

**WFM520UP and WVR520UP
WFM5200 Waveform Monitor and
WVR5200 Waveform Rasterizer
Upgrade Kit
Instructions**

Warning

The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries prior to performing service.

www.tektronix.com



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Tektronix

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- In North America, call 1-800-833-9200.
- Worldwide, visit www.tektronix.com to find contacts in your area.

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General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

To avoid potential hazards, use this product only as specified.

Only qualified personnel should perform service procedures.

While using this product, you may need to access other parts of a larger system. Read the safety sections of the other component manuals for warnings and cautions related to operating the system.

To Avoid Fire or Personal Injury

Use Proper Power Cord. Use only the power cord specified for this product and certified for the country of use.

Ground the Product. This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

Observe All Terminal Ratings. To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

Power Disconnect. The power cord disconnects the product from the power source. Do not block the power cord; it must remain accessible to the user at all times.

Do Not Operate Without Covers. Do not operate this product with covers or panels removed.

Do Not Operate With Suspected Failures. If you suspect that there is damage to this product, have it inspected by qualified service personnel.

Avoid Exposed Circuitry. Do not touch exposed connections and components when power is present.

Use Proper AC Adapter. Use only the AC adapter specified for this product.

Do Not Operate in Wet/Damp Conditions.

Do Not Operate in an Explosive Atmosphere.

Keep Product Surfaces Clean and Dry.

Provide Proper Ventilation. Refer to the manual's installation instructions for details on installing the product so it has proper ventilation.

Terms in this Manual These terms may appear in this manual:



WARNING. *Warning statements identify conditions or practices that could result in injury or loss of life.*



CAUTION. *Caution statements identify conditions or practices that could result in damage to this product or other property.*

Symbols and Terms on the Product

These terms may appear on the product:

- DANGER indicates an injury hazard immediately accessible as you read the marking.
- WARNING indicates an injury hazard not immediately accessible as you read the marking.
- CAUTION indicates a hazard to property including the product.

The following symbol(s) may appear on the product:



Kit Description

This document provides instructions for installing the following upgrades into an existing Tektronix WFM5200 Waveform Monitor and WVR5200 Waveform Rasterizer.

Table 1: Supported upgrades

Upgrade	Description
Option 3G	Adds support for 3G-SDI signal formats.
Option GEN	Adds support for signal generation capability.
Option AUD	Adds 16 channel Embedded AES/EBU Audio Monitoring.
Option DATA	Adds Advanced Data Monitoring and Analysis Package.
Option CAM	Adds Camera Monitoring package.
Option LOUD	Adds Audio Loudness monitoring capabilities (requires that Option AUD is installed).
Option PROD	Adds Advanced Gamut Monitoring Package (Spearhead Display and Luma Qualified Vector Display).

Products

All models of the following Tektronix instruments are supported by this kit:

- WFM5200 Waveform Monitors
- WVR5200 Waveform Rasterizers

Installation Requirements

The following are required to install the upgrade.

Table 2: Installation requirements

Item	Description
Ethernet network connection	Standard Ethernet network access
Standard PC	Running Windows 98, Windows NT 4.0, Windows ME, Windows 2000, Windows XP, or Windows 7
SW Option Key	An option key was included in this kit. This key allows you to enable the option in your instrument through the remote Web interface.
USB memory device (optional)	This can be used if you want to download the SW onto a memory device first, and then download the SW to the instrument
WFM5200 or WVR5200 <i>Specifications and Performance Verification Technical Reference</i> and all test equipment listed within to perform the verification checks (optional)	Tektronix part numbers 077-0533-XX and 077-0534-XX Available for download from the Tektronix Web site at www.tektronix.com/manuals

Kit Parts Lists

The following table lists the parts supplied with each upgrade kit. Before you start the upgrade, verify that you received all of the parts for the upgrade kit you ordered.

Table 3: Kit parts list

Quantity	Part number	Description
1 EA	—	ENVELOPE, IMPORTANT DOCUMENTS; CONTAINS SOFTWARE OPTION KEY
1 EA	075-1026-XX	INSTRUCTIONS; WFM520UP and WVR520UP UPGRADES (this document)
1 EA	—	OPTION KEY LABEL
1 EA	—	OPTION KEY CERTIFICATE (8.5 X 11, PRINTED)

Upgrade Installation

This section provides instructions for the following:

- Verifying the currently installed options
- Installing the software upgrade
- Installing the software option key

Verify the Currently Installed Options

The software option key supplied in this kit is based on the serial number you supplied when you ordered the upgrade for the instrument. The new software option key should enable the new option(s) you ordered, and also preserve your previously purchased options.

Before you install the upgrade, perform the following steps to verify which options are currently installed in your instrument. After you install the upgrade, you will verify that the new options are installed and that any previously installed options are still enabled.

1. Power on the instrument you are upgrading.
2. Press the **CONFIG** button on the front panel.
3. Navigate to **Utilities > View Instrument Options**.
4. Make a list of the installed options.

List installed options

Install the Software Upgrade



CAUTION. *To prevent upgrade failure, your instrument must have the latest version of software installed before you install the hardware upgrade and before you install the software option key.*

Before You Begin

You do not need to perform the software upgrade if your instrument has the latest version of software installed. Perform the following steps to determine if the software on your instrument needs to be upgraded:

1. Power on the instrument.
2. Verify the current software version installed on the instrument:
 - a. Press the **CONFIG** button on the front panel.
 - b. Navigate to **Utilities > View HW/SW Version**.
 - c. In the Hardware and Software Versions display window, note the software version number of the instrument.

Instrument Software version number	
---	--

3. Verify the latest version of software at the Tektronix Web site:
 - a. Use the Web browser on a PC to navigate to the following Tektronix Web site:

`http://www.tektronix.com/downloads`
 - b. On the Downloads Finder Web page, search by model number (such as WFM5200) and filter by software and software type to locate the software-upgrade package for the instrument.
 - c. Note the latest version number of the software-upgrade package(s).

Web site Software version number	
---	--

4. If the latest software version at the Web site is newer than the version on your instrument, you need to upgrade the software.
5. Download the latest version to your PC.
6. After the software package is downloaded, click on the self-extracting archive to extract the following files into the directory of your choice: `transfer.exe` and `firmware.pkg`. There may also be a `readme.txt` file.

You can perform the upgrade using a USB memory device or over your local Ethernet network. The time required to complete the upgrade is about 25 minutes. (See page 7, *USB Software Installation*.) (See page 8, *Network Software Installation*.)



CAUTION. *Once the instrument has started to erase internal flash, DO NOT remove power from the instrument. If you do so, the instrument flash will be corrupted. The instrument will have to be sent to a Tektronix factory service center to have the system software restored.*

NOTE. *If power to the instrument is lost before it begins erasing the internal flash, you can restart the software upgrade after the instrument reboots. If the instrument only displays a blank screen after power is reapplied, see the troubleshooting procedure in this manual. (See page 10, *SW Installation Troubleshooting*.)*

USB Software Installation

Use the following steps to upgrade the instrument software using a USB memory device.

1. Insert the USB memory device into a USB port of the PC containing the latest software.
2. On the PC, navigate to the USB device.
3. On the USB device, create a directory named:
wfmUpgrd
4. Open the WfmUpgrd directory and copy the firmware.pkg file (from the extracted archive) to the USB device.
You should have a directory path wfmUpgrd\firmware.pkg.
5. Safely remove the USB device from the PC and insert it into the USB port on the front panel of the instrument.
6. Power on the instrument.
7. Press the **CONFIG** front panel button.
8. Navigate to **Utilities > System Upgrade > Upgrade Options > USB Upgrade**.

NOTE. *If the instrument displays a message indicating that a USB device containing firmware was not detected, make sure you have the correct directory path on the USB device. Also, press the **MAIN** front panel button to check that the USB device is properly mounted.*

9. Press the **SEL** front panel button. This displays the System Software Upgrade window.
10. Select **Continue** from the System Software Upgrade window and press **SEL** to start the software upgrade.

During the upgrade process, the instrument displays messages indicating the upgrade status. Do not remove the USB device until the upgrade is complete.

Network Software Installation

Use the following steps to upgrade the instrument software using a network connection. If a power failure occurs during the upgrade procedure and the instrument has a blank screen when you reapply power, see the Troubleshooting section for help. (See page 10, *SW Installation Troubleshooting*.)

1. Connect the instrument and PC to your local Ethernet network.
2. Power on the instrument.
3. Assign the instrument an IP address:

NOTE. *The data-transfer utility requires that the instrument be assigned a valid IP address. To allow network access to the instrument, the instrument must be assigned a valid IP address for your network. Network addresses can be assigned either manually or automatically using DHCP. If your network does not use DHCP, you will have to manually enter the address for the instrument. To get a valid IP address, contact your local LAN administrator.*

Alternatively, if you connect the PC directly to the instrument using an Ethernet cable, you can assign the instrument any IP address that is compatible with the IP address of the PC.

- a. Press the **CONFIG** button on the front panel.
- b. Navigate to **Network Settings > IP Config Mode**.
- c. Select either **Manual** or **DHCP** as directed by your LAN administrator. Select **Manual** if you are using an Ethernet cable to connect the PC directly to the instrument.
- d. If you selected **Manual** mode, enter the IP address, subnet mask, and gateway address as directed by your LAN administrator. You need to enter only an IP address if you are using an Ethernet cable to connect the PC directly to the instrument.

NOTE. *If you selected DHCP mode, the network automatically assigns the instrument an IP address.*

- e. Press the **CONFIG** button on the front panel to close the menus.

4. Prepare the instrument for the software upgrade:
 - a. Press the **CONFIG** front panel button.
 - b. Navigate to **Utilities > System Upgrade > Upgrade Options > Network Upgrade**.
 - c. Press the **SEL** front panel button. Note the IP address of the instrument displayed in the System Software Upgrade window.
5. Perform the software upgrade:
 - a. On the PC, double-click the **transfer.exe** file to launch the transfer program.
 - b. Type the IP address or DNS name of the instrument you are upgrading, and then press **Enter**. This starts the software upgrade process.



CAUTION. To prevent upgrade failure, do not close the *transfer.exe* window until the transfer utility asks for another IP address.

- c. The transfer utility displays done when the software upgrade completes. When the software upgrade completes, the instrument will reboot.

```
Please enter DNS name or address of target instrument:
128.181.221.2
Opened TCP connection to 128.181.221.2:77
Reading Firmware Data... done
Erasing Flash... done
Programming Flash... done
Verifying Flash Programming... done
done

Please enter DNS name or address of target instrument:
-
```

Figure 1: Sample of transfer.exe window after the upgrade is complete

6. If the instrument did not reboot at the completion of the software upgrade, remove and then reapply power to the instrument to cause it to reboot.

SW Installation Troubleshooting

If a power failure occurs during SW upgrade and the instrument has a blank screen when you reapply power, perform the following procedure.

1. Make sure that an Ethernet cable is connected directly from your PC to the instrument. You need a direct network connection.
2. Turn off the instrument (remove power).
3. Press and hold the left arrow key while you press the power button.
4. The instrument will turn on and the default IP address of 192.168.1.1 will be set.
5. Set the IP address of your PC to 192.168.1.x, where $x \neq 1$.
6. Enter the IP address of the instrument (192.168.1.1) for the upgrade transfer application.
7. Start the upgrade process. When it is complete, the instrument should reboot. If it does not, cycle the power.

If you continue to experience a problem, contact your Tektronix sales representative for assistance.

Install the Option Software Key

Read the entire procedure before installing the software option key.



CAUTION. *To prevent upgrade failure, your instrument must have the latest version of software installed before installing the hardware upgrade and before installing the option key. (See page 6, Install the Software Upgrade.)*

1. Verify that the instrument is powered on and connected to your local network.
2. Verify the IP address of the instrument:
 - a. Press the **CONFIG** button on the front panel.
 - b. Navigate to **Network Settings**.
 - c. Note the IP address of the instrument.
 - d. If the instrument does not have an IP address set, ask your network administrator for a valid IP address. Refer to the online help or the User manual on how to set the instrument IP address.
3. Verify that you have access to a PC with a Web browser application that is connected to a network with access to the instrument.
4. Perform the following steps to enter the software option key:
 - a. On the PC, open your Web browser application.
 - b. In the address bar of the Web browser, enter the IP address of the instrument you are upgrading. This opens the **Tektronix WFM5200 Remote Interface** screen.
 - c. Click the **Instrument Options** link to open the **Active WFM5200 Options** screen.
 - d. In the **Key** field, enter the 20-character option key string (with or without dashes). The new option key is supplied in the Important Documents envelope.
 - e. Click the **Submit** button to enable the software option. The instrument enables the option and adds the installed option to the list of currently installed options shown at the top of the screen.

NOTE. *If you purchased multiple options, the software option key supplied with this kit activates all of the options you purchased.*

Verify the Upgrade

Quick Verification

Perform the following procedure to verify that the new option(s) have been installed and the instrument is functioning correctly:

1. Power on the instrument.
2. Verify the installed options by performing the following steps:
 - a. Press the **CONFIG** button on the front panel.
 - b. Navigate to **Utilities > View Options** to display the installed options.
 - c. Verify that the options installed prior to this upgrade are still enabled, and that the new option(s) you installed are enabled.

NOTE. *If the option(s) you just installed are not listed or if your previously installed options are not listed, contact Tektronix for assistance.*

3. Verify that the instrument passes the advanced diagnostic tests by performing the following steps:
 - a. In the Config menu, navigate to **Utilities > Run Diagnostics**.
 - b. Press the **SEL** button.
 - c. Press the right arrow key to highlight the box next to **Run Advanced Diagnostics**. This box is located at the bottom of the display screen.
 - d. Verify that for each diagnostic test the result reads **Pass**.
 - e. When the test is complete, press the right arrow key to highlight the box next to **Exit** to exit the diagnostics display.
 - f. If you want to view the diagnostics test results again, select **View Diagnostic Log** from the **Utilities** menu.

NOTE. *If a diagnostic test fails, contact Tektronix for assistance.*

Detailed Verification

If you want to perform additional verification of the installed options, perform the *Incoming Inspection Tests* found in the Specifications and Performance Verification manual using the specified test equipment.