

**RSA5UP Option 55
RSA5100A Series Real-Time Signal Analyzers
Digital I and Q Output Upgrade
Instructions**

www.tektronix.com



071-2880-00

Tektronix

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Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* located in the *RSA5100A Series Real-Time Signal Analyzers Service Manual* before performing any service procedures.

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

This kit describes the installation of a Digital I and Q Output (Option 55) in an RSA5100A Series Real-Time Signal Analyzer.

Products

RSA5100A Series. All serial numbers

Kit Parts List

Quantity	Part number	Description
1 ea	071-2880-XX	MANUAL, TECH INSTALLATION, RSA5UP OPTION 55
2 ea	174-5106-XX	CA ASSY, SP; IDC, TW FLAT, I & Q OUTPUT TO REAR PANEL, 50 POS; SAFETY CONTROLLED; RSA51XXA OPTION 55
2 ea	174-5195-XX	CABLE ASSY ELEC: 50P MDR CONN, 1.5M L, 18 TWIST PAIR, 100 OHM, 1 I/O, 13 GND, W/SHIELD, W/LABEL
1 ea	174-5213-XX	CABLE ASSY, RIBBON; STATIC GROUND, 1X2, RT I/Q TO REAR PANEL; LANCER; SAFETY CONTROLLED
1 ea	200-5195-XX	COVER, REAR PANEL, RSA5X OPTION (I AND Q OUT, IF OUT)
4 ea	211-0450-XX	SCREW, MACHINE; 2.5MM X 0.45 X 6MM, PNH, STEEL, ZINC PLATED, T8 TORX DRIVE
8 ea	211-1050-XX	SCREW, MACHINE; 6-32 X 0.312 L, PNH, STEEL, ZINC FINISH, T15
1 ea	664-5898-XX	CIRCUIT BD ASSY; REALTIME I/Q OUTPUT, FUNCTIONAL BOARD TESTED LEVEL, 679589800, 389367200, WIRED
1 ea	NS ¹	DATA SHEET; SOFTWARE OPTION KEY AUTHORIZATION CERTIFICATE, UPGRADE KITS
1 ea	NS ¹	LABEL, MANUFACTURED; OPTION KEY UPGRADE LABEL 2.100 X 2.700, SAFETY CONTROLLED

¹ NS — Not saleable

Installation Instructions

This section contains all procedures needed to install the Digital I and Q Output option (Option 55) in RSA5100A Series instruments.

Minimum Tool and Equipment List

The following tools are required to remove and install the instrument covers and panels. All tools are standard tools that should be readily available.

Item	Name	Description
1	Screwdriver handle (magnetic)	Torque driver. Accepts 14 inch hex-head driver tips
2	No. 2 Phillips or Pozidriv tip	Phillips or Pozidriv-driver tip for number 2 size screw heads
3	T15 TORX tip	TORX driver tip for T-15 size screw heads
4	T20 TORX tip	TORX driver tip for T-20 size screw heads
5	5/32" hex wrench	Hex wrench to remove Allen head screws at front of top cover

These instructions are for qualified service personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the the *RSA5100A Series Real-Time Signal Analyzers Service Manual*, Tektronix part number 077-0522-XX.

Remove Cosmetic Covers

NOTE. *Right-side or left-side references in these instructions assume you are viewing the instrument from the front panel.*



WARNING. *To avoid electric shock, switch off the instrument power, then disconnect the power cord from the mains power. Failure to do so can cause injury or death.*

1. Remove the power cord.
2. If it is installed, pull the front cover off the instrument.

3. Remove the two T15 screws that secure the plastic carrying handle to the side of the instrument. (It is not necessary to remove the black metal handles.) (See Figure 1.)
4. Remove four T15 black screws along each side that secure the top and bottom covers to the instrument, and two T20 Torx-head screws near the front edge of the top cover (next to the folding handles).
5. Remove the top and bottom covers. Remove the top cover by pulling straight back about 1 inch. Then pull out on the sides of the top cover outward, flexing them slightly to clear the instrument chassis, and pull it away from the instrument.

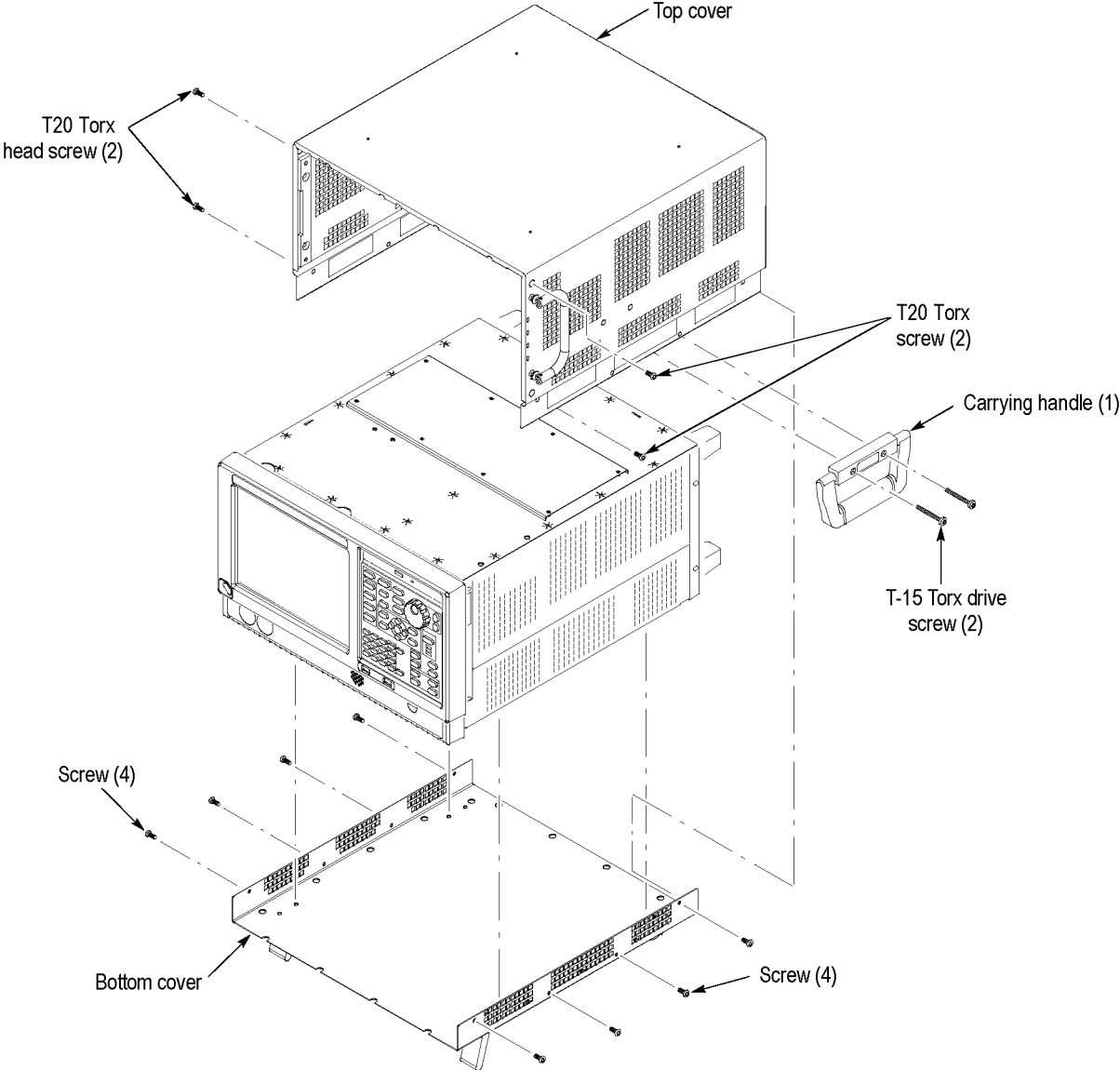


Figure 1: Remove cosmetic covers

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Install RTIQ Board

1. Remove the 18 T15 screws that secure the internal top cover to the chassis, and then lift the internal top cover away.
2. Install the Option 55 (RTIQ) board into Slot 3 (counting from the rear of the instrument). (See Figure 2.)



CAUTION. Be careful not to bend the pins on the Digital Interface Board when installing the RTIQ board.

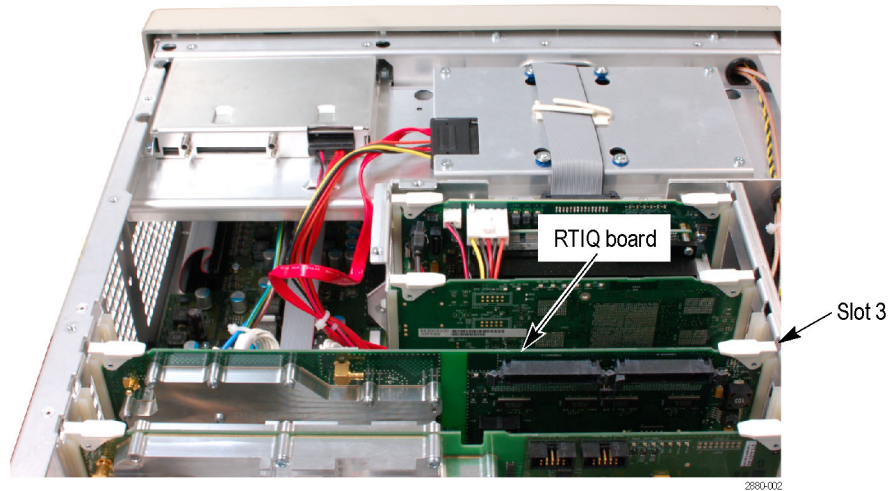


Figure 2: Installing the RTIQ board

Install Rear Panel Connectors

1. Remove the blank, rear-panel cover from the chassis (attached with eight screws). Discard the blank panel.
2. Install the two IQ Output cables (Tektronix part number 174-5106-XX) on the rear panel cover (Tektronix part number 200-5195-XX) using four screws

(Tektronix part number 211-0450-XX) provided in the kit. Tighten the screws using a torque driver set to 5.5 in-lb. (See Figure 3.)

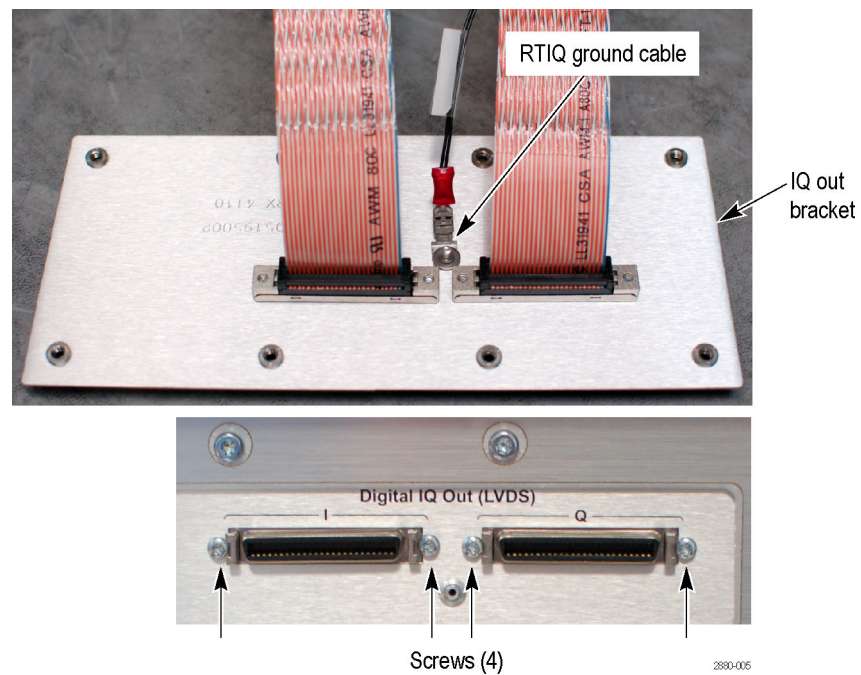


Figure 3: Securing the output cables to the rear panel cover

3. Install the RTIQ Ground cable (Tektronix part number 174-5132-XX) onto the spade connector on the rear panel cover.

Install Rear Panel Cover Onto Rear Panel

1. Install the rear panel cover with attached cabling on the rear panel using eight T15 screws (Tektronix part number 211-1050-XX). Torque these screws to 10.0 in/lb. (See Figure 4.)

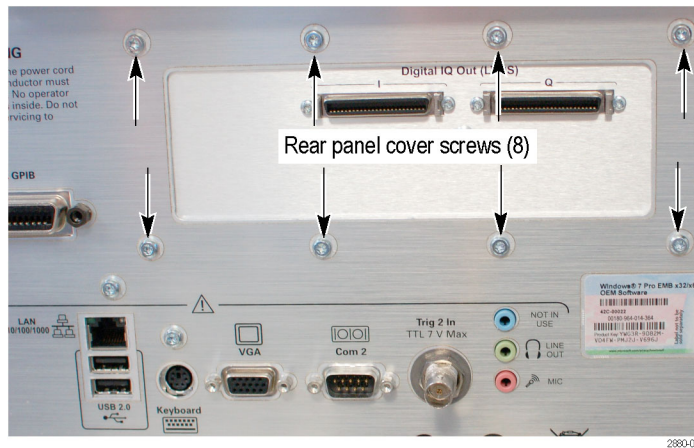


Figure 4: Installing the rear panel cover on the rear panel of the chassis

Connect Rear Panel Cables

1. Use the board ejectors to lift the RTIQ board up out of its slot. Connect the 2-wire RTIQ ground cable from the rear-panel spade connector to J20 on the RTIQ board. Gently pull on the cable to ensure the locking tabs are engaged. (See Figure 5.)

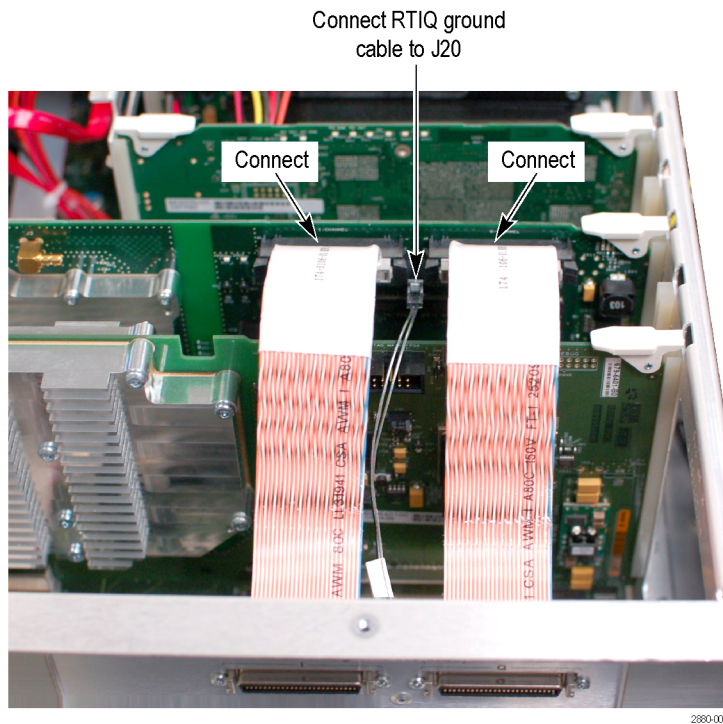


Figure 5: Connecting the output cables

3. Connect the IQ output cables as shown. (See Figure 5.)
4. Push the RTIQ board back into the Digital Interface board so that it is fully seated. Be careful not to bend the pins on the Digital Interface board.
5. Reinstall the top internal cover.
 - a. Place the top internal cover onto the instrument, aligning the two protrusions on the cover with the two slots in the chassis.
 - b. Replace the 18 T15 screws that secure the top internal cover to the chassis. Torque these screws to 8.0 in/lb.

Reinstall Cosmetic Covers

1. Reinstall the top and bottom covers.
 - a. Place the instrument on its rear feet, so the front panel is facing up and the top is towards you.
 - b. Place the top cover over the top of the instrument and slide it toward the front panel. Make sure that the top cover wraps around the flanges on the rear panel on all three sides.
 - c. Reinstall the four T20 Torx-head screws (two on each side) near the front edge of the top cover (next to the folding handles) that secure the top cover to the instrument.
 - d. Rotate the instrument so the bottom faces you.
 - e. Place the bottom cover on the instrument, with the flip feet towards the front.
 - f. Align the four screw holes on each side in the top and bottom covers with the holes in the chassis, and install eight T15 screws, four on each side. Torque these screws to 8.0 in/lb.
 - g. Position the plastic carrying handle and its bracket on the right side of the instrument, and install the two T15 screws that secure it in place. Torque these screws to 8.0 in/lb.

Install Option Key

To activate the Option 55 Digital I and Q Output option, you must enter a new option key.

1. Power on the analyzer.

NOTE. *When the analyzer application launches, it will display an error message indicating that the current option key does not support the new option hardware. Click OK to clear the error message.*

2. In the signal analyzer application, select **Tools > Install Upgrades** . The Install Upgrade wizard starts. (See Figure 6.) Click Continue.

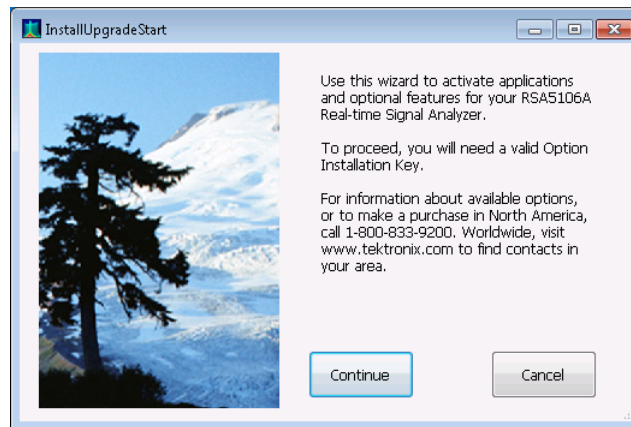


Figure 6: Starting the option upgrade

3. The Install Upgrade Enter Key screen appears as shown.

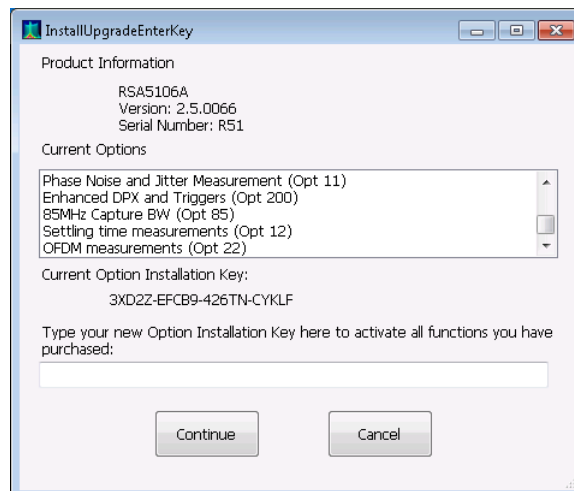


Figure 7: Entering the option installation key

4. Type the option installation key into the empty text box and click **Continue**. An Installation Success dialog box appears after you click Continue.
5. Click **Close**. Exit and restart the RSA5100A application to enable the new feature.
6. Select **Help > About Tektronix Real Time Signal Analyzer**.
7. Look in the **Installed Options** listing and verify that **Signal Output Package (Opt 55)** appears in the listing.
8. Click **OK**.

Installing the Option Key Label

Place the new option key label over the existing label on the instrument rear panel.

This completes the installation of the Option 55 Digital I and Q Output upgrade kit.

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