turn on the power of the device. The connection is as shown below:
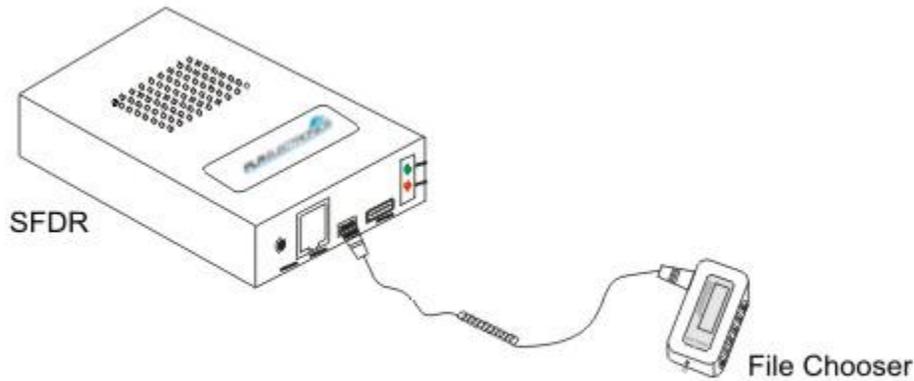
Diagram of the File Chooser Connection

B. File Chooser Buttons and Display:
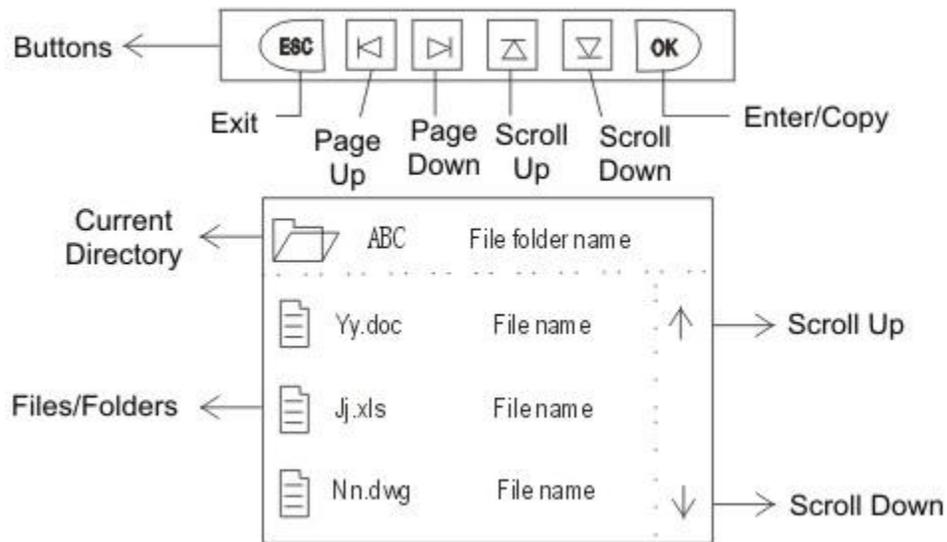
2) How to use the File Chooser:

A.) The system will default to the root directory on the SFDR after the USB flash drive is inserted. Make sure there is at least one real file in each and every directory, including the main directory (folders alone do not count). It can be a blank text file, if nothing else.

B.) Perss OK to enter the folder when the cursor is on top of the folder you would like to enter. Press and hold the OK button for a moment to copy the files inside the folder to the SFDR, you may choose any file within the folder. After holding for a second, releasing will activate the function.

C.) Be sure the combined file size in the folder isn't larger than the floppy disk memory size which can be distinguished by the device's system settings, otherwise files larger than the floppy disk memory capacity will not be copied to the SFDR.

D.) Press and hold the ESC button to exit and return to the root directory at any time.

E.) The file chooser doesn't include protection against damage if removed while the device is still on. When attaching or removing the file chooser attachment, ensure that your device is completely powered off.

Chapter 5

Network System (optional)

The SFDR-II system includes a RS-485 communications port. It is convenient when you wish to control the contents of many machines with a single computer. The network driver is required for computer control. To daisy chain, use standard Ethernet cable and junction boxes; this is not an Ethernet system so do not plug into any hub or router.

Network connection schematic drawing

Frequently Asked Questions

FAQs

- Q - Will this device work with a Windows NT operating system?
  A – YES. This device should work with any OS assuming it is capable of working with IBM type floppies and a FAT file system.

- Q - Will the 3 1/2 floppy to USB drive work in a XXXXXXXXX that can only read 720k 3 1/2 floppies?
  A - Yes

- Q - We have XXXXXXX machines here and the floppy disk is 720K. IF we put a 1.44k in the machine the floppy drive does not work. Do you have a 720K mode on your device?
  A – Yes. Typically dipswitches 7 and 8 OFF will force 720k mode.

- Q - Hi I am presently using a XXXXXXX keyboard which uses floppy disks on which I play my music files. Can this flash drive reader be used in my case?
  A – If DOS compatible. If not, the non-DOS file system version may work.

- Q – Hi, I currently have a floppy disk drive that is half the height of a standard drive. How can I modify this to work?
  A – You do not need to modify anything. We offer a laptop height version. Please ask for this version when placing your order.

- Q – Is it USB 2.0?
  A – No, its standard USB. However, USB 2.0 is used primarily for high speed data transfer. In this instance, the files you are using are very small so, there will be no noticeable difference.