

**TLA5Fxxx, TLA6Fxx, & TLA7Fxxx PowerFlex™ Field  
Upgrade Kit Logic Analyzers  
Instructions**

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- Worldwide, visit [www.tektronix.com](http://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.

**Use Proper Voltage Setting.** Before applying power, ensure that the line selector is in the proper position for the source being used.

**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.

**Ground the Product.** This product is indirectly grounded through the grounding conductor of the mainframe 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.

The inputs are not rated for connection to mains or Category II, III, or IV circuits.

Connect the probe reference lead to earth ground only.

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.

**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:



CAUTION  
Refer to Manual



WARNING  
High Voltage



Protective Ground  
(Earth) Terminal



Earth Terminal



Chassis Ground



Mains Disconnected  
OFF (Power)



Mains Connected  
ON (Power)



Standby

## Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* 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.



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# PowerFlex Upgrade Instructions

These instructions describe how to upgrade your Tektronix logic analyzer or pattern generator module with the upgrade kit that you purchased from Tektronix. The instructions also provide steps to attach the labels to your Tektronix instrument to indicate that your upgrade kit has been installed.

## Instruments

TLA700 & TLA7000 Logic Analyzer Modules	All models supported
TLA5000 Logic Analyzers	All models supported
TLA7PG2 Pattern Generator Modules	All models supported
TLA600 Logic Analyzers	All models supported

## Minimum Tool and Equipment List

No special tools are required to install the upgrades. However, your logic analyzer mainframe should contain the TLA application software V3.2 or higher.

## Kit Contents

Your PowerFlex upgrade kit contains the following:

- Tektronix Upgrade Key Certificate
- Lexan configuration labels (not required for all TLA products)
- Upgrade kit label
- Envelope for labels and certificate
- These instructions

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**NOTE.** *The upgrade kit will work on one instrument only! Each upgrade kit is made for a specific logic analyzer module, pattern generator module, TLA600 or TLA5000 series logic analyzer. Make sure that you have the correct upgrade kit for your instrument.*

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## Install the Upgrade on Your Instrument

Complete the following steps to install the upgrade on your instrument. These instructions assume that your instrument is installed in the same mainframe where the PowerFlex Utility is installed.

1. If you have not already done so, power on your logic analyzer.
2. Exit the TLA and Pattern Generator (if running) applications.

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**NOTE.** You must exit the TLA and pattern generator applications before you start the PowerFlex Utility. You cannot run the PowerFlex Utility and the TLA or pattern generator application at the same time.

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3. From the Start menu, select All Programs > Tektronix Logic Analyzer > TLA PowerFlex Utility.
4. In the PowerFlex window select the instrument using the Frame and Slot Number drop-down lists. Verify that the current configuration for your instrument is correct. (See Figure 1.)

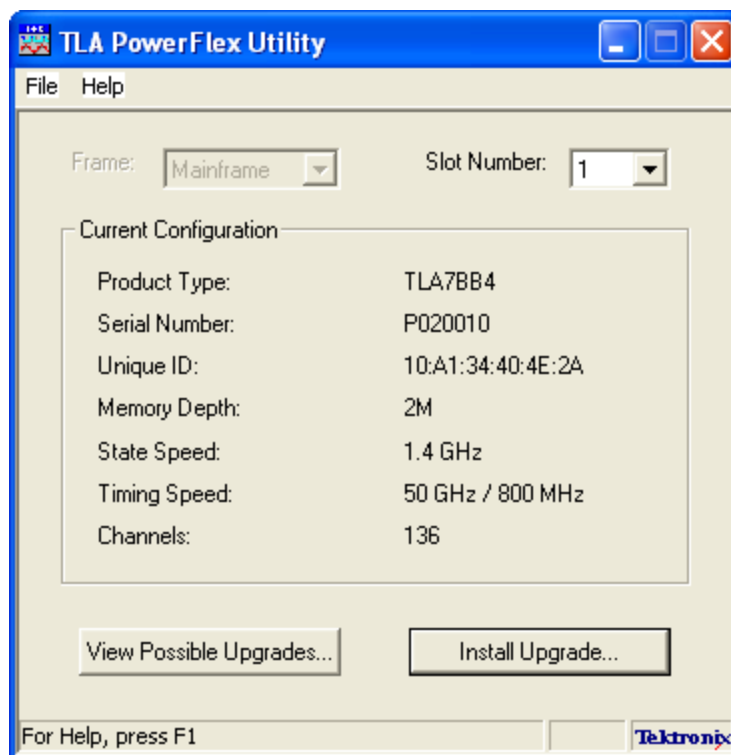
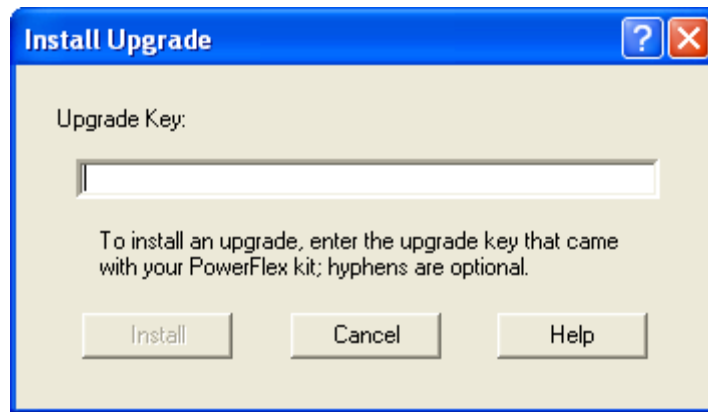


Figure 1: PowerFlex Utility

5. Click the Install Upgrade button in the PowerFlex window. The Install Upgrade dialog box appears. (See Figure 2.)



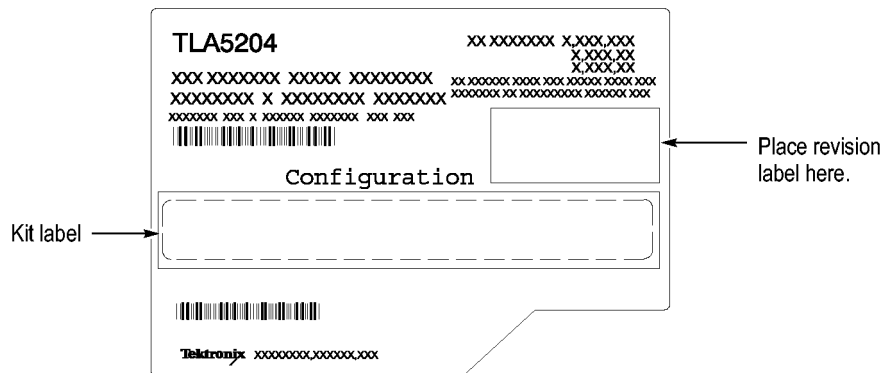
**Figure 2: Install Upgrade dialog box**

6. Enter the upgrade key recorded on the Tektronix Upgrade Key Certificate; hyphens are optional.
7. Click the Install button. The PowerFlex utility will install the upgrade and display a message indicating that the upgrade was successful.
8. Click OK to dismiss the message. The updated configuration information will appear in the PowerFlex window.
9. Exit the PowerFlex Utility.

## Attaching Labels on the TLA600 or TLA5000 Logic Analyzers

After you install the upgrade kit on your TLA600 or TLA5000 logic analyzer, you must install the upgrade label on the rear of the instrument to indicate that the upgrade kit is installed.

1. Locate the big label on the rear of the instrument; it should look similar to the label in the following illustration.



**Figure 3: TLA600 series logic analyzer label. TLA5000 label looks similar**

2. Locate the PowerFlex option label from the label sheet that you received with this kit. Peel the label from the sheet and affix it to the Kit label location. (See Figure 3.)

## Attaching Labels on the Logic Analyzer and Pattern Generator Modules

After you install the upgrade kit on your TLA700 series logic analyzer module or pattern generator module, you must attach labels on the instrument indicating that the upgrade kit is installed. There are two types of labels that you must attach on your instrument.

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**NOTE.** For TLA7NAx and TLA7Bxx modules you only need to install the PowerFlex kit label. There is no Lexan label for the current configuration on TLA7NAx and TLA7Bxx modules.

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- Lexan label. This label is located on the front of the module and lists the current configuration. (See Figure 5 on page 6.)
- PowerFlex kit label. This label is located on the side of the module; it lists the current PowerFlex option and the upgrade key. (See Figure 4 on page 5.)

**Service and Upgrade Notes**

To prevent personal injury or damage to the instrument, adhere to the following requirements before servicing the TLA700 series instruments:

- Read the General Safety Summary and the Service Safety Summary found at the beginning of this document.
- Only qualified service personnel should perform the procedures in the remaining sections of this document.
- Observe all warnings, notes, and cautions in the following sections.

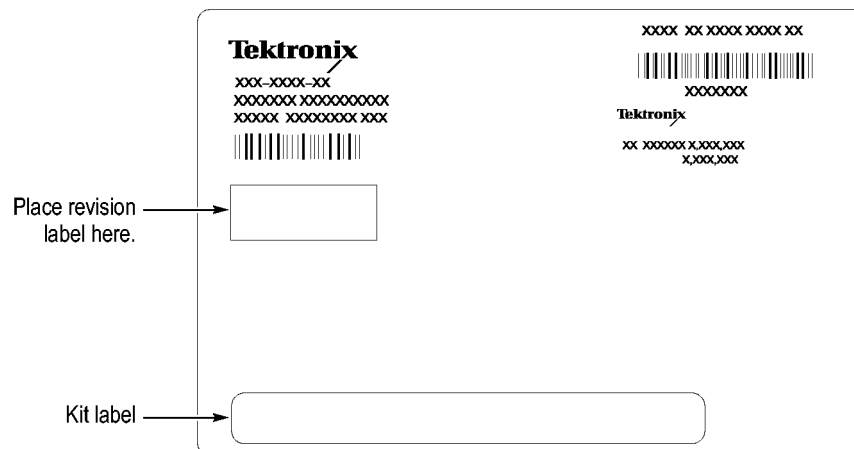
**TLA700 Logic Analyzer Modules**

Use the following instructions to install the labels on the TLA700 series logic analyzer modules:



**CAUTION.** Do not remove the logic analyzer module while the mainframe is powered on. Always power down the mainframe and disconnect the power cord before removing any installed modules. Failure to do so, can damage the module or the mainframe.

1. Power down the mainframe and disconnect the power cord.
2. Loosen the four retaining screws on the corners of the front panel that secure the module to the mainframe.
3. Remove the module from the mainframe.
4. Locate the big label on the side of the logic analyzer module. (See Figure 4.)

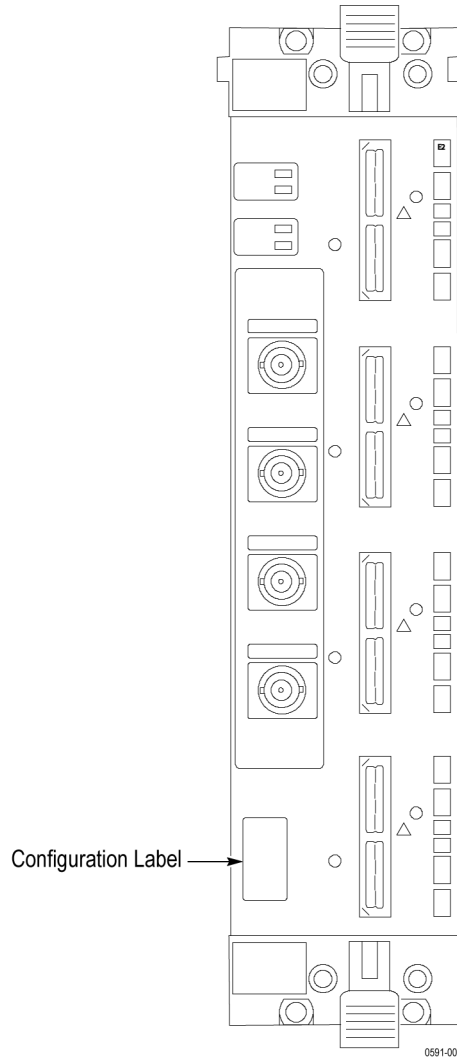


**Figure 4: TLA700 series logic analyzer module label**

5. Note the location of the long label. (See Figure 4.) Depending on your instrument, this could be a label inside a rectangle or a string of text.
6. Locate the PowerFlex option label from the label sheet that you received with this kit. Peel the label from the sheet and affix it to the location indicated.

(See Figure 4.) For TLA7NAx or TLA7Bxx modules, skip to Step 11 after you have completed Step 6.

7. Locate the small lexan configuration label on the front panel of the module. The following figure shows a TLA7Axx series logic analyzer module. The configuration label location is similar for other logic analyzer modules.



**Figure 5: Configuration label location on TLA logic analyzer modules**

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**NOTE.** Remove the old configuration label before attaching the new label.

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8. Carefully remove the old configuration label.
9. Locate the new configuration label from the sheet of labels that you received with this kit. If necessary, refer to the big label to determine the correct label.

10. Affix the new configuration label in the hole from where you just removed the older label.
11. Reinstall the module in the mainframe.
12. Use a screwdriver to tighten the four retaining screws to 2.5 in-lbs after seating the module in place.
13. Reconnect the power cord to the mainframe.

### TLA7PG2 Pattern Generator Modules

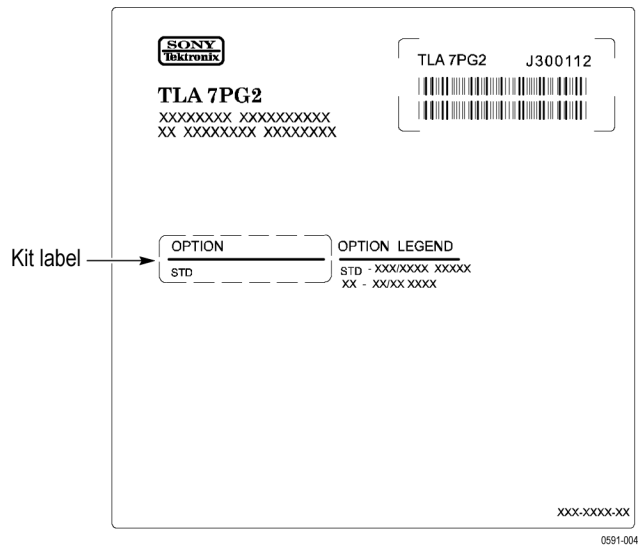
Use the following instructions to install the labels on the TLA7PG2 Pattern Generator modules:



**CAUTION.** *Do not remove the pattern generator module while the mainframe is powered on. Failure to do so can damage the module or the mainframe. Always power down the mainframe and disconnect the power cord before removing any installed modules.*

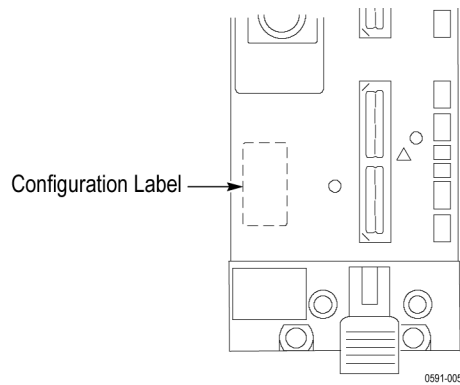
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1. Power down the mainframe and disconnect the power cord.
2. Loosen the four retaining screws on the corners of the front panel that secure the module to the mainframe.
3. Remove the module from the mainframe.
4. Locate the label on the side of the instrument; it looks similar to the label in Figure 6.
5. Note the location of the option information on the center of the label.
6. Locate the PowerFlex option label from the label sheet that you received with this kit. Peel the label from the sheet and affix it to the Kit label location on the big label. (See Figure 6.)
7. Locate the new configuration label that you received with this kit.



**Figure 6: TLA7PG2 Pattern Generator module label**

8. Affix the new configuration label over the old label near the bottom of the front panel. (See Figure 7.)



**Figure 7: Configuration label location on pattern generator modules**

9. Reinstall the module in the mainframe.
10. Use a screwdriver to tighten the four retaining screws to 2.5 in-lbs after seating the module in place.
11. Reconnect the power cord to the mainframe.



## Troubleshooting

Refer to this section if you have problems installing the upgrade. Below is a list of possible problems or error messages that you may encounter and the recommended solutions.

If these suggestions do not address your problem, contact Tektronix for help. Refer to Contacting Tektronix information listed at the beginning of this manual.

**Table 1: PowerFlex Utility problems and solutions**

<b>Problem or error message</b>	<b>Possible solution</b>
PowerFlex Utility will not start.	The TLA or pattern generator applications are running on the mainframe. Exit these applications before trying to run the PowerFlex Utility.
Error: Invalid Upgrade Key. Upgrade failed. Possible typing error.	Try reentering the upgrade key. Make sure that you have the correct upgrade key for the module or instrument.
Error: Invalid Upgrade Key. Upgrade Failed. The Upgrade Key is made for the module with the following unique ID.	You entered an upgrade key for a different module. Make sure that you have the correct module selected in the PowerFlex Utility.
Error: The current module configuration is incompatible with the upgrade.	The upgrade key is correct, but you cannot upgrade the instrument from the current configuration. Verify that you ordered the correct upgrade kit for your instrument.
Error: The upgrade is already installed.	You attempted to install the upgrade twice. You can only install the upgrade once.
TLA or pattern generator application does not start after installing the upgrade.	The PowerFlex Utility is still running. Exit the PowerFlex utility before starting the TLA or pattern generator application.



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