

Instructions



RSA6100A Series Real-Time Spectrum Analyzers Digital IQ Output and 500 MHz Analog IF Output (Option 05) Upgrade

071-1918-01

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* located in the *RSA6100A Service* manual (Tektronix part number 071-1914-xx) 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 IQ Output and 500 MHz Analog IF Output (Option 05) in an RSA6100A Series Real-Time Spectrum Analyzer.

Products

RSA6100A Series All serial numbers

Kit Parts List

Quantity	Part number	Description
1 ea	071-1918-01	MANUAL,TECH:INSTALLATION,RSA6UP, OPT05
1 ea	174-5084-XX	CA ASSY, RF, FLEX-COAX; UPPER DECK BULKHEAD SMB TO PLUG-IN CARDS; SAFETY CONTROLLED
1 ea	174-5093-XX	CA ASSY, RF, FLEX-COAX; 3RD IF 500MHZ TO RT I/Q & IF OUT; SAFETY CONTROLLED
1 ea	174-5104-XX	CA ASSY, RF, FLEX-COAX; IF OUT TO REAR PANEL, SMB, BNC; SAFETY CONTROLLED
2 ea	174-5106-XX	CA ASSY, SP; IDC, TW FLAT, I & Q OUTPUT TO REAR PANEL, 50 POS; SAFETY CONTROLLED
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	200-4962-XX	COVER; REAR PANEL, OPTION (I&Q OUT, IF OUT); SAFETY CONTROLLED
4 ea	211-0450-XX	SCREW, MACHINE; 2.5MM X 0.45 X 6MM, PNH POZ DR, 410 SS PASSIVATED, PHILIPS
8 ea	211-1050-XX	SCREW, MACHINE; 6-32 X 0.312 L, PNH, 410 SS PASSIVATED, T15
1 ea	664-5898-XX	CIRCUIT BD ASSY; REALTIME I/Q OUTPUT, FUNCTIONAL BOARD TESTED LEVEL

Installation Instructions

This section contains all procedures needed to install the Digital IQ output and Analog IF output option (Option 05) in RSA6100A Series instruments.

Minimum Tool and Equipment List

The following tools are required to remove the instrument covers, and remove and install semi-rigid cables. All tools are standard tools that should be readily available.

Table 1: Tools required for Option 05 installation

Item no.	Name	Description
1	Screwdriver handle (magnetic)	Torque driver. Accepts $\frac{1}{4}$ inch hex-head driver tips
2	No. 2 Phillips or Pozidriv tip	Phillips or Pozidriv-driver tip for number 2 size screw heads
3	T-15 TORX tip	TORX driver tip for T-15 size screw heads
4	T-20 TORX tip	TORX driver tip for T-20 size screw heads
5	$\frac{5}{16}$ " wrench	Open end torque wrench (10 in/lb) to remove and install semi-rigid cables
6	$\frac{5}{32}$ " 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 product service manual, Tektronix part number 071-1914-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 T-15 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 T-15 screws along each side that secure the top and bottom covers to the instrument, and two 5/32 Allen 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.
6. Turn the instrument over so it is resting on its top side.
7. Remove the three T-15 screws that secure the lower trim panel to the chassis, and lift the lower trim panel from the instrument.

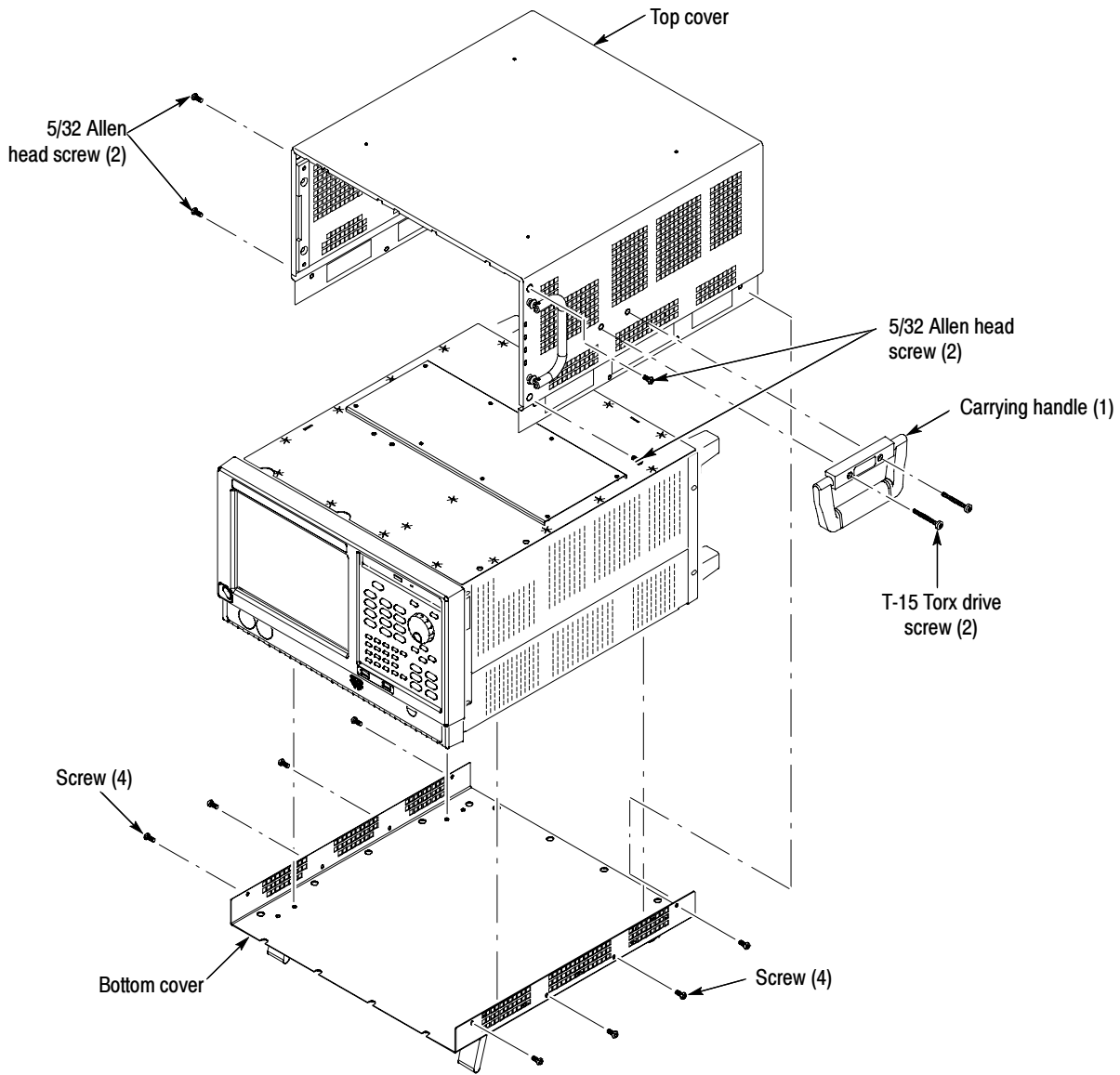


Figure 1: Remove cosmetic covers

Install RF Deck Cable

1. Remove the 18 T-15 screws that secure the internal bottom cover to the chassis, and then lift the bottom cover away.
2. Remove the termination from the **500 MHz OUT** connector on the 3rd Converter assembly (see Figure 2).

3. Connect the 3rd IF 500 MHz to RT I/Q cable (Tektronix part number 174-5093-XX) from the **500 MHz OUT** connector on the 3rd Converter assembly to the connector just past the bulkhead toward the front of the instrument.

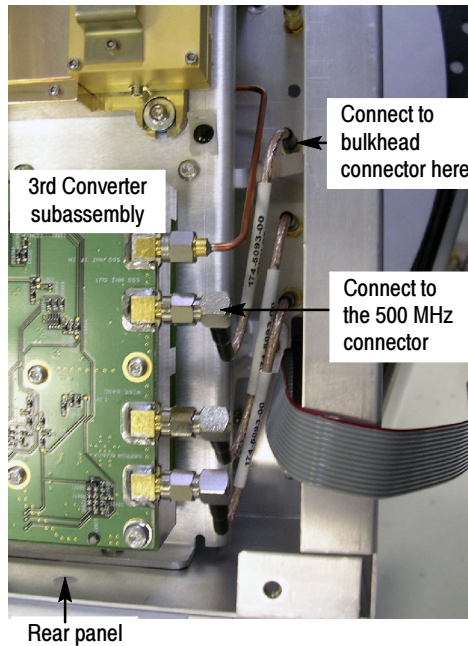


Figure 2: Attaching the cable to the 3rd Converter subassembly

4. Reinstall the internal bottom cover:
 - a. Place the internal bottom cover on the instrument, aligning the two protrusions on the shield with the two slots in the chassis.
 - b. Replace the 18 T-15 screws that secure the internal bottom cover to the instrument. Torque these screws to 8 in/lb.
5. Replace the lower trim panel. Tighten the three T-15 screws to 8.0 in/lb.
6. Turn the instrument over so it is resting on its bottom side.

Install RTIQ Board

1. Remove the 18 T-15 screws that secure the internal top cover to the chassis, and then lift the internal top cover away.

2. Install the RTIQ board into Slot 3 (counting from the rear of the instrument) as shown in Figure 3. Be careful not to bend the pins on the Digital Interface Board.

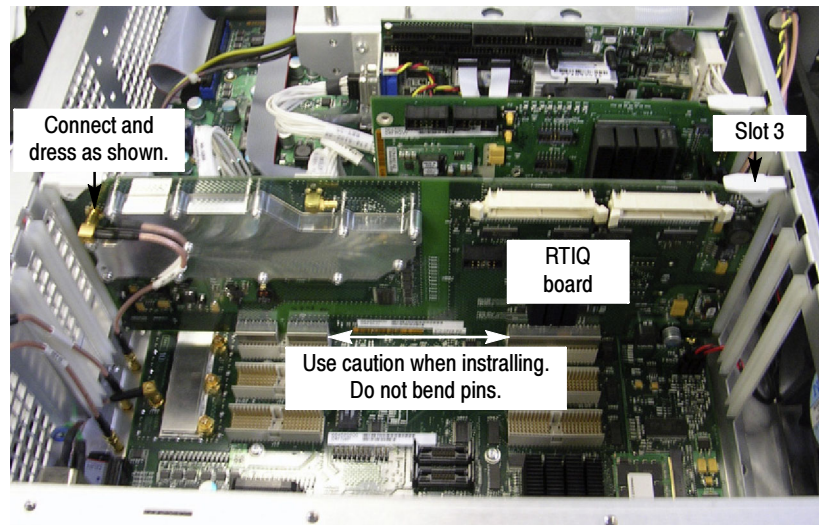


Figure 3: Installing RTIQ board

3. Connect the 175-05084-XX cable assembly, provided in the kit, between the bulkhead connector and connector on the RTIQ board as shown in Figure 3. Be sure to dress the cable as shown in the illustration.

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 200-4962-XX) using four screws (Tektronix part number 211-0450-XX) provided in the kit. Tighten the screws using a torque driver set to 3.0 in-lb. See Figure 4.

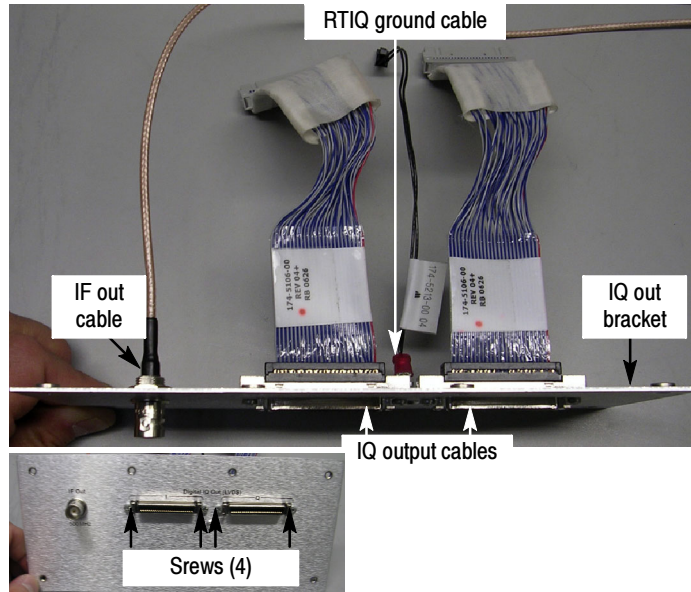


Figure 4: Connecting cables to the rear panel cover

3. Install the IF Out BNC cable (Tektronix part number 174-5104-XX) on the rear panel cover with the supplied nut and washer. Tighten the $\frac{1}{2}$ " nut using a torque wrench set to 9.0 in/lb.
4. Install the RTIQ Ground cable (Tektronix part number 174-5132-XX) onto the spade 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 T-15 screws (Tektronix part number 211-1050-XX). Torque these screws to 8.0 in/lb. See Figure 5.

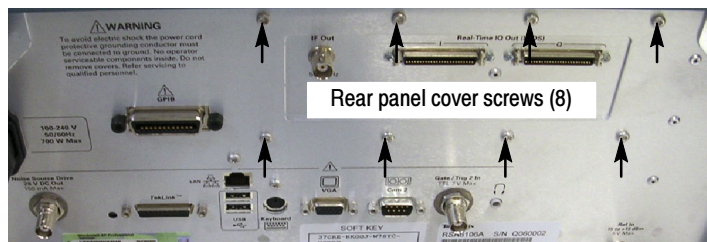


Figure 5: Installing the rear panel cover on the chassis

Connect Rear Panel Cables

1. Use the board ejectors to lift the RTIQ board up out of its slot. Route the IF Output cable around the side and back in between Slots 2 and 3, then connect to the SMB connector on the RTIQ Board (see Figure 6). Connect the ground cable to the 2-pin connector on the RTIQ Board as shown in Figure 6.

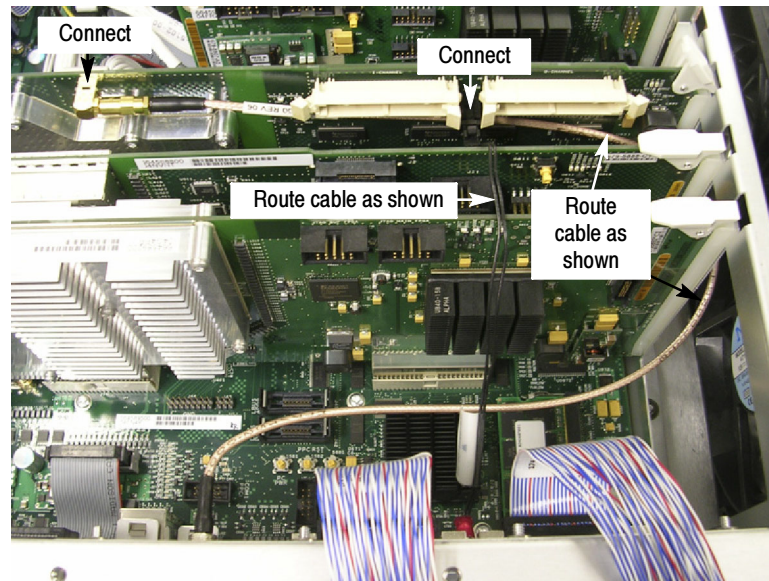


Figure 6: Connecting IF Output and ground cables to the RTIQ board

2. Connect the IQ output cables as shown in Figure 7.

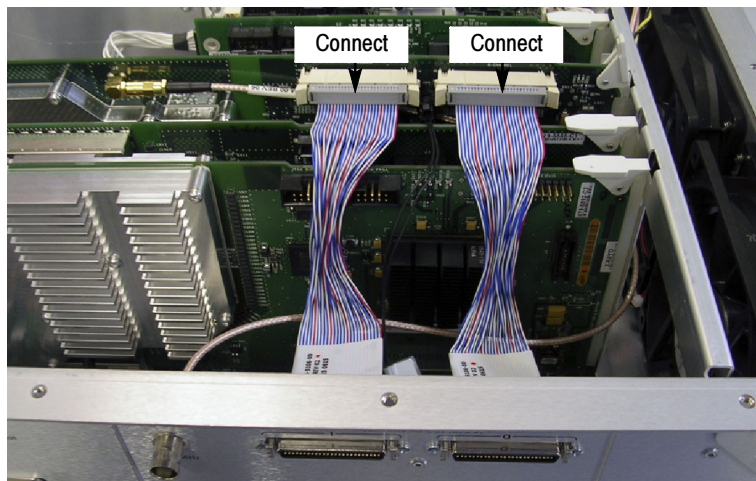


Figure 7: Connecting the IQ Output cables

3. 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.
4. 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 T-15 screws that secure the top internal cover to the chassis. Torque these screws to 8.0 in/lb.

Reinstall Cosmetic Covers

5. 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 $\frac{5}{32}$ " Allen 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 T-15 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 T-15 screws that secure it in place. Torque these screws to 8.0 in/lb.

Install Option Key

1. Power on the instrument.
2. In the spectrum analyzer application, select **Tools > Install Upgrades**. See Figure 8.

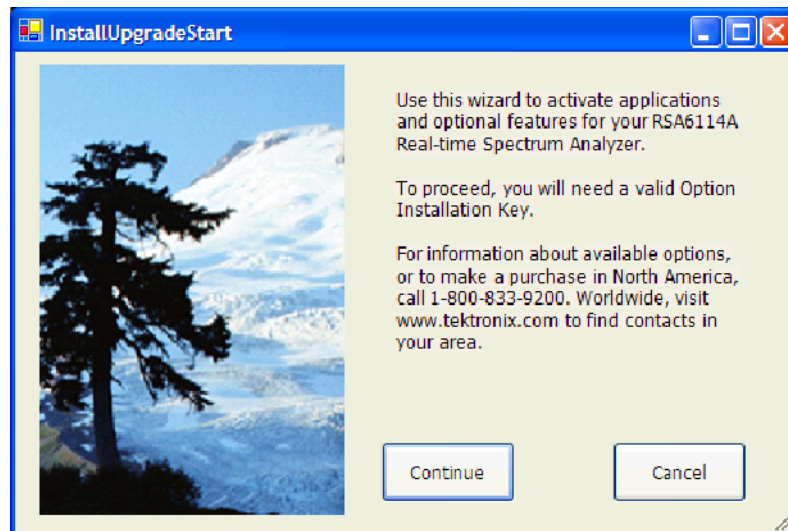


Figure 8: Starting the option upgrade

3. Type the option installation key into the empty text box and click **Continue**. See Figure 9.

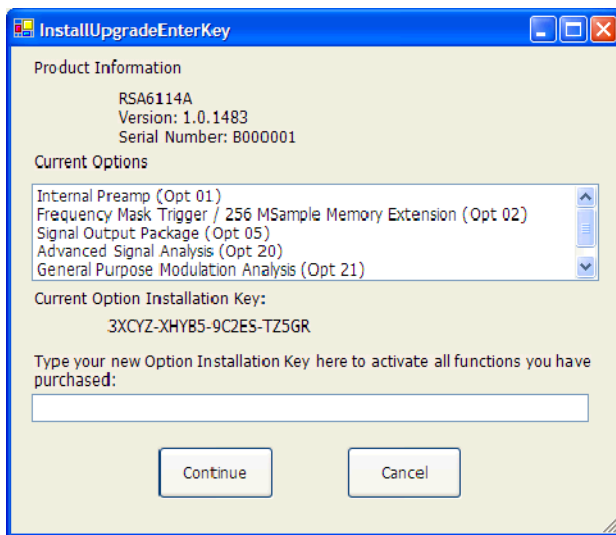


Figure 9: Entering the option installation key

This completes the installation of the new option key.

Install New 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 05 Digital IQ Output and 500 MHz Analog IF Output upgrade.

❏ **End of document** ❏