

Firmware Update Procedure for TLM-170K/TLM-170F

1. Introduction

Firmware update is performed by connecting a USB flash drive with the latest firmware files into the USB port which is located on the rear panel of the TLM-170K/TLM-170F.

This firmware update procedure applies to the following product.

Product Model	TLM-170K/TLM-170F
Product Name	17" ScopeView Production Monitor/17" ScopeView Production Monitor

There are two firmware files for the TLM-170K and TLM-170F respectively.

● Firmware x 2:

For TLM-170K:

- FPGA: TLM-170K_FPGA_V1.2.mcs
- Software: TLM-170K_MCU_V1.8.bin

For TLM-170F:

- TLM-170F_FPGA_V1.2.mcs
- TLM-170F_MCU_V1.8.bin

This document describes how to perform firmware update on a Windows computer.

Screen images from the Windows 10 operating system are used in this document as an example. Images used in this document may differ from the actual screens.

For details on Windows and computer operations, please refer to the instruction manual of your computer.

2. Preparation

2.1 System Requirements

A computer that meets the following requirements is necessary to perform the firmware update procedure.

Laptop or PC	A normal laptop or PC
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Operation is not guaranteed on all computers that meet the above requirements

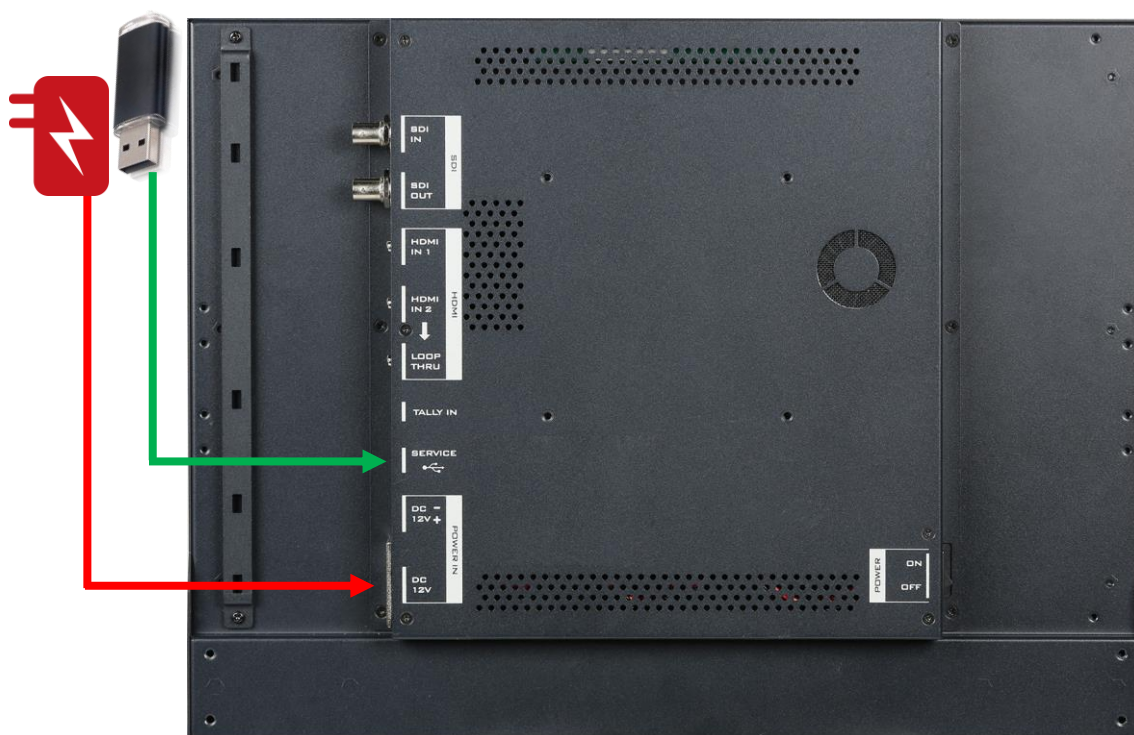
2.2 Firmware Update Preparation

The following items are required to perform this firmware update. Please prepare these items in advance before performing the update.

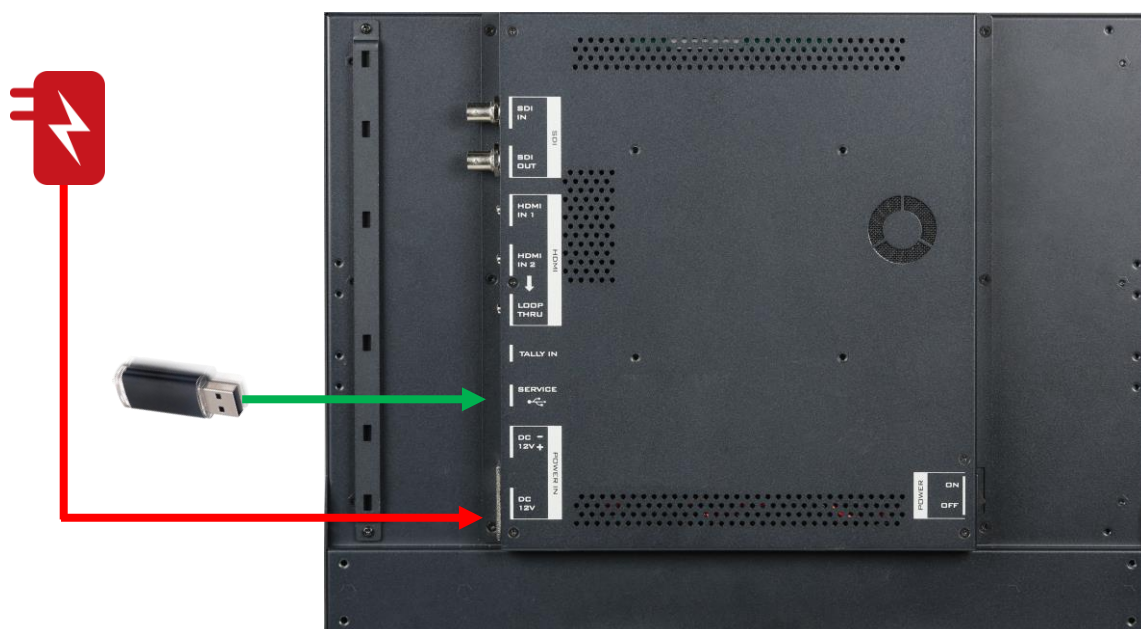
TLM-170K or TLM-170F x 1	The TLM-170K or TLM-170F which is needed for updating the firmware.
12V XLR 4 pin Power adapter x 1	The 12V XLR 4 pin power adapter for the TLM-170K or TLM-170F.
Laptop or PC x 1	The laptop or PC is used to download the firmware files of the TLM-170K or TLM-170F.
● USB Flash Drive x 1	A USB flash drive which is used for saving and updating the firmware.
Latest Firmware ● For TLM-170K <ul style="list-style-type: none"> ➤ FPGA: TLM-170K_FPGA_V1.2.mcs ➤ Software: TLM-170K_MCU_V1.8.bin ● For TLM-170F <ul style="list-style-type: none"> ➤ TLM-170F_FPGA_V1.2.mcs ➤ TLM-170F_MCU_V1.8.bin 	The latest downloaded firmware file.

2.3 System Connection Diagram

TLM-170K



TLM-170F



2.4 Checking the Firmware Version

2.4.1. Please connect a DC 12V XLR 4 pin power adapter.

Please connect a DC 12V XLR 4 pin power adapter to the DC 12V interface which is located on the rear panel of your TLM-170K or TLM-170F.

2.4.2 Please press the “EXIT” Key for 3 seconds.

Please press the “EXIT” key which is located on the front panel of the TLM-170K/170F for 3 seconds and then release it.



2.4.3 Please press the “MENU” key for 3 seconds.

Please press the “MENU” key which is located on the front panel of the TLM-170K/TLM-170F for 3 seconds and then release it.



2.4.4 Please press the “EXIT” key for 3 seconds.

Please press the “EXIT” key which is located on the front panel of the TLM-170K/TLM-170F for 3 seconds and then the screen for showing the FPGA and Software versions will be shown.



2.5 Preparing the Firmware

2.5.1. Download the firmware



TLM-170K or TLM-170F Product Page from the Datavideo website:

- TLM-170K: <https://www.datavideo.com/product/TLM-170K>
- TLM-170F: <https://www.datavideo.com/product/TLM-170F>



2.5.2. Unzip the firmware

Please unzip the downloaded firmware into the hard disk of your laptop or PC and then you can see the following firmware for the TLM-170K or TLM-170F.

- For TLM-170K

-  TLM-170K_FPGA_V1.2.mcs
-  TLM-170K_MCU_V1.8.bin

- For TLM-170F

-  TLM-170F_FPGA_V1.2.mcs
-  TLM-170F_MCU_V1.8.bin

3. Update

3.1 Updating the firmware

- **Updating the Software (MCU)**

3.1.1. Please change the file name of the TLM-170K/TLM-170F MCU firmware to “mcu.bin”.


After the MCU and FPGA firmware files are downloaded, please change the file name of the TLM-170K

or TLM-170F MCU firmware to “mcu.bin”  mcu.bin .

3.1.2 Please copy the “mcu.bin” file into your USB flash drive.

Please copy the “mcu.bin” file into the root directory of your USB flash drive.


3.1.3 Please turn off the power of the TLM-170K or the TLM-170F.

Please turn off the power of the TLM-170K or the TLM-170F by the power switch  which is located on the rear panel.


3.1.4 Please plug the USB flash drive into the USB interface.

Please plug the USB flash drive into the USB interface which is located on the rear panel of the TLM-170K or the TLM-170F.

3.1.5 Please press and hold the “EXIT” key and then turn on the power of the TLM-170K or the TLM-170F.

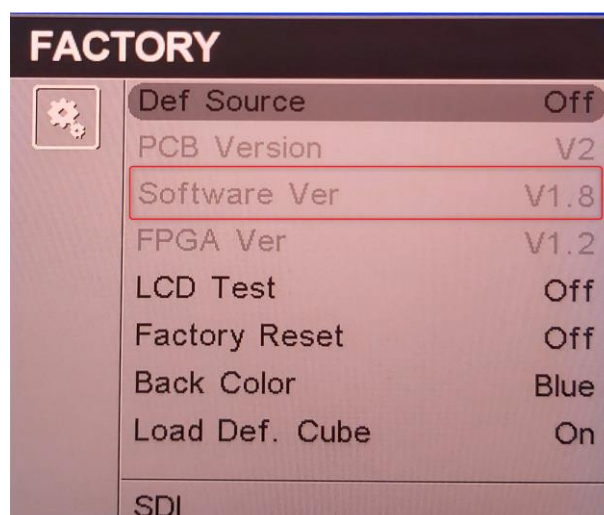
Please press and hold the “EXIT” key  which is located on the front panel of the TLM-170K or the TLM-170F, and then please turn on the power of the TLM-170K or the TLM-170F.

3.1.6 The F1 LED will flash during the firmware update procedure.

The F1 LED  will flash during the firmware update procedure. After the firmware update procedure is finished, the TLM-170K or the TLM-170 F will reboot automatically.

3.1.7. After the MCU firmware update is done successfully, please check the updated version according to the section in chapter 2.4.

After the firmware update is done successfully, please check the updated software (MCU) version according to the steps in “2.4 Checking the Firmware Version”. After that, you can see the updated Software version v1.8 from the screen which is shown in the following diagram.



● Updating the FPGA

3.1.8. Please change the file name of the TLM-170K/TLM-170F FPGA firmware to “fpga.mcs”.

After the MCU and FPGA firmware files are downloaded, please change the file name of the TLM-170K or TLM-170F FPGA firmware to “fpga.mcs”.

3.1.9. Please copy the “fpga.mcs” file into your USB flash drive.

Please copy the “fpga.mcs” file into the root directory of your USB flash drive.

3.1.10. Please turn on the power of the TLM-170K or TLM-170F.

Please turn on the power of the TLM-170K or TLM-170F.

3.1.11. Please plug the USB flash drive into the USB interface.

Please plug the USB flash drive into the USB interface which is located on the rear panel of the TLM-170K or the TLM-170F.

3.1.12. You will see that there is an OSD for displaying “FPGA ISP Loading”.

You will see that there is an OSD for displaying “FPGA ISP Loading” during the FPGA firmware update procedure.



3.1.13. The F1 LED will flash during the firmware update procedure.




The F1 LED will flash during the firmware update procedure. When the F1 LED turns off, it means that the firmware update procedure is finished.

3.1.14. After the firmware update procedure is done, please turn off and turn on the power switch of the TLM-170K or TLM-170F.

After the FPGA firmware update procedure is done, please turn off and then turn on the power switch of the TLM-170K or the TLM-170F.

3.1.15. After the FPGA firmware update is done successfully, please check the updated version according to the section in chapter 2.4

After the firmware update is done successfully, please check the updated FPGA version according to the steps in “2.4 [Checking the Firmware Version](#)”. After that, you can see the updated FPGA version v1.2 from the screen which is shown in the following diagram.

FACTORY		
	Def Source	Off
	PCB Version	V2
	Software Ver	V1.8
	FPGA Ver	V1.2
	LCD Test	Off
	Factory Reset	Off
	Back Color	Blue
	Load Def. Cube	On
	SDI	