

Instructions



WVR6UP and WVR7UP Upgrade Kits

WVR6100 and WVR7100 Series Waveform Rasterizers

075-0887-00

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.

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Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* in the product service manual or the instruction manual.

Do Not Service Alone. Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect Power. To avoid electric shock, switch off the instrument power, then disconnect the power cord from the mains power.

Use Care When Servicing With Power On. Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

Kit Description

These instructions support field installation of all options currently available for field installation in the WVR6100 and WVR7100 Waveform Rasterizers. Find your kit in the table of kits supported that follows.

NOTE. After installing any audio option in this kit, do not use the optional accessory, Analog/Audio Breakout Cable Assembly, Tektronix part number 012-1658-01. This optional accessory is for rasterizers that shipped with early versions of audio option hardware and will not work with your new audio option. You can order part number **012-1688-00**, which is an Analog/Audio Breakout Cable Assembly that works with your new audio option.

Kit Number	Kit Purpose
WVR7UP-SD	Field installs Option SD, which adds support for standard-definition video signal monitoring to the WVR7100.
WVR6UP-DS	Field installs Option DS, which adds support for Digital audio monitoring of embedded audio and audio signals in the AES/EBU inputs.
WVR7UP-DS	
WVR6UP-AD	Field installs Option AD, which adds support for Analog audio and Digital audio monitoring of embedded audio and audio signals in the AES/EBU inputs.
WVR7UP-AD	
WVR6UP-DD	Field installs Option DD, which adds support for Dolby Digital (AC-3) decode and Analog and Digital audio monitoring of embedded audio and audio signals in the AES/EBU inputs.
WVR7UP-DD	
WVR6UP-DDE	Field installs Option DDE, which adds support for Dolby E decode, Dolby Digital (AC-3) decode, and Analog and Digital audio monitoring of embedded audio and audio signals in the AES/EBU inputs.
WVR7UP-DDE	

Products

WVR6100 Waveform Rasterizer

WVR7100 Waveform Rasterizer

Minimum Tool and Equipment List

Required tools and equipment	Part number
Screwdriver handle. Accepts Torx-driver bits. General tool. Used for audio options only.	620-440
T-10 Torxdrive bit. Used for removing the rasterizer top cover. Used for audio options only.	640-235
T-15 Torxdrive bit. Used for removing most of the screws on the rasterizer. Used for audio options only.	640-245
3/16 Nutdriver. Used for removing and installing audio option boards for audio options only that have analog audio I/O connector.	460-210
1/4 Nutdriver. Used for removing or installing internal audio board mounting posts. Used for audio options only.	460-220
A standard PC running Windows 98, Windows NT 4.0, Windows ME, Windows 2000, or Windows XP. Used for installing all options.	NA
Winsock 2.0, an ethernet interface, and 10 MB of free disk space must be present on the PC system. Used for installing all options.	NA

Kits Parts List

WVR7UP-SD Kit

Quantity	Part number	Description
1 each	075-0887-XX	Kit instructions
1 each	020-2612-XX	Documents CD

WVR6UP-DS and WVR7UP-DS Kits

Quantity	Part number	Description
3 each	129-1570-XX	Post, Spacer; 1.385 X 0.250 X 0.375 Deep
1 each	174-4973-XX	Cable Assembly 80 POS. Cable With Two 2X40 Connectors
8 each	210-1039-XX	Washer, Lock; 0.521 ID; 0.025 Thick
3 each	211-0722-XX	Screw; 6-32 X 0.250, Panhead T-15 TORX Drive
8 each	220-0497-XX	Nut; Hex; 0.5-28 X 0.562
1 each	664-6072-XX	Circuit-board Assembly; Digital Audio
1 each	020-2612-XX	Documents CD
1 each	075-0887-XX	Kit instructions

**WVR6UP-AD and
WVR7UP-AD Kits**

Quantity	Part number	Description
3 each	129-1570-XX	Post, Spacer; 1.385 X 0.250 X 0.375 Deep
1 each	174-4973-XX	Cable Assembly 80 POS. Cable With Two 2X40 Connectors
8 each	210-1039-XX	Washer, Lock; 0.521 ID; 0.025 Thick
2 each	214-3903-XX	Screw; 4-40 X 0.312 Long, 0.188 H Hex Head Stand Off
3 each	211-0722-XX	Screw; 6-32 X 0.250, Panhead T-15 TORX Drive
8 each	220-0497-XX	Nut; Hex; 0.5-28 X 0.562
1 each	664-9938-XX	Circuit-board Assembly; Digital Analog Audio
1 each	020-2612-XX	Documents CD
1 each	075-0887-XX	Kit instructions

**WVR6UP-DD and
WVR7UP-DD Kits**

Quantity	Part number	Description
3 each	129-1570-XX	Post, Spacer; 1.385 X 0.250 X 0.375 Deep
1 each	174-4973-XX	Cable Assembly 80 POS. Cable With Two 2X40 Connectors
8 each	210-1039-XX	Washer, Lock; 0.521 ID; 0.025 Thick
2 each	214-3903-XX	Screw; 4-40 X 0.312 Long, 0.188 H Hex Head Stand Off
3 each	211-0722-XX	Screw; 6-32 X 0.250, Panhead T-15 TORX Drive
8 each	220-0497-XX	Nut; Hex; 0.5-28 X 0.562
1 each	664-9938-XX	Circuit-board Assembly; Digital Analog Audio
1 each	020-2612-XX	Documents CD
1 each	075-0887-XX	Kit instructions

**WVR6UP-DDE and
WVR7UP-DDE Kits**

Quantity	Part number	Description
3 each	129-1570-XX	Post, Spacer; 1.385 X 0.250 X 0.375 Deep
1 each	174-4973-XX	Cable Assembly 80 POS. Cable With Two 2X40 Connectors
8 each	210-1039-XX	Washer, Lock; 0.521 ID; 0.025 Thick

Kit Description

Quantity	Part number	Description
2 each	214-3903-XX	Screw; 4-40 X 0.312 Long, 0.188 H Hex Head Stand Off
3 each	211-0722-XX	Screw; 6-32 X 0.250, Panhead T-15 TORX Drive
8 each	220-0497-XX	Nut; Hex; 0.5-28 X 0.562
1 each	119-7167-XX	Circuit-board Assembly; Dolby E/Digital Decoder Module; 72 PIN SIMM
1 each	664-9938-XX	Circuit-board Assembly; Digital Analog Audio
1 each	020-2612-XX	Documents CD
1 each	075-0887-XX	Kit instructions

Installation Instructions

These instructions are for qualified personnel who are familiar with servicing the waveform rasterizer. If you need further details for disassembling or reassembling the product, refer to the appropriate product manual. Contact your nearest Tektronix Service Center or Tektronix Factory Service for installation assistance.



CAUTION. *To prevent static discharge damage, service the product only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.*

System Upgrade

All kits require upgrading the system software. The latest upgrade available can be found at www.tek.com (click on *Software and Drivers* and type *WVR* in the *Find by model number or keyword*).

As a convenience, this kit includes the install files for the latest version of system upgrade that was available at the time these instructions were released. Do the steps that follow to upgrade to the software version supplied by the kit. After upgrading, do the *Audio Board Installation* that follows this procedure.

1. Find the Documents CD included in the kit.
2. Insert the Documents CD in the CD drive of a PC running Windows that is networked to the instrument to be upgraded. The Documents Browser will start automatically; if it does not, click on the file *WVRDOCS.exe* on the CD.
3. Click on the title *Software Install* from the browser main menu.
4. Follow the instructions to upgrade the system software of your rasterizer.
5. Resume kit installation with the procedures that follow when you have completed the software update.

WVR7UP-DS Option Only

This option kit does not include or require installation of hardware; after installing the System Upgrade, skip to and do the *Option Activation* procedure on page 13.

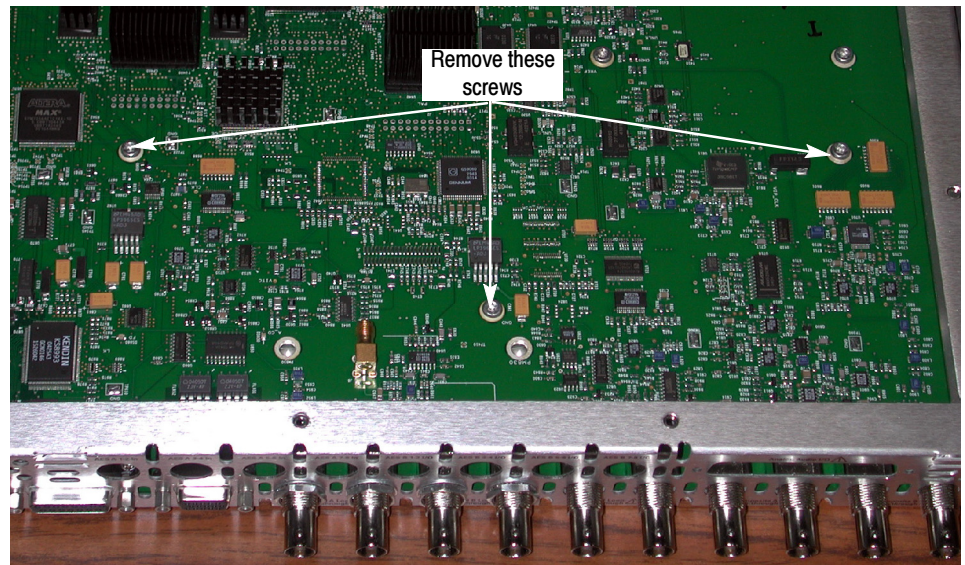
Audio Board Installation (Audio Options Only)

All audio options kits include, and require installation of, a new audio board:

1. Arrange access to the top of the rasterizer (remove from rack as needed).
2. Remove the 18 T-10 screws securing the cabinet top cover to its chassis and lift it off.
3. Inspect your rasterizer for presence of an existing audio board. If present, the audio board AES BNC connectors are present at the rear panel; instruments without an audio board have plug covers in place of the audio connectors.



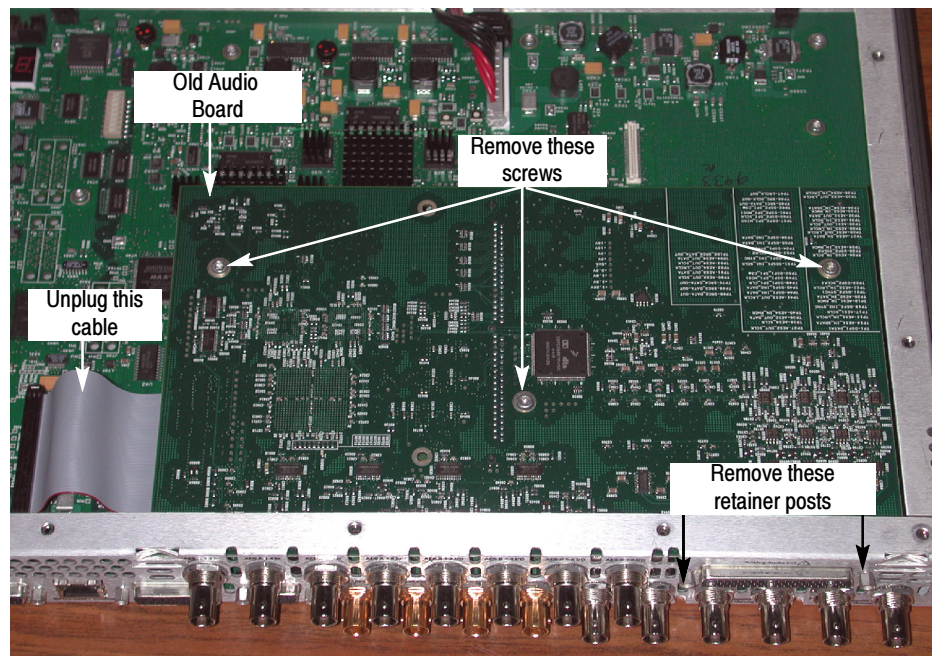
4. If an audio board is installed, do *Remove Old Audio Board*, and then continue with *Install Upgrade Audio Board* on page 10.
5. If your rasterizer *does not have* an audio board installed, do the following:
 - Remove the eight plugs from the AES inputs holes on the rear panel. To do so, pinch to compress each plug from the inside while prying it out from the outside of the rear panel. A screwdriver may help pry.
 - Remove the three mainboard mounting screws in locations shown.
 - Continue with *Install Upgrade Audio Board* on page 10.



Remove Old Audio Board

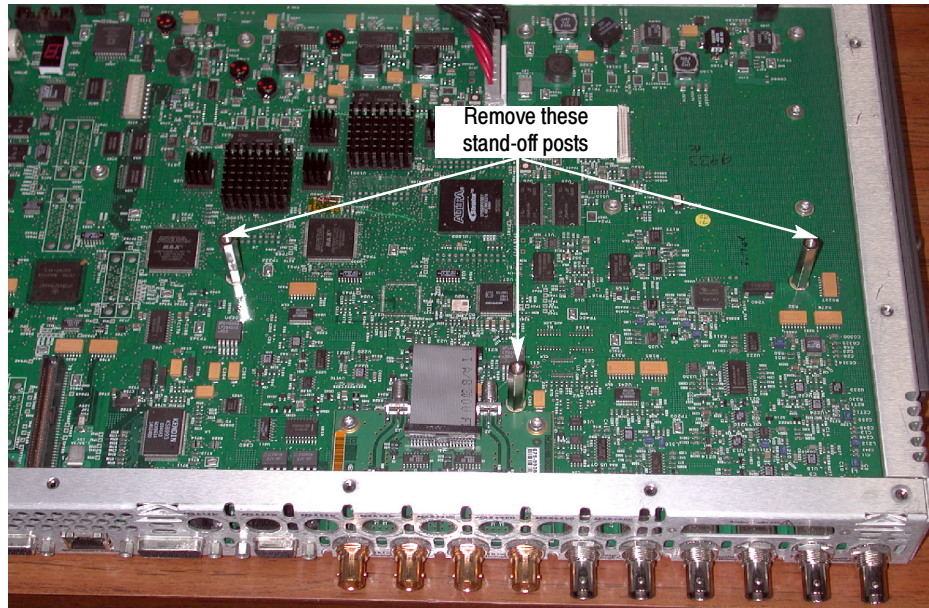
Do the following steps to remove the existing audio board in preparation for installing the kit audio board.

1. Unplug the cable from the audio board at J750 of the mainboard.
2. Remove the three screws (T-15) securing the old audio board to the three mounting posts. Screw locations are shown below.



3. Remove the nut and washers securing the eight audio BNC connectors to the rear panel.

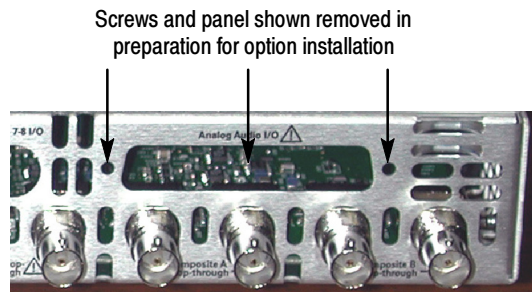
4. If an analog audio connector is present, use a 3/16 in. nut driver to remove the two retainer posts that secure it to the rear panel.
5. Back the old audio board until the connectors clear the rear panel and lift it out of the chassis.
6. Using a 1/4 in. nut driver, remove the three mounting posts from which you removed the screws in step 2.



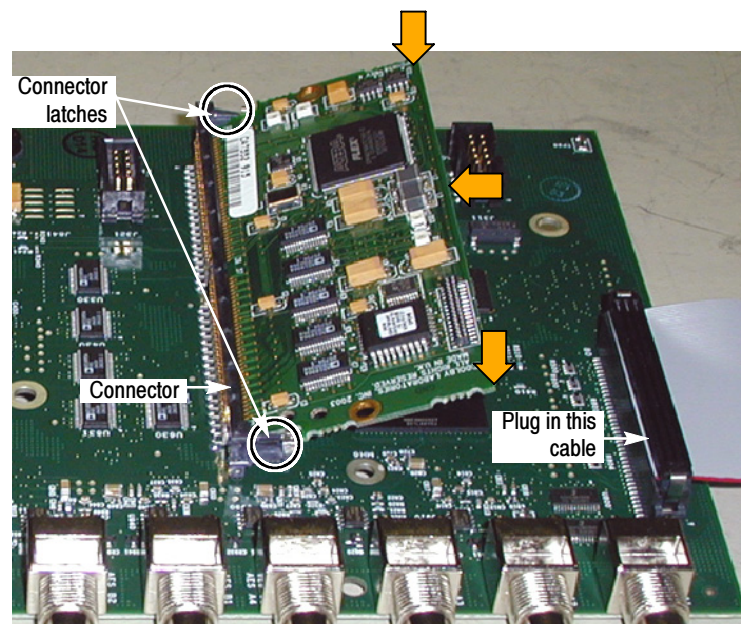
Install Upgrade Audio Board

Perform the following steps to install the new Audio board and to put it into service. *If installing option WVR6UP-DS or WVR7UP-DS, start with step 2; otherwise, start with step 1:*

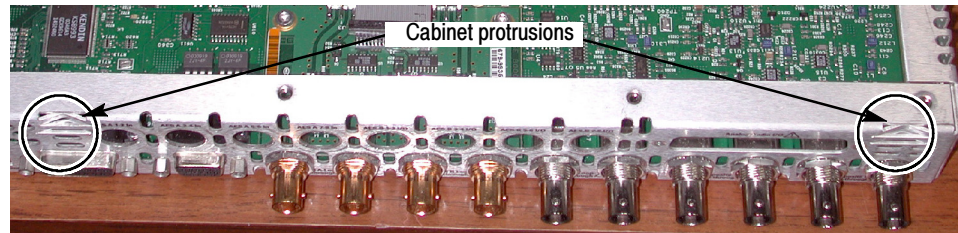
1. If a panel covers the analog audio input/connector hole at the rear panel, remove the two screws securing it, and remove the panel, pulling it away from the inside.



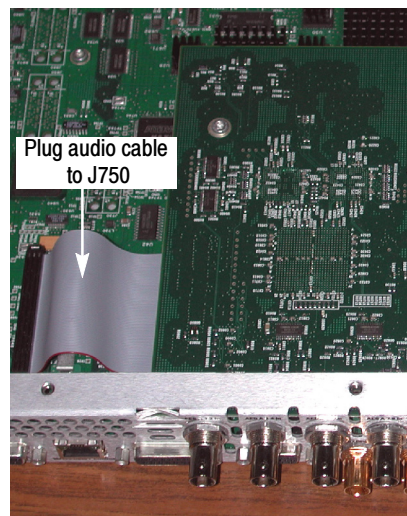
2. If installing *WVR6UP-DDE* or *WVR7UP-DDE*, do the following substeps; otherwise, skip to step 3.
 - a. Find the Dolby Module in your kit. In a static safe workstation only, remove it from the static protective container.
 - b. As shown in the following figure, push the module into the SIMM connector to seat it, and then push downward to rotate the module until it is parallel to the main board surface and the two connector latches are locked.



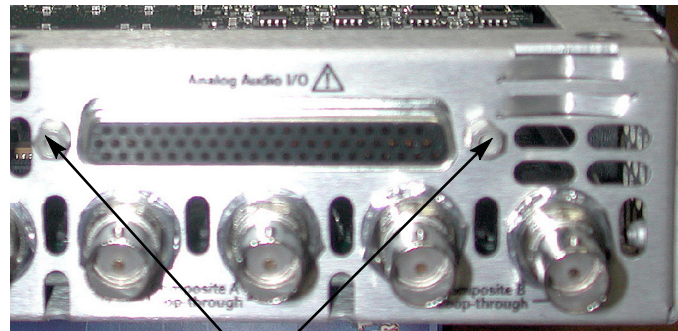
3. Plug the 80-pin cable from the new audio board into its jack on the underside of the mainboard board.
4. Install the three mounting posts from the kit in the locations from which you removed the mounting screws or the mounting posts earlier. The figure accompanying step 6 on page 10 indicates the post locations.
5. Insert the audio upgrade board from this kit into position, aligning the mounting holes with the mounting posts and guiding the audio board connectors into their holes in the rear panel:
 - The mounting holes in the audio board should align with the screw holes in the mounting posts.
 - When sliding the board into place, its rear-edge should be captured between a pair of small alignment features that protrude from the rear panel into the chassis. The board right-corner should be captured between an identical pair of alignment features at the chassis rear corner.



6. Secure the board to the three mounting posts with the three T-15 screws from the kit.
7. From the kit, install a washer, and then a nut, to each of the BNC connectors of the new board.
8. Plug the cable from the new audio board into J750 on the mainboard.



9. For all audio boards, other than options WVR6UP-DS and WVR7UP-DS, install the two standoff retainers that secure the audio analog connector to the rear panel. These screws install from the outside of the rear panel.



Install stand-off retainers

10. Reinstall the top cover.

Option Activation

WVR7UP-DS
WVR6UP-DD
WVR7UP-DD
WVR6UP-DDE
WVR7UP-DDE

For these options only, you must activate the option before you can use it. To do so, follow this procedure:

NOTE. This kit provides an option key based on the rasterizer serial number that you provided to Tektronix when you ordered this kit. The kit option key will enable your new option(s) only on the rasterizer having the serial number that you provided.

1. Make sure that the product to be activated is networked to a computer. See your *Quick Start User Manual* if you need help in doing so.
2. Start the Web browser, and set its address to that of the rasterizer to navigate to the Remote Interface page. See *Remote Communications* in your *Quick Start User Manual* if you need help in doing so. (You can access this manual on the kit Documents CD.)
3. Click on the *Instrument Options* to navigate to the *Active Options* page, and enter the key supplied with your kit.
4. Click the *Submit* button.

A pop-up message will follow a successful upgrade, and the *Active Options* page should reflect the newly installed option, along with those already present (refreshing the page may be required).

5. Skip to *Usage* below for information on using your upgrade.

WVR6UP-DS
WVR7UP-DS
WVR6UP-AD
WVR7UP-AD

For these options only, no activation is required, and your audio upgrade is complete. Your instrument will automatically detect the upgrade and you can use the audio features that it provides.

Usage

To use your upgraded instrument, note that the following support is available:

- The System Upgrade you performed installed the current online help which supports all current audio options.
- The Documents CD provides a PDF copy of the updated *Quick Start User Manual* and other documents that support all currently available audio options. You can access these documents using the Documents Browser on the CD or you can navigate to the PDF and print them.
- The latest version of both the product software and the documents are available at Tektronix.com

❏ **End of document** ❏