Optim FreedomView LED Videoscope Firmware Update Procedure

Overview

This document describes how to do a field update of the FreedomView LED Videoscope (FVVS) firmware. The update procedure assumes the customer has access to an internet-connected PC with which to access the Optim web site and download the latest FVVS firmware. The firmware update files must first be copied to an SD card. Then the SD card containing these files must be inserted into the videoscope to be updated. The firmware update happens automatically upon the next power-up of the videoscope.

The update files may be copied onto the SD card by one of two methods, either by:

    a) Connecting the videoscope (with its SD card inserted) to a PC using the supplied USB cable, or

    b) Removing the videoscope's SD card and plugging the card directly into a PC equipped with an SD card reader or adapter.

Both methods are described in this document.

System Requirements

The following are needed for updating FVVS firmware:

- A PC running Windows XP (or later) which has internet access and either a spare USB port or an SD card reader.
- A standard USB male type A-to-male type B micro cable (included with the FV Videoscope)*.
- A standard-size SD card (an 8 GB SD card is supplied with the videoscope) with at least 10 MB of free space available.
- A password to open the FVVS Update zip file (Customers may contact Optim to obtain this).

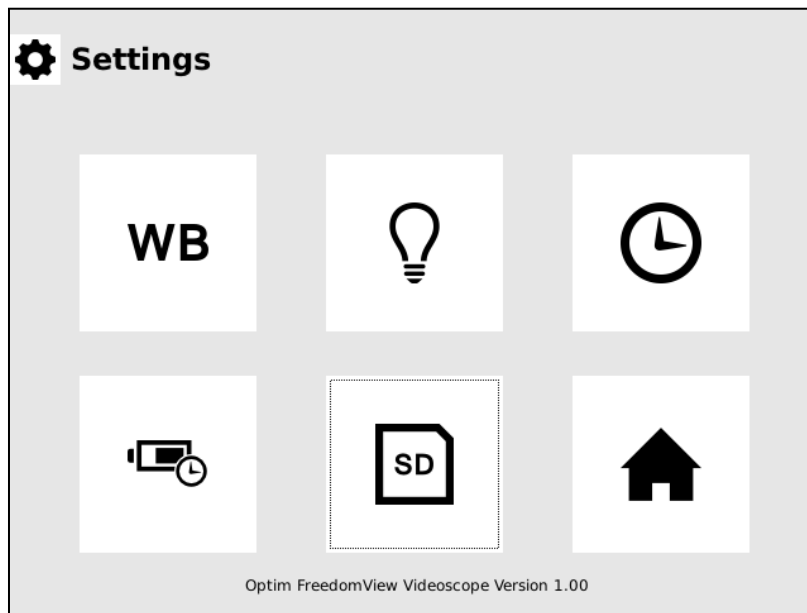* Required only if accessing videoscope's SD card via USB connection.

Software User Agreement

The customer agrees to use this software as is, and will not attempt to modify or reverse engineer any of the FVVS update files. It is intended only for use with the Optim FreedomView Videoscope. Using this software for any other purpose or redistribution in any way is forbidden.

Before Attempting an FVVS Update

Check what version firmware is currently installed on your videoscope. If that version is the same as what is available on Optim Customer Support website, then there is no need to proceed further since the version installed on your videoscope is the latest. To check the FVVS version:

- Power up the videoscope. When the home screen appears, press the "Settings" icon to navigate to the Settings Menu. The version is displayed at the bottom edge of this screen as shown below:

As noted earlier, the FVVS update may be done by either removing the videoscope's SD card and copying the update files onto it using a PC's SD card reader, or establishing a USB connection between the PC and videoscope to make the videoscope's SD card memory visible as a mass storage device on the PC. See below for each update procedure:

FVVS Update Procedure using PC's SD Card Reader

Please follow the steps below to insure a successful FVVS firmware update:

1. Be sure the videoscope's Li-Ion battery is fully charged before starting the update procedure.
2. Using a Windows PC, go to the Optim FreedomView Videoscope Software page using the link below:
   http://www.optim-llc.com/industrial-fiberscopes/freedomview-led-videoscope/fv-videoscope-software-update/
3. Download the **fvvs-[version]-update.zip** file to your PC.
4. Locate and highlight the **fvvs-[version]-update.zip** folder on your PC, then right-click on it.
5. Select the "Extract All" option, and use the default destination directory for the zip file extraction.
6. During the zip file extraction you will be prompted to enter a password. Enter the password you obtained from Optim Customer Support.
7. Locate the newly-created zip file destination folder named **fvvs-[version]-update**, then verify that this folder contains the following four files:

   > **fvvs-[version]-update.md5**
   > **fvvs-[version]-update.tgz**
   > **optim_update.sh**
   > **optim_restore.sh**

8. Insert an SD card into the PC's SD card reader or adapter.   Verify that the SD card has at least 10 MB of free space available.

9. In the **fvvs-[version]-update** folder which contains the extracted update files, select (highlight) the following **three** files:

> **fvvs-[version]-update.md5**
> **fvvs-[version]-update.tgz**
> **optim_update.sh**

Do **not** include the file named "optim_restore.sh" (See "Uninstalling a Firmware Update").

10. Drag (copy) the files selected in the previous step to the SD card drive and verify that they are visible in the SD card drive's root directory.
11. If the videoscope to be updated is powered up, power it down now.
12. Remove the SD card from the PC's card reader and insert it into the videoscope.
13. Power up the videoscope. During power-up the update files present on the SD card will be read and the firmware will be updated.
14. To validate that the update completed successfully, go to the "Settings" menu and read the firmware version number shown at the bottom of the display. It should now match the version number that's embedded in the update zip filename, "fvvs-[version]-update.zip".
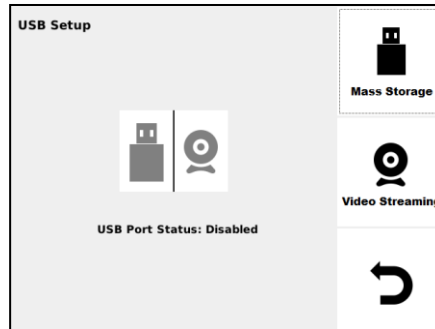
FVVS Update Procedure using a USB connection

Please follow the steps below to insure a successful FVVS firmware update:

1. Be sure the unit's Li-Ion battery is fully charged before starting the update procedure.
2. Using a Windows PC, go to the Optim FreedomView Videoscope Software page using the link below:
http://www.optim-llc.com/industrial-fiberscopes/freedomview-led-videoscope/fv-videoscope-software-update/
3. Download the **fvvs-[version]-update.zip** file to your PC.
4. Locate and highlight the **fvvs-[version]-update.zip** folder on your PC, then right-click on it.
5. Select the "Extract All" option, and use the default destination directory for the zip file extraction.
6. During the zip file extraction you will be prompted to enter a password. Enter the password you obtained from Optim Customer Support.
7. Locate the newly-created zip file destination folder named **fvvs-[version]-update**, then verify that this folder contains the following four files:
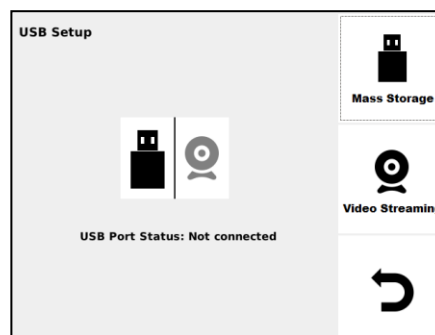
> **fvvs-[version]-update.md5**
> **fvvs-[version]-update.tgz**
> **optim_update.sh**
> **optim_restore.sh**

8. Power on the videoscope. Validate that the home screen's battery icon indicates a fully charged battery and that an SD card is inserted in the unit. The SD card must have at least 10 MB of free space available.

9. Press the "USB" button to enter the USB setup menu shown below:

10. Press the "USB Mass Storage" button and verify that the previously grayed-out USB Mass Storage icon changes to a black-and-white shaded icon.

11. Connect the supplied USB cable to the videoscope's micro USB port and the PC's host USB port.
12. Verify that the videoscope's "USB Port Status" changed from "Not connected" to "Connected", and that the videoscope's SD card now appears as a removable media storage device on the PC.
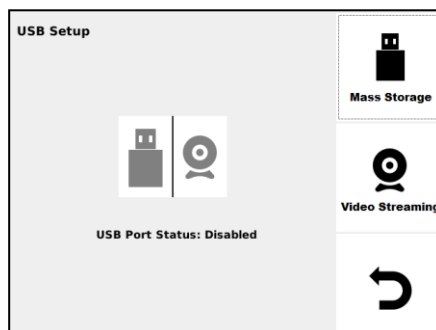
   Make a note of the drive letter the PC has associated with the videoscope's SD card memory.

13. In the **fvvs-[version]-update** folder which contains the extracted update files, select (highlight) the following **three** files:

   fvvs-[version]-update.md5
   fvvs-[version]-update.tgz
   optim_update.sh

   Do **not** include the file named "optim_restore.sh" (See "Uninstalling a Firmware Update").

14. On the PC, drag (copy) the files selected in the previous step to the drive the PC has associated with the videoscope's SD card memory and verify those files are visible in that drive's root directory.
15. On the videoscope, press the "USB Mass Storage" button and verify that the USB Mass Storage icon changes back to a greyed-out icon which indicates that the USB connection has been disabled.

16. Disconnect the USB cable from the PC.
17. Power down the videoscope, then power it back up. During power-up the update files present on the SD card will be read and the firmware will be updated.
18. To validate that the update completed successfully, go to the "Settings" menu and read the firmware version number shown at the bottom of the display. It should now match the version number that's embedded in the previously downloaded zip file, "fvvs-[version]-update.zip".

Uninstalling a Firmware Update

The FVVS firmware may be restored to its pre-updated state by following the same procedures described earlier for updating, except that the text for **Step 9** of <u>FVVS Update Procedure using PC's SD Card Reader</u> and **Step 13** of <u>FVVS Update Procedure using a USB Connection</u> is replaced with the following text (in blue):

In the **fvvs-[version]-update** folder which contains the extracted update files, select (highlight) only the following **two** files:

optim_update.sh
optim_restore.sh

Do **not** include any other files from the **fvvs-[version]-update** directory.

After the uninstall procedure is run, the original firmware's revision number should be displayed in the "Settings" menu.