

# Instruction Manual



## TLA 7UP Mainframe Field Upgrade Kit 071-0572-02

### **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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# 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 the system. Read the *General Safety Summary* in other system 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 power source being used.

**Connect and Disconnect Properly.** Do not connect or disconnect probes or test leads while they are connected to a voltage source.

**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 marking 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.

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

**Use Proper Fuse.** Use only the fuse type and rating specified for this product.

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

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

**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.

**Symbols and Terms**

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



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

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

---

**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.

**Symbols on the Product.** The following symbols may appear on the product:



WARNING  
High Voltage



Protective Ground  
(Earth) Terminal



CAUTION  
Refer to Manual



Double  
Insulated

# 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, disconnect the main power by means of the power cord or, if provided, the power switch.

**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.





# Preface

This instruction manual contains specific information about the TLA 7UP mainframe field upgrades. The mainframe field upgrades consist of software and hardware options for the TLA 700 series logic analyzer. Use the table below to explore your possible upgrade paths.

**Table i: TLA 7UP Mainframe Field Upgrade Matrix**

If You Want To Take Advantage of This	And Your Current Configuration Is This	You Need To Order This
TLA 714 Color Portable Mainframe and TLA 720 Color Benchtop Mainframe Upgrades		
Upgrade to Version 3.2 TLA Application Software	TLA 714 Std or Option 1S with V3.0 application software TLA 720 Std	TLA 7UP Option 06
Upgrade your mainframe to 128 MB RAM	TLA 714 Std	TLA 7UP Option 03
Upgrade your mainframe to a larger replaceable hard disk drive	TLA 714 Std	TLA 7UP Option 04
Upgrade your mainframe to have an additional replaceable hard disk drive	TLA 714 Std or Option 1S TLA 720 Std	TLA 7UP Option 04
Upgrade your mainframe to have both a fixed hard disk drive and a replaceable hard disk drive	TLA 714 Std or Option 1S TLA 720 Std	TLA 7UP Option 04
Reconfigure your replaceable hard disk drive for data storage only	TLA 714 Std or Option 1S TLA 720 Std	TLA 7UP Option 04
Upgrade support for new TLA 7Nx/Px Logic Analyzer Modules	TLA 714 Std or Option 1S with V3.0 application software TLA 720 Std	TLA 7UP Option 06
Upgrade support for TLA 7Lx/Mx Logic Analyzer Modules	TLA 714 Std or Option 1S with V3.0 application software TLA 720 Std	TLA 7UP Option 06
Upgrade support for TLA 7Dx/Ex Digitizing Oscilloscope Modules	TLA 714 Std or Option 1S with V3.0 application software TLA 720 Std	TLA 7UP Option 06

**Table i: TLA 7UP Mainframe Field Upgrade Matrix (Cont.)**

If You Want To Take Advantage of This	And Your Current Configuration Is This	You Need To Order This
Upgrade support for new TLA 7XM Expansion Mainframe	TLA 714 Std or Option 1S with V3.0 application software  TLA 720 Std	TLA 7UP Option 06  TLA 7UP Option 09 (Required only for TLA 720 Benchtop Mainframes with a serial number of B19999 or lower.)
TLA 704 Color Portable Mainframe and TLA 711 Color Benchtop Mainframe Upgrades		
Upgrade to Version 3.2 TLA Application Software	TLA 704 Std or Option 1S with V1.0, V1.1 or V2.0 application software	<p><u>For Maximum Performance</u> For maximum performance and to use TLA 7Nx and TLA 7Px modules TLA 7UP Option 01</p> <p><u>For Maximum Value</u> For maximum value, if you are happy with the current performance of your mainframe, but you want to take advantage of the TLA application software Version 3.2, and you do not intend to take advantage of the performance of the TLA 7Nx or TLA 7Px modules, you can order the following Options separately:</p> <p>TLA 7UP Option 06 V3.2 application software comes on a CD ROM which requires an update to Windows 98 (On CD ROM) TLA 7UP Option 07 (Windows 98 upgrade) TLA 7UP Option 08 (external CD ROM drive)</p>
Upgrade to Windows 98	TLA 704 Std or Option 1S  TLA 711 Std or Option 1S	TLA 7UP Option 07 and Option 08
Upgrade your TLA 704 or TLA 711 mainframe to use TLA 700 Series application software version 3.2	TLA 704 Std or Option 1S with V1.0, V1.1 or V2.0 application software  TLA 711 Std or Option 1S with V1.0, V1.1 or V2.0 application software	TLA 7UP Option 01

Table i: TLA 7UP Mainframe Field Upgrade Matrix (Cont.)

If You Want To Take Advantage of This	And Your Current Configuration Is This	You Need To Order This
Upgrade your mainframe to 128 MB RAM	TLA 704 Std or Option 1S TLA 711 Std or Option 1S	TLA 7UP Option 02
Upgrade your mainframe to a larger hard disk drive	TLA 704 Std TLA 711 Std	TLA 7UP Option 04
Add an external CD ROM drive (PCMCIA)	TLA 704 Std or Option 1S TLA 711 Std or Option 1S	TLA 7UP Option 08
Upgrade support for new TLA 7Nx/Px Logic Analyzer Modules	TLA 704 Std or Option 1S with V1.0, V1.1 or V2.0 application software TLA 711 Std or Option 1S with V1.0, V1.1 or V2.0 application software	TLA 7UP Option 01
Upgrade support for TLA 7Lx/Mx Logic Analyzer Modules	TLA 704 Std or Option 1S with V1.0, V1.1 or V2.0 application software TLA 711 Std or Option 1S with V1.0, V1.1 or V2.0 application software	TLA 7UP Option 01
Upgrade support for TLA 7Dx/Ex Digitizing Oscilloscope Modules	TLA 704 Std or Option 1S with V1.0, V1.1 or V2.0 application software TLA 711 Std or Option 1S with V1.0, V1.1 or V2.0 application software	TLA 7UP Option 01
Upgrade support for new TLA 7XM Expansion Mainframe	TLA 704 Std or Option 1S with V1.0, V1.1 or V2.0 application software TLA 711 Std or Option 1S with V1.0, V1.1 or V2.0 application software	TLA 7UP Option 01

## Service and Upgrade Notes

To prevent personal injury or damage to the instrument, consider the following requirements before attempting service:

- Read the *General Safety Summary* and *Service Safety Summary* found at the beginning of this manual.
- The procedures in this manual may only be performed by a qualified service person.

Be sure to follow all warnings, cautions and notes.

## Adjustment and Certification Interval

Generally, you should perform the adjustments and certification (calibration) described in the *TLA Family Logic Analyzer Performance Verification and Adjustment Technical Reference* once per year, or following repairs that affect adjustment or calibration.

## Service Offerings

Tektronix provides service to cover repair under warranty as well as other services that are designed to meet your specific service needs.

Whether providing warranty repair service or any of the other services listed below, Tektronix service technicians are equipped to service the mainframe. Services are provided at Tektronix Services Centers and on-site at your facility, depending on your location.

### Warranty Repair Service

The warranty for this product is located behind the title page in this manual. Tektronix technicians provide warranty service at most Tektronix service locations worldwide. The Tektronix product catalog lists all service locations worldwide, or you can visit us on our *Customer Services World Center* web site at:

[Tektronix.com/Measurement/Service](http://Tektronix.com/Measurement/Service)

### Calibration and Repair Service

In addition to warranty repair, Tektronix Service offers calibration and other services which provide solutions to your service needs and quality standards compliance requirements.

The following services can be tailored to fit your requirements for calibration and/or repair.

**Service Options.** Tektronix Service Options can be selected at the time you purchase your instrument. You select these options to provide the services that best meet your service needs. These service options are listed on the *Tektronix Service Options* page following the title page of this manual.

**Service Agreements.** If service options are not added to the instrument purchase, then service agreements are available on an annual basis to provide calibration services or post-warranty repair coverage. Service agreements may be customized to meet special turn-around time and/or on-site requirements.

**Service on Demand.** Tektronix offers calibration and repair services on a “per-incident” basis that is available with standard prices.

**Self Service.** Tektronix supports repair to the replaceable-part level by providing for circuit board exchange.

Use this service to reduce down-time for repair by exchanging circuit boards for remanufactured ones. Tektronix ships updated and tested exchange boards. Each board comes with a 90-day service warranty.

**For More Information.** Contact your local Tektronix service center or sales engineer for more information on any of the Calibration and Repair Services just described.

## Contacting Tektronix

Product Support	<p>For questions about using Tektronix measurement products, call toll free in North America: 1-800-833-9200 6:00 a.m. – 5:00 p.m. Pacific time</p> <p>Or contact us by e-mail: tm_app_supp@tek.com</p> <p>For product support outside of North America, contact your local Tektronix distributor or sales office.</p>
Service support	<p>Tektronix offers a range of services, including Extended Warranty Repair and Calibration services. Contact your local Tektronix distributor or sales office for details.</p> <p>For a listing of worldwide service centers, visit our web site.</p>
Toll-free Number	<p>In North America: 1-800-833-9200 An operator can direct your call.</p>
Postal Address	<p>Tektronix, Inc. Department or name (if known) P.O. Box 500 Beaverton, OR 97077 USA</p>
Web site	<p><a href="http://www.tektronix.com">www.tektronix.com</a></p>



# TLA 7UP Option 01





# Upgrade TLA 704 or TLA 711 to Support TLA 7Nx and TLA 7Px LA Modules

TLA 7UP option 01 supports the upgrade of a TLA 704 Color Portable Mainframe or a TLA 711 Color Benchtop Mainframe to support the use of TLA 7Nx and TLA 7Px logic analyzer modules.

## Upgrade To Use TLA 7Nx and TLA 7Px LA Modules

To use TLA 7Nx and TLA 7Px logic analyzer modules with your TLA 704 or TLA 711 mainframe, the mainframe must have the following modifications and upgrades performed. This section explains in more detail how and why each operation is performed.

- Install cooling shutter assembly in the TLA 704 Color Portable Mainframe. (TLA 704 Color Portable Mainframe only.)
- Install two 64 MB DIMMs (for a total of 128 MB).
- Install a larger hard disk drive.
- Install a jumper (if necessary) and reflash the BIOS (on the TLA 704 and the TLA 711 only).
- Install an external CD ROM drive and software drivers (Windows 98 SE and the TLA application software are only available on a CD.)
- Install Microsoft Windows 98 SE upgrade.
- Install TLA application software version 3.2, TPI client Version 3.2, and QA+Win32 diagnostic software.

## Upgrade To Use TLA Series Version 3.2 Application Software Only

To use TLA version 3.2 Application software, but not use TLA 7Nx or TLA 7Px logic analyzer modules, the mainframe must have the following modifications and upgrades performed. This section explains in more detail how and why each operation is performed.

- Install two 64 MB DIMMs (for a total of 128 MB).
- Install a larger hard disk drive.
- Install a jumper (if necessary) and reflash the BIOS.

- Install Microsoft Windows 95.
- Install an external CD ROM drive and software drivers (Windows 98 SE only comes on a CD.)
- Install Microsoft Windows 98 SE upgrade.
- Install TLA application software version 3.2, and QA+Win32 diagnostic software.

## Instruments

TLA 704 Color Portable Mainframe	All Serial Numbers
TLA 711 Color Benchtop Mainframe	All Serial Numbers

## Tool and Equipment List

**Table 1-1: Tools required for installing upgrade**

Item number	Name
1	Small flat-screwdriver
2	#0 Phillips screwdriver
3	#1 Phillips screwdriver
4	Three-sixteenth (3/16) inch nut driver
5	Torx-drive screwdriver with a T-10 tip
6	Torx-drive screwdriver with a T-15 tip

## Kit Parts List

**Table 1-2: TLA 7UP Option 01 Parts List**

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	071-0684-XX	TLA Logic Analyzer Family User Manual Version 3.2
2	156-8510-00	64 MB DRAM DIMMs (total of 128 MB)
1	063-2895-XX	TLA 704/711 BIOS software floppy disk
1	071-0608-XX	Bootable Floppy Disk Instructions Read This First

Table 1–2: TLA 7UP Option 01 Parts List (Cont.)

Quantity	Part number	Description
1	650-4019-00	Replaceable hard disk drive cartridge and jumper, with no software loaded.
1	342-1027-00	Lexan insulator (TLA 711 Only) <sup>1</sup>
1	378-0449-00	Cooling shutter assembly
1	063-3022-XX	TLA application software V3.2, TLA TPI client software, and QA+Win32 diagnostics software, all on a CD
1	063-3227-XX	Windows 98 SE pre-install, internal/external CD ROM drive boot floppy.
1	063-3228-XX	Windows 98 SE upgrade, on CD
5	131-4356-00	Jumper with pull tab, for flashing module firmware
1	016-1524-01	Tektronix mouse pad
1	119-6179-00	External CD ROM drive, software and manual(s)
12	N/A	S/W revision labels
1	N/A	TLA 7UP kit label

<sup>1</sup> The Lexan insulator is only used on the TLA 711 benchtop controller.

## Installation Instructions

Extensive disassembly of the benchtop controller is required. These instructions are for personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the appropriate product service manual.

Contact your nearest Tektronix, Inc., 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.

## **Install the Cooling Shutter Assembly (TLA 704 Portable Mainframe Only)**

If you are upgrading the portable mainframe to use version 3.2 application software, but are not using TLA 7Nx or TLA 7Px logic analyzer modules, you do not need to install the cooling shutters.

The TLA 704 Color Portable Mainframe requires upgraded cooling shutters. Install the cooling shutter assembly by following the instructions that start on page 5–1.

The TLA 711 Color Benchtop Mainframe does not require the installation of the cooling shutters.

## **Install the Two 64 MB RAM DIMMs**

Upgrade the RAM by following the instructions listed on page 2–1.

Detailed RAM installation procedures for the TLA 704 Color Portable Mainframe begin on page 2–3.

Detailed RAM installation procedures for the TLA 711 Color Benchtop Controller begin on page 2–15.

## **Install the Hard Disk Drive**

The hard disk drive must be removed from inside of the removable hard disk drive cartridge that came with this kit. Refer to the instructions beginning on page 4–1 to install the hard disk drive, update the BIOS, and reinstall the software.



# TLA 7UP Option 02



# TLA 704 or TLA 711 128 MB DRAM Upgrade Instructions

TLA 7UP option 02 supports the upgrade of your TLA 704 Color Portable Mainframe or your TLA 711 Color Benchtop Mainframe from 16 or 32 MB of DRAM to 128 MB of DRAM.

## Instruments

TLA 704 Color Portable Mainframe	All Serial Numbers
TLA 711 Color Benchtop Mainframe	All Serial Numbers

## Kit Parts List

Table 2-1: TLA 7UP Option 02 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
2	156-8510-00	64 MB SIMMs (total of 128 MB)
1	063-2895-XX	TLA 704/711 BIOS software on a floppy disk
1	071-0608-XX	Bootable Floppy Disk Instructions Read This First
1	N/A	TLA 7UP kit label

## Installation Instructions

These instructions are for personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the appropriate product manual. Contact your nearest Tektronix, Inc., 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.*

---

## Installation Instructions for the TLA 704 Color Portable Mainframe

For detailed instructions on installing the DRAM and updating the BIOS on your TLA 704 Color Portable Mainframe, refer to page 2–3.

## Installation Instructions for the TLA 711 Color Benchtop Mainframe

For detailed instructions on installing the DRAM and updating the BIOS on your TLA 711 Color Benchtop Mainframe, refer to page 2–15.



# TLA 704 Color Portable Mainframe 128 MB DRAM Installation Instructions

These instructions are for upgrading the DRAM on your TLA 704 Color Portable Mainframe to 128 MB.

---

**NOTE.** *The following instructions are for upgrading your TLA 704 Color Portable Mainframe.*

*If you are upgrading a TLA 711 Color Benchtop Mainframe, proceed to the instructions located on page 2–15.*

---

These instructions assume that you are familiar with servicing the instrument. If you need further details for disassembling or reassembling the instrument, refer to the *TLA 704 Color Portable Mainframe Service Manual*.

Contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service Center for installation assistance.



---

**CAUTION.** *To prevent static discharge damage, service the instrument 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.*

---

These instructions must be performed in the sequence in which they are presented. The instructions include the following procedures:

- *Disassembly*, which removes the external parts needed to access the DRAM SIMM boards and the BIOS flash jumper inside the portable mainframe.
- *DRAM SIMM Replacement*, which removes the existing DRAM SIMM boards and installs the upgrade DRAM SIMM boards.
- Installation of the BIOS flash jumper.
- *Reassembly*, which reinstalls parts removed in *Disassembly*.
- *Verify Operation*, which runs some verification tests of the new memory.

## Minimum Tool and Equipment List

Table 2–2: Tools required for installing upgrade

Item number	Name	Description
1	Small flat blade screwdriver	Standard tool
2	#0 Phillips screwdriver	Standard tool
3	#1 Phillips screwdriver	Standard tool
4	Diagonal cutters (to remove cable ties)	Standard tool
5	Three-sixteenth (3/16) inch nut driver	Standard tool
6	Needle nose plier	Standard tool
7	Torx-drive screwdriver with a T-10 tip	Standard tool
8	Torx-drive screwdriver with a T-15 tip	Standard tool

## Remove Trim Ring

To perform this procedure refer to Figure 2–1 and follow these instructions:

1. Disconnect the power cord from the mainframe.
2. Remove the modules and probes from the mainframe.
3. Set the mainframe on your work surface with the cord wrap feet facing down and with the bottom facing you.
4. Grasp the trim ring by its bottom edge and pull toward you to detach the three plastic snaps. Refer to Figure 2–1.

Alternatively, you can use a flat blade screwdriver or other small prying tool to help you detach the snaps.

Swing the bottom of the ring upward and carefully work the rest of the trim ring off the front panel.

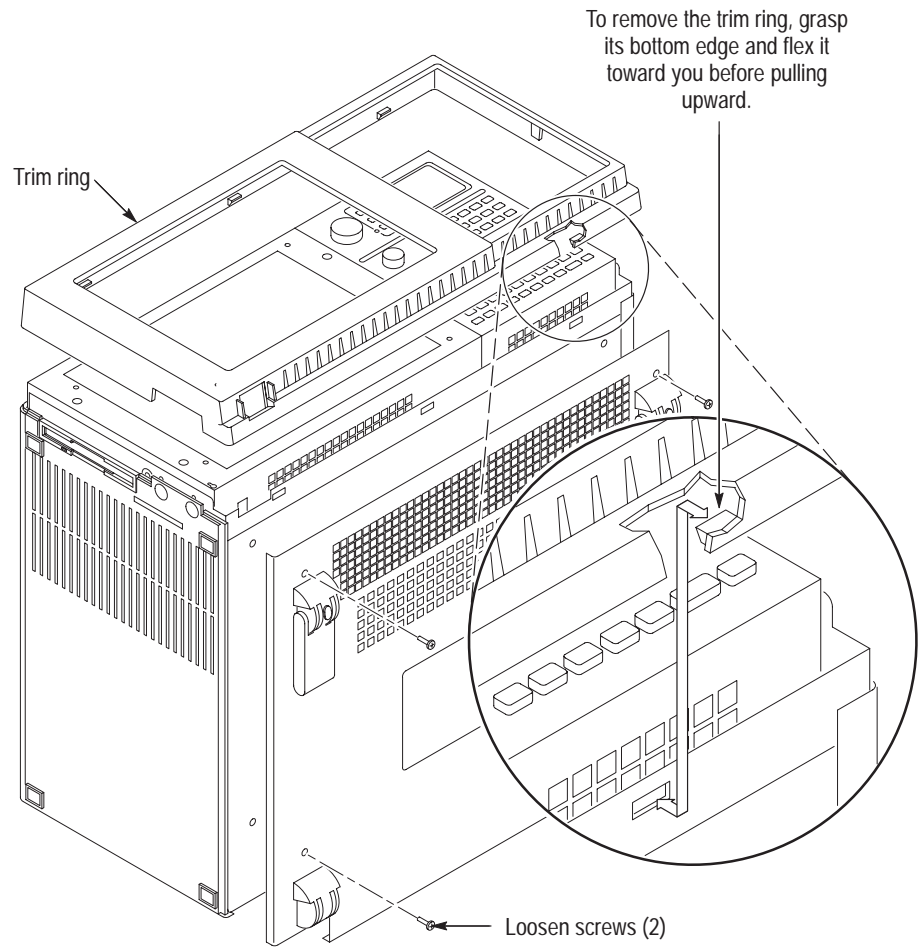


Figure 2-1: Front cover and trim ring removal

## Remove Top Cover

1. Set the mainframe on your work surface with the bottom facing down and the front facing you.
2. Remove the accessories pouch from the top cover. (It unsnaps.)
3. Remove the four screws that attach the top cover to the mainframe.

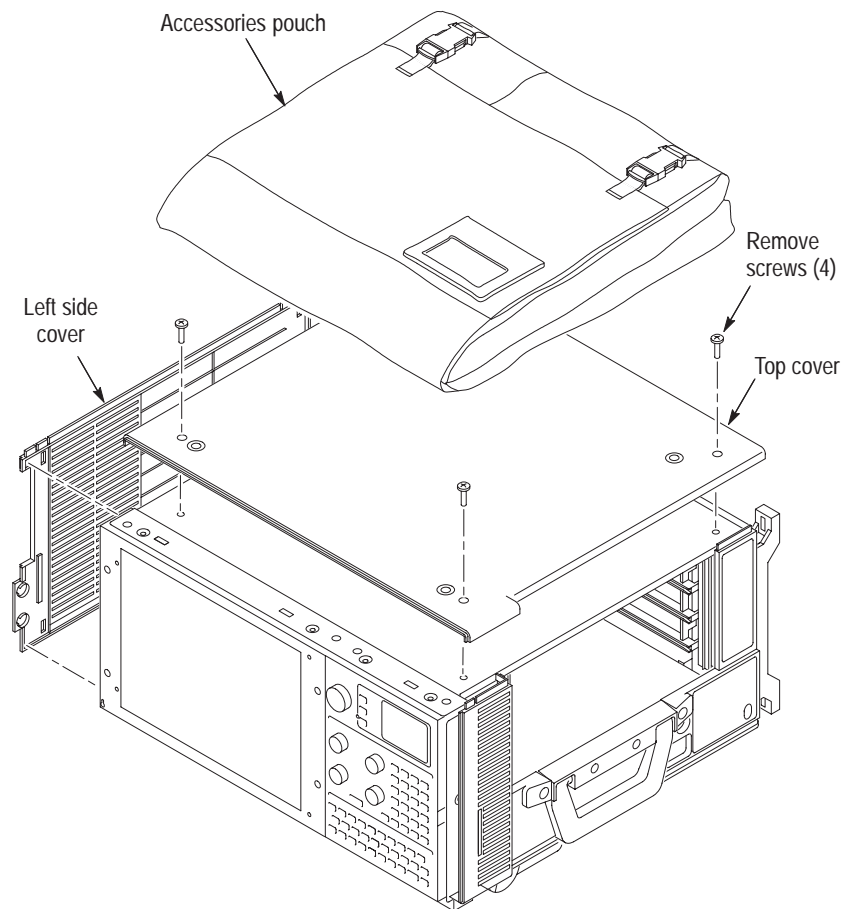
---

**NOTE.** Support the left side cover as you perform the following step.

*As you lift off the top cover, the side cover will come free.*

---

4. Lift the top cover off.



**Figure 2-2: Removal of pouch, top cover, and left side cover**

## Remove Left Side Cover and EMI Shield

1. Loosen the two screws on the bottom cover closest to the left side of the mainframe as shown in Figure 2-1 on page 2-5.
2. Remove the left side cover.

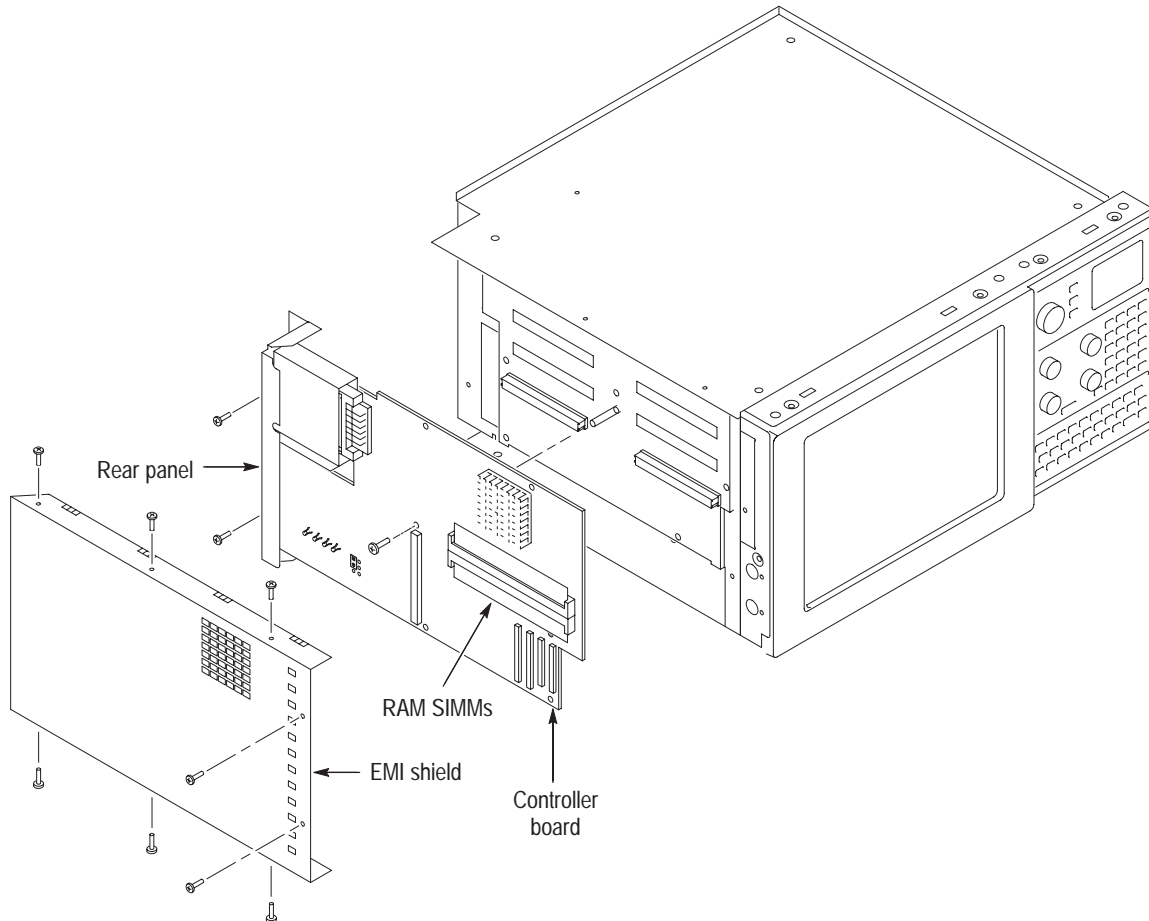


Figure 2-3: Floppy disk drive and update BIOS jumper location

## Remove DRAM SIMM Boards

You will need a screwdriver with a size T-15 Torx tip to perform this procedure. Use the following procedure to remove the DRAM SIMMs:

1. Set the mainframe on your work surface with the bottom facing down and with the left side facing you.
2. Remove the eight screws securing the EMI shield to the chassis and lift off the EMI shield.
3. Locate the DRAM SIMM boards in Figure 4–4. Note that there are two DRAM SIMM boards, an upper and a lower.
4. Press outward on the clips holding each DRAM SIMM board to the controller board and lift off the DRAM SIMM board. Remove both boards.

## Install DRAM SIMM Boards

Use the following procedure to install the new DRAM SIMM boards:

---

**NOTE.** *When installing the DRAM SIMM boards, make sure that both DRAM SIMM boards contain DRAM memory of the same size.*

---

1. Install the new DRAM SIMM boards. Press down gently until the clips that hold the DRAM SIMM boards to the controller board snap into place as shown in Figure 2–4.

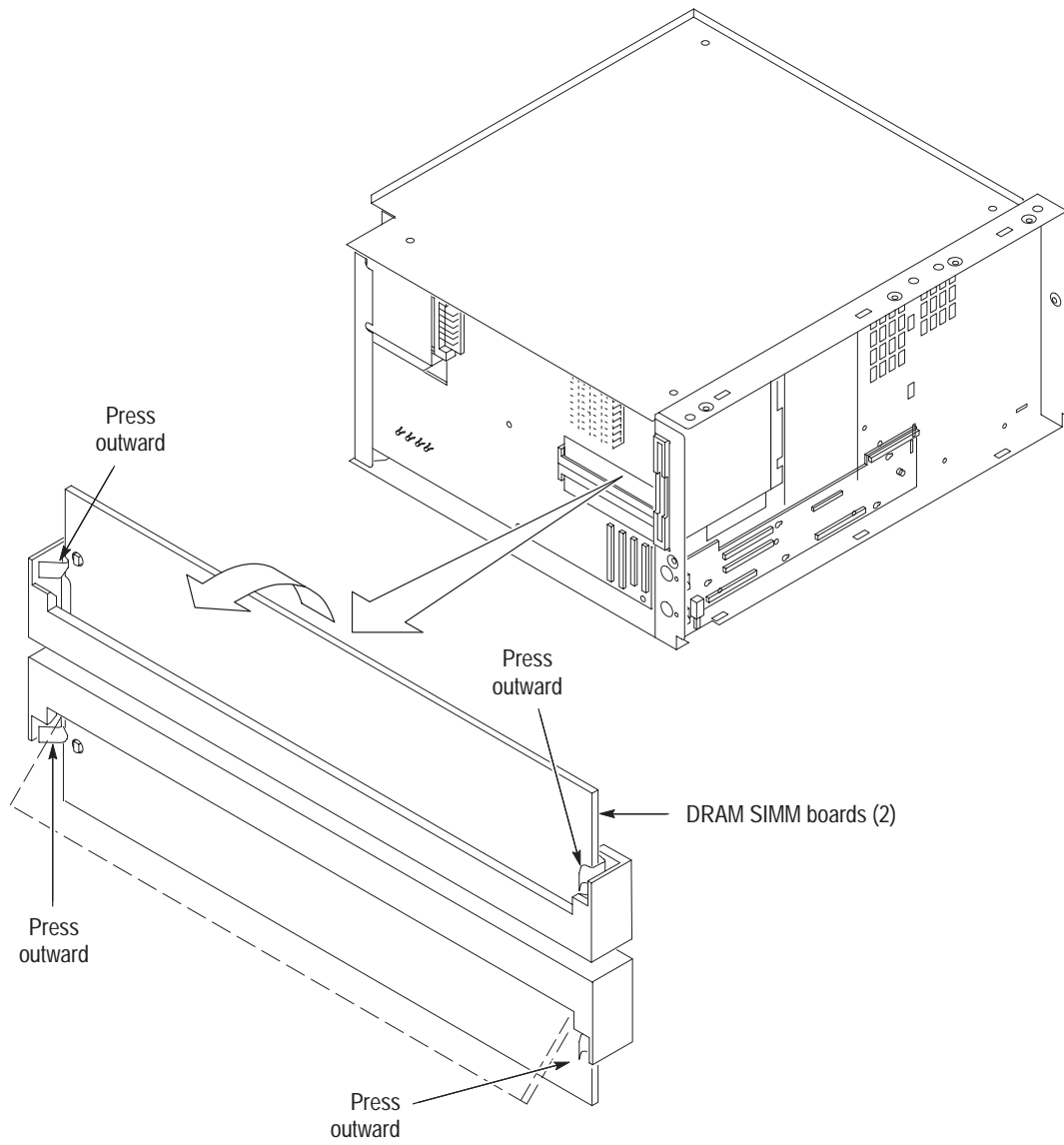


Figure 2-4: DRAM SIMM board replacement

## Install BIOS Flash Jumper

The BIOS flash jumper was factory installed on some controllers. If the flash jumper is already in place, disregard this step; otherwise, place a shorting jumper at jumper position H2, shorting pins one and three. Refer to Figure 2–5.

You do not need to remove the BIOS jumper after the BIOS is updated.

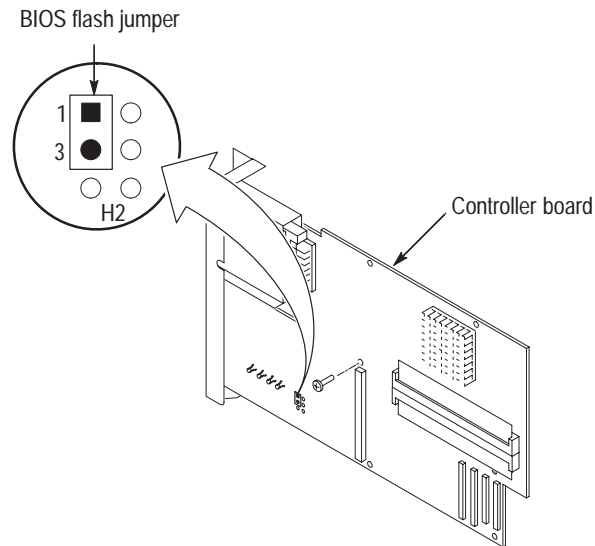


Figure 2–5: Floppy disk drive and update BIOS jumper location

## Install Left Side Cover and EMI Shield

1. Install the eight screws that secure the EMI shield. Refer to Figure 2–3.
2. Replace the left side cover.
3. Tighten the two screws on the bottom cover closest to the left side of the mainframe as shown in Figure 2–1 on page 2–5.



## Install Top Cover

1. Place the top cover on the instrument.
2. Install the four screws that attach the top cover to the mainframe.
3. Install the accessories pouch from the top cover. (It snaps on.)

## Install Trim Ring

Use the following procedure to replace the front cover and trim ring:

Replace the trim ring on the front panel. Start at the top edge and work around to the bottom until the three plastic snaps engage. Press the trim ring down all around the edges until it is completely seated.

## Configure the BIOS

This procedure is necessary after replacing the hard disk. To configure the Controller BIOS, complete the following steps:

1. Insert the BIOS floppy disk into the floppy disk drive.
2. Power up the mainframe.
3. The mainframe will boot to the floppy disk drive.
4. When prompted, type **plash** and press the enter key.
5. When the BIOS has finished the flash program, power the mainframe off.
6. Remove the flash update floppy disk.

## Configure the CMOS Setup

1. Power the instrument off, and then on.
2. During the boot up process, press the <F2> key to enter the CMOS Setup.  

You may see a Checksum Error message. This is because you have not yet configured the CMOS setup.
3. Press the <F9> key.
4. Select Continue from the menu to load the default values.
5. In the PhoenixBIOS setup main menu select IDE Adapter 0 Master and then press the Return key. This will select Autotype for the hard disk drive type.

6. Select Type and then press the ESC key.
7. Enter the Advanced menu and scroll to the Advanced Chipset Control submenu and select it by pressing the <Return> key.
  - a. Set the DRAM memory speed to 60 ns.
  - b. Press the <Esc> key to exit the Advanced Chipset Control submenu.
8. Select Exit and then select Save Changes and Exit.
9. Press the Return key twice.
10. Continue with the regular boot up of the instrument.

## Verify the BIOS Version

The BIOS information appears after the instrument has been powered down and then powered up. Perform the Shutdown and then power up the instrument. The BIOS version is briefly displayed on boot up of the instrument. To verify the BIOS version number, power on the instrument and watch the upper left hand section of the screen. A message will be displayed as below:

```
Copyright 1996 By RadiSys Corporation.  Version 1.xx.xx.  
RadiSys boot block version 1.xx.xx
```

Before continuing, verify that the BIOS version that is displayed is the same as the version number listed on the floppy disk.

## Verify Operation

Follow the steps below to ensure proper operation of the instrument:

Run the memory verification tests from the QAPLus (or QA+Win32) diagnostics by doing the following steps.

---

**NOTE.** *You must have Windows 95 running to run QAPLus.*

---

1. Turn off all other applications.
2. Select Start → Programs → QAPLus\_WIN-WIN → QAPLus\_WIN-WIN.
3. Click OK.
4. Run the memory tests from the QAPLus menu. If needed, refer to the QAPLus online help for more information on running QAPLus.

5. Select Run Tests. When both graphs get to 100%, click Stop.

Do this for each test. After all four tests are done, click OK. Select Exit from the File menu.

6. Power down the mainframe, and then power it up before running the TLA 700 application software.



# TLA 711 Color Benchtop Mainframe 128 MB DRAM Installation Instructions

These instructions are for upgrading the DRAM on your TLA 711 Color Benchtop Mainframe to 128 MB.

---

**NOTE.** *The following instructions are for upgrading the TLA 711 Color Portable Mainframe.*

*If you are upgrading your TLA 704 Color Portable Mainframe, refer to the instructions on page 2–3.*

---

These instructions assume that you are familiar with servicing this instrument. If you need further details for disassembling or reassembling the instrument, refer to the *TLA 711 Color Portable Mainframe Service Manual*.

Contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service Center for installation assistance.



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**CAUTION.** *To prevent static discharge damage, service the instrument 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.*

---

These instructions must be performed in the sequence in which they are presented; they include the following procedures:

- *Disassembly*, which removes the external parts needed to remove the Controller subassembly from its enclosure to access the DRAM SIMM boards.
- *DRAM SIMM Replacement*, which removes the existing DRAM SIMM boards and installs the upgrade DRAM SIMM boards.
- Installation of the BIOS flash jumper.
- *Reassembly*, which reinstalls parts removed in *Disassembly*.
- Flashing the BIOS.
- *Verify Operation*, which runs some verification tests of the new memory.

## Minimum Tool and Equipment List

Table 2-3: Tools required for installing upgrade

Item number	Name	Description
1	Small flat blade screwdriver	Standard tool
2	#0 Phillips screwdriver	Standard tool
3	#1 Phillips screwdriver	Standard tool
4	Diagonal cutters (to remove cable ties)	Standard tool
5	Three-sixteenth (3/16) inch nut driver	Standard tool
6	Needle nose plier	Standard tool
7	Torx-drive screwdriver with a T-10 tip	Standard tool
8	Torx-drive screwdriver with a T-15 tip	Standard tool

## Disassemble the Controller Module

Verify that the power cord has been disconnected from the mainframe. Remove any connected cables or probes from the benchtop controller and remove the benchtop controller from the mainframe.

You will need a T-10 Torx tip driver to remove the left side cover and rear panel.

1. Place the module on its right side as shown in Figure 2–6.
2. Remove the six screws from the top and bottom of the left side cover.
3. Remove the two screws from the rear panel as shown in Figure 2–6.
4. Remove the rear panel.
5. Remove the left side cover.

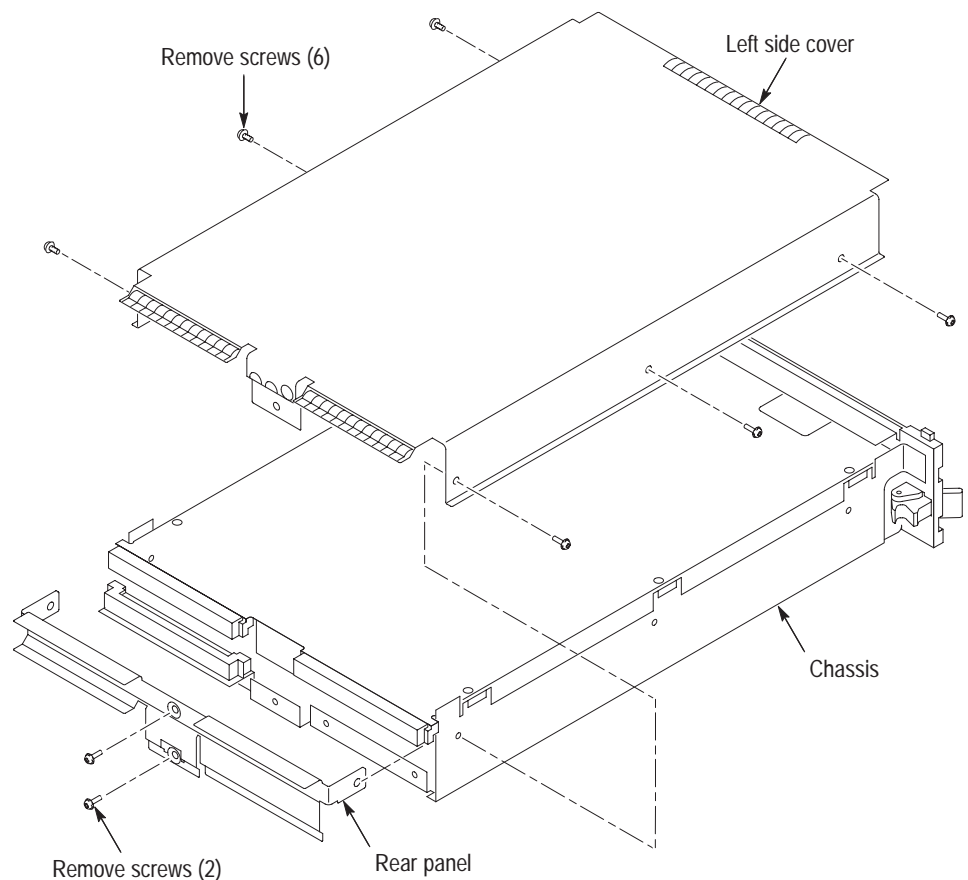


Figure 2–6: Left side cover and rear panel removal

You will need a T-10 Torx tip driver, a small flat-blade screwdriver, a #0 Phillips screwdriver, a #1 Phillips screwdriver, a 3/16 inch nut driver, and a needle nose plier to remove the controller subassembly.

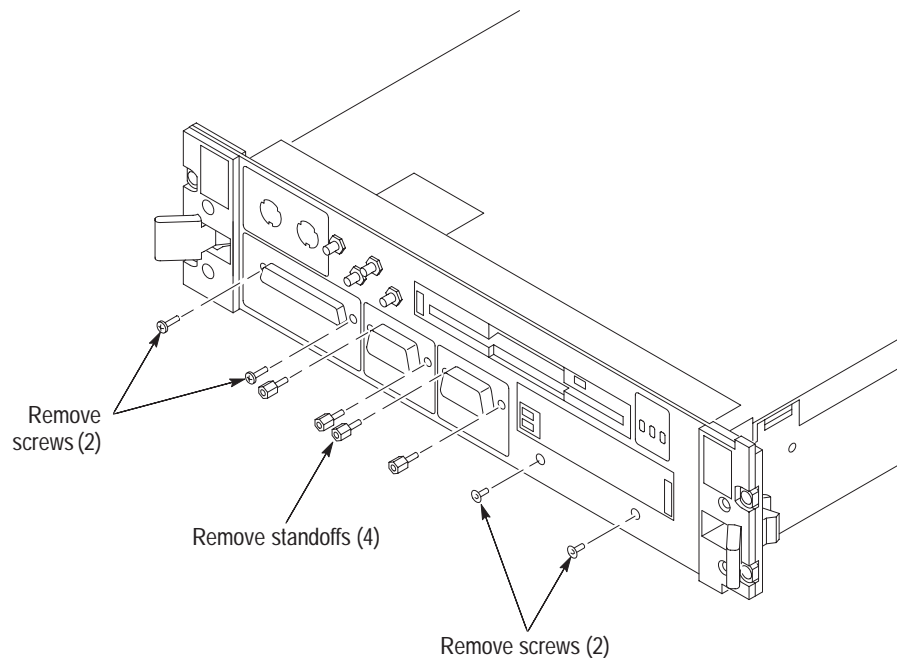
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**NOTE.** The following steps remove the subassembly from the enclosure to gain access to the internal parts.

*Note that subassembly removal is a two part procedure: first you will remove the front panel hardware to relieve mechanical stress on the soldered-on connectors. Second, you will remove the subassembly from the enclosure.*

---

6. Remove the four 3/16 inch standoffs from the SVGA OUT and COM connectors. (See Figure 2–7.)
7. Remove the two screws from the LPT connector.
8. Remove the two Phillips screws, located to the right of the PC card slot.
9. DO NOT remove the 1/4 inch nuts on the SMB connectors.



**Figure 2–7: Front panel hardware removal**

10. Remove the six T-10 Torx screws that attach the subassembly to the chassis. (See figure 2–8.)



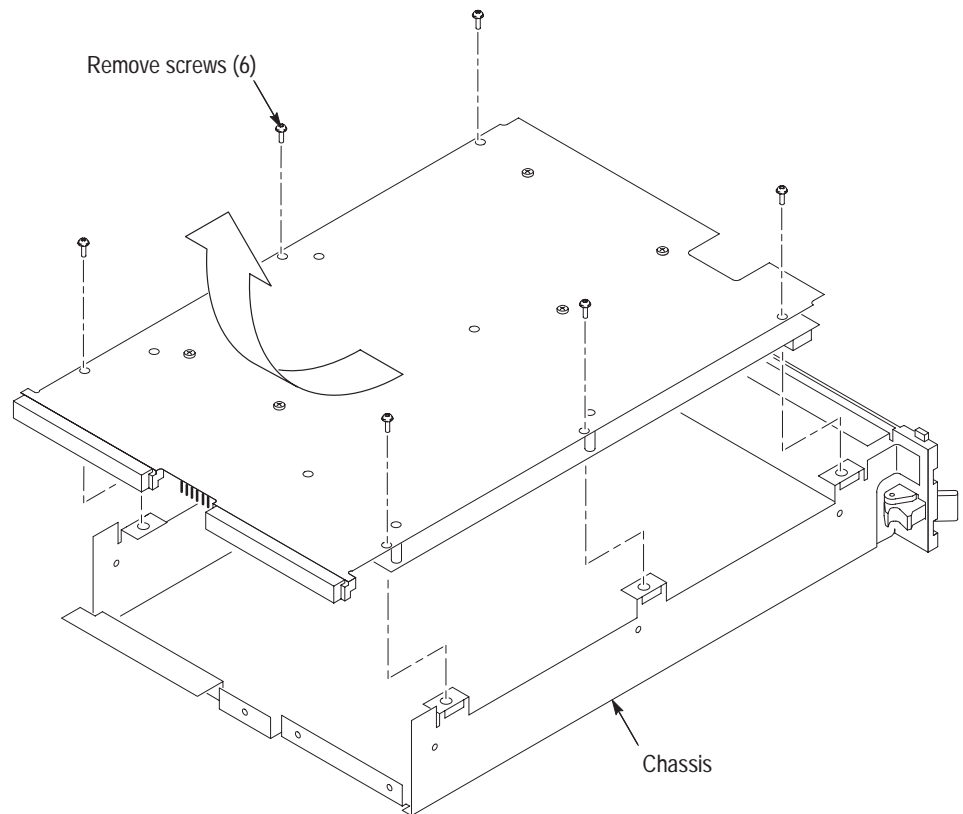


Figure 2–8: Subassembly removal



**CAUTION.** The subassembly is attached to the chassis by the four SMB connector cable assemblies. To avoid damaging the subassembly, use care when lifting the subassembly out.

11. Carefully lift the subassembly part way out of the chassis.
12. Carefully turn the subassembly over and disconnect the four SMB cable assemblies on the controller board. See Table 2–4 for the color code placement of the four SMB cable assemblies.
13. Pass the SMB cable assemblies through the space between the controller board and the adapter board to remove the subassembly from the chassis.

## DRAM SIMM Replacement

The DRAM SIMMs are located on the controller board of the subassembly that you just removed. (See Figure 2–9.) Removal and installation of the DRAM SIMM boards do not require the use of tools.

### Remove DRAMs

1. Press outward on the clips holding each DRAM SIMM board to the Controller board and lift off the DRAM SIMM board.
2. Remove both boards. (See Figure 2–9.)

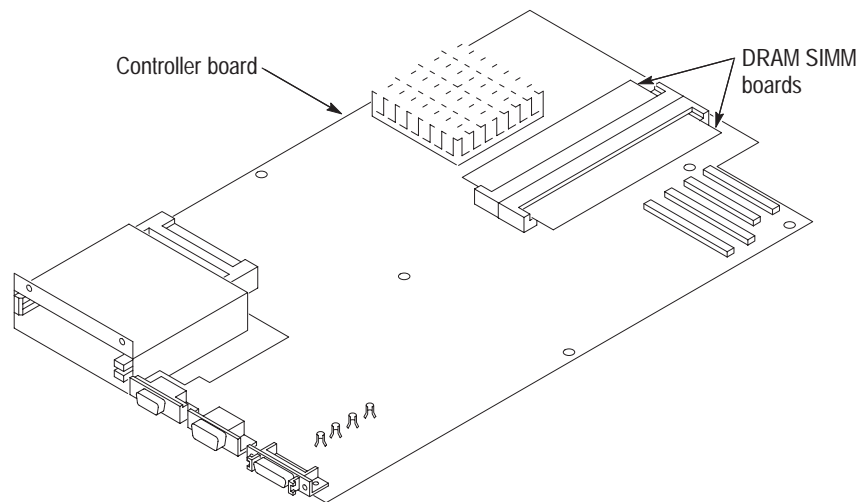


Figure 2–9: DRAM SIMM boards removal

### Install DRAMs

---

**NOTE.** When installing the DRAM SIMM boards, make sure that both DRAM SIMM boards contain RAM memory of the same size.

---

1. Align the DRAM SIMM board with the socket and gently push the DRAM SIMM board into the socket.
2. The tabs on each side of the DRAM SIMM board will engage and lock the DRAM SIMM board into place. Install both DRAM SIMM boards.

## Install BIOS Flash Jumper

The BIOS flash jumper was factory installed on some controllers. If the flash jumper is already in place, disregard this step; otherwise, place a shorting jumper at jumper position H2, shorting pins one and three. Refer to Figure 2–10.

You do not need to remove the BIOS flash jumper after the BIOS has been updated.

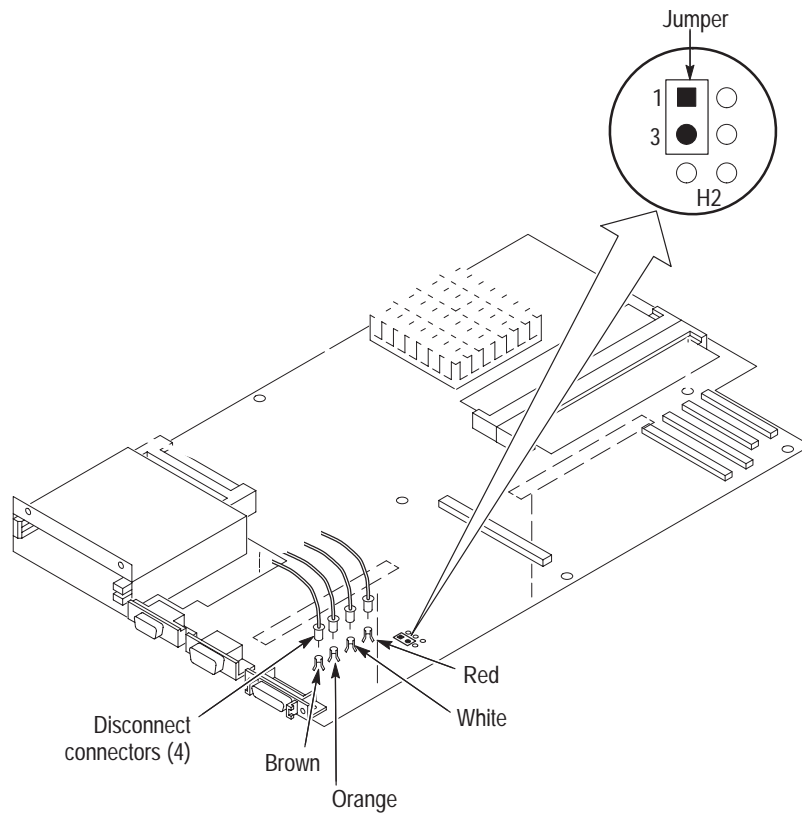


Figure 2–10: Controller board and adapter board interconnection

## Reassemble the Controller Module

To install the subassembly into the enclosure refer to Figures 2–7 and 2–8 as you follow these steps:

1. Pass the four SMB cable assemblies through the space between the Controller board and the Adapter board.
2. Carefully turn the subassembly over and connect the four SMB cable assemblies to the four SMB connectors on the controller board. Table 2–4 identifies each connector by color code and signal name.

**Table 2–4: Signal wire identification**

Signal wire color	Signal identification
White	EXTERNAL SIG OUT
White / Brown stripe	EXTERNAL SIG IN
White / Red stripe	SYSTEM TRIG OUT
White / Orange stripe	SYSTEM TRIG IN

3. Carefully slide the subassembly into the chassis. Locate all of the front panel connectors into the proper cut-outs on the front panel.
4. Attach the six T-10 Torx screws that hold the subassembly to the chassis. **DO NOT** tighten the screws until the front panel hardware has been secured.
5. Install the two screws located to the right of the PC card slot.
6. Install the four standoffs on the SVGA OUT and COM connectors.
7. Install the two screws on the LPT connector.
8. Tighten the six screws that secure the subassembly to the chassis.
9. Install the side cover.
10. Install the module in the mainframe and connect any cables that were removed during disassembly, including the power cord.

## Set Up and Flash the BIOS

The new BIOS requires you to change the CMOS BIOS settings. This only has to be done once. To change the CMOS BIOS settings follow these steps:

1. Install the controller into the benchtop mainframe and install the retention screws on the injector/ejector handles to ensure a good ground.
2. Plug the power cord into the benchtop chassis. Plug in the external keyboard, monitor, and mouse into the controller.

## Flash the BIOS

1. Insert the BIOS floppy disk that was supplied in your kit into the floppy disk drive.
2. Power the instrument on.
3. At the A:\ prompt, type **phlash** and press the Return key.

---

***NOTE.** If the BIOS jumper is not in place, you will get an error message stating that the BIOS could not be updated. If this happens, disregard the message and turn the instrument off with the power switch.*

*You will have to disassemble the instrument to install a BIOS jumper. Refer to page 2–17 and follow the disassembly instructions.*

---

4. When the install program completes, remove the floppy disk.
5. Power the mainframe off and then on.

## Configure the CMOS Setup

1. Power the instrument off, and then turn it on again.
2. During the boot up process, press the <F2> key to enter the CMOS Setup.  

You may see a Checksum Error message. This is because you have not configured the CMOS setup yet.
3. Press the F9 key for Setup Defaults.
4. Select Continue from the CMOS setup main menu to load the default CMOS setup values.
5. In the CMOS setup main menu, select IDE Adapter 0 Master and then select Autotype for the hard disk drive type by pressing the Enter key.

6. Enter the Advanced menu and scroll to the Advanced Chipset Control submenu and select it by pressing the <Return> key.
  - a. Set the DRAM memory speed 60 ns.
  - b. Press the Esc key to exit the Advanced Chipset Control submenu.
7. Select Exit and then select Save.
8. Continue with the regular boot up of the instrument.

## Verify the BIOS Version

The BIOS version is briefly displayed on boot up of the instrument. To verify the BIOS version number, power on the instrument and watch the upper left hand section of the screen. A message will be displayed as below:

```
Copyright 1996 By RadiSys Corporation.  Version 1.xx.xx.  
RadiSys boot block version 1.xx.xx
```

Before continuing, verify that the BIOS version that is displayed is the same as the version number that is listed on the floppy disk.

## Verify Operation

Follow the steps below to ensure proper operation of the instrument:

Run memory and hard disk drive verification tests from the QAPlus (or QA+Win32) diagnostics software.

---

**NOTE.** *To run QAPlus (or QA+Win32) diagnostic software you must have either a working keyboard or a working mouse (or other pointing device) and have Windows 95 running.*

---

- a. Turn off all other applications.
- b. Click Start in the Windows tool bar.
- c. Select Programs from the Start menu.
- d. Select the QAPlus application from the Programs menu.

- e. Run the memory and hard disk drive tests from the QAPlus menu. If needed, refer to the QAPlus online help for more information on running QAPlus.
- f. Power down the mainframe, and then power it up before running the TLA 700 application software.







# TLA 7UP Option 03



# TLA 714 Color Portable Mainframe 128 MB DRAM Installation Instructions

Option 03 supports the upgrade to 128 MB of DRAM memory on your TLA 714 Color Portable Mainframe.

## Instruments

TLA 714 Color Portable Mainframe

All Serial Numbers

## Minimum Tool and Equipment List

Table 3-1: Tools required for installing upgrade

Item number	Name	Description
1	Torx-drive screwdriver with a T-9 tip	Standard tool
2	Small flat blade screwdriver	Standard tool
3	#0 Phillips screwdriver	Standard tool
4	#1 Phillips screwdriver	Standard tool
5	Diagonal cutters (to remove cable ties)	Standard tool
6	Three-sixteenth (3/16) inch nut driver	Standard tool
7	Needle nose plier	Standard tool
8	Torx-drive screwdriver with a T-10 tip	Standard tool
9	Torx-drive screwdriver with a T-15 tip	Standard tool

## Kit Parts List

Table 3-2: TLA 7UP Option 03 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	156-8389-00	64 MB SO DIMM (Total of 128 MB)
1	N/A	TLA 7UP kit label

## Installation Instructions

These instructions are for personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the appropriate product manual. Contact your nearest Tektronix, Inc., 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.*

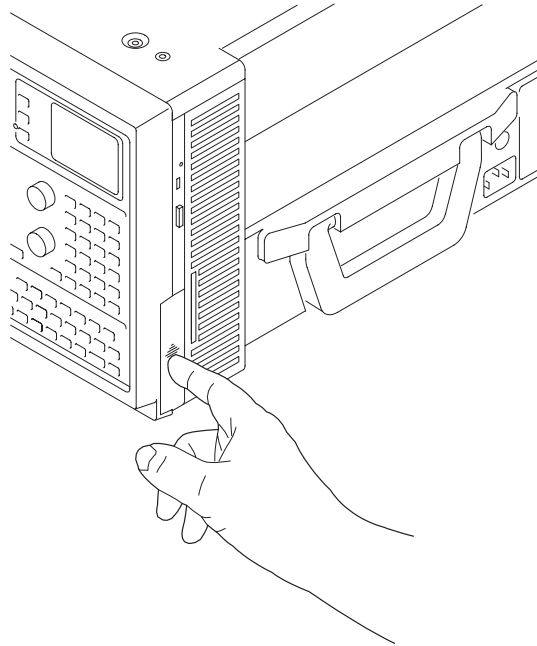
*Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.*

---

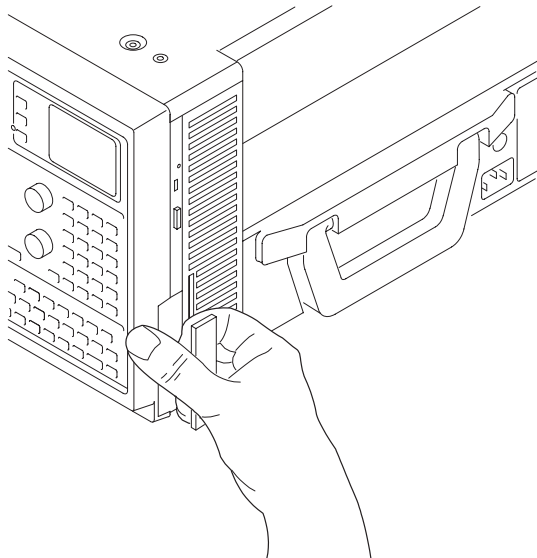
## Removing the Replaceable Hard Disk Drive

Verify that the chassis is powered down.

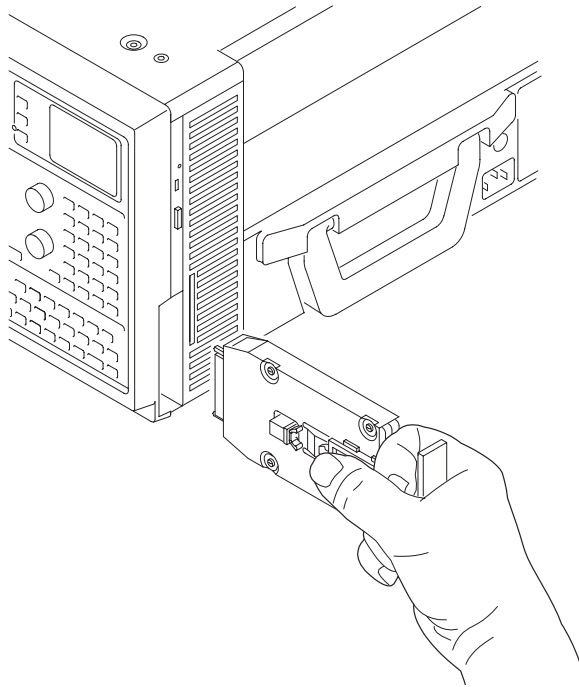
The hard disk drive cartridge is removed by depressing it. This will release the latch. Pull on the removable hard disk drive to remove it from the chassis. Refer to Figures 3-1, 3-2 and 3-3.



**Figure 3-1: Depress the latch to release**



**Figure 3-2: Pull the latch**



**Figure 3-3: Removing the hard disk drive cartridge**

## Remove Trim Ring

A flat-bladed screwdriver (or other small prying tool) will be useful to remove the trim ring.

Use the following procedure and Figure 3-4 to remove the trim ring:

1. Set the mainframe with the cord-wrap feet on the work surface and the bottom facing you.
2. Grasp the trim ring by its bottom edge and pull toward you to detach the three plastic snaps. (Alternatively, you can use a flat-bladed screwdriver or other small prying tool to help you detach the snaps.) Then, swing the bottom of the ring upward and work the rest of the ring off the front panel.

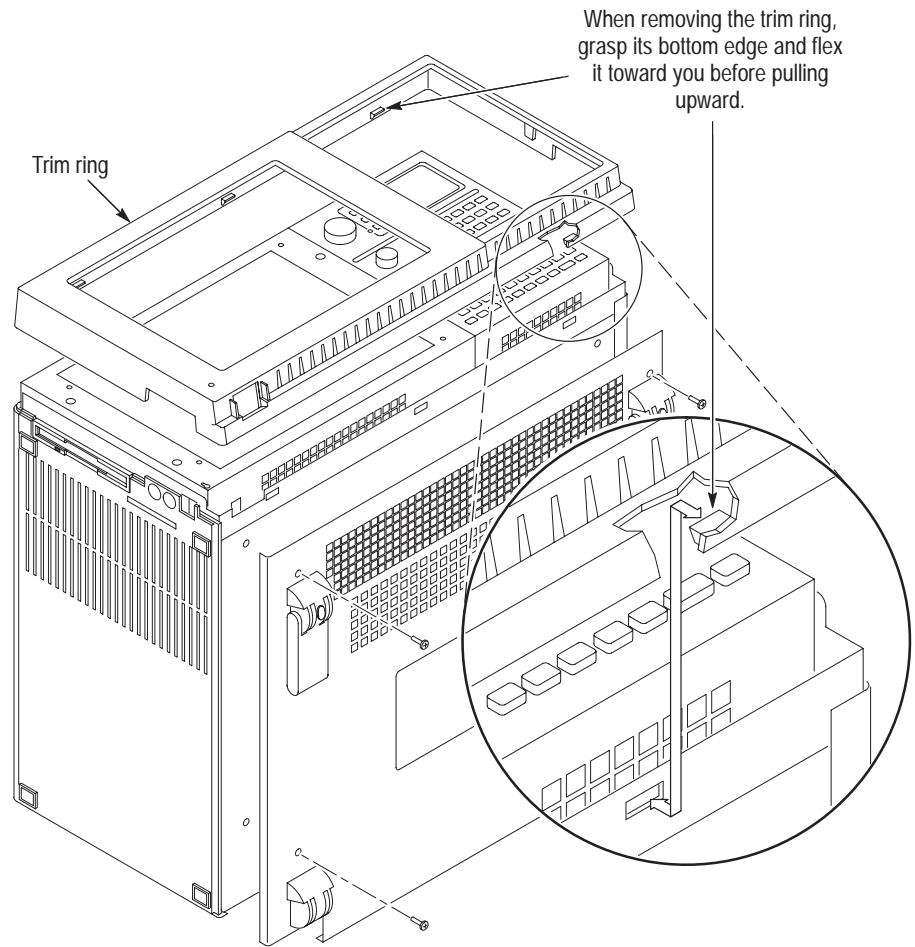


Figure 3-4: Trim ring removal

## Removing the Top Cover

You will need a screwdriver with a T-15 Torx tip.

Use the following procedure to remove the top cover:

1. Set the mainframe with the bottom on the work surface and the front facing you.
2. Unsnap the accessories pouch from the top cover.
3. Remove the four screws that attach the top cover to the mainframe. (See Figure 3–5.)
4. Lift the top cover off.

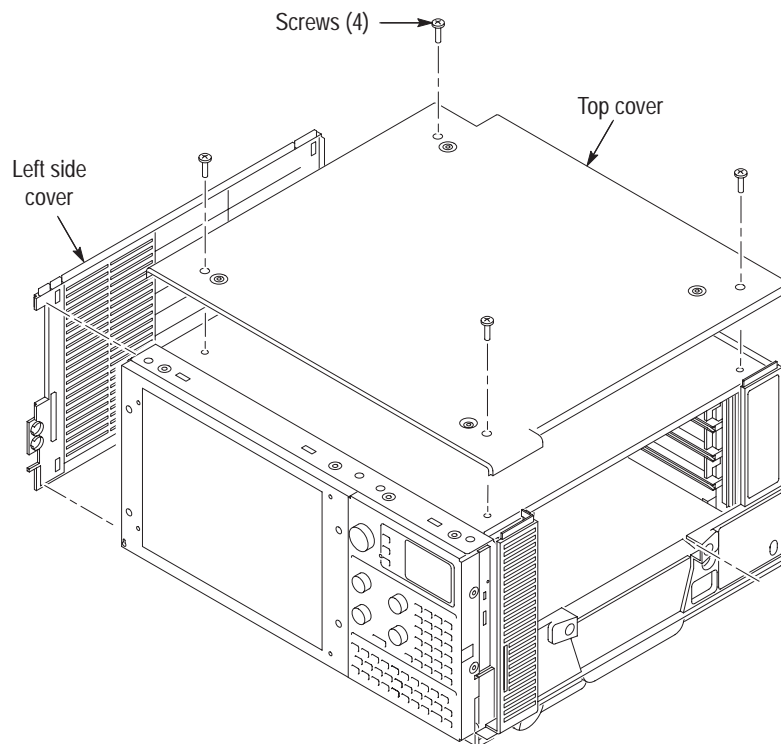


Figure 3–5: Top and side cover removal



## Removing the Left Side Cover and EMI Shield

No screws attach the left side cover to the mainframe. However, you must loosen the two screws closest to the left side of the bottom cover in order to remove the left side cover.

You will need a screwdriver with a size T-15 Torx tip to perform this procedure.

Use the following procedure to remove the left side cover:

1. Loosen the two screws on the bottom cover closest to the left side of the mainframe. (See Figure 3-4 on page 3-5.)
2. Remove the left side cover.
3. Remove the eight screws securing the EMI shield to the chassis (see Figure 3-6), and then lift off the EMI shield.

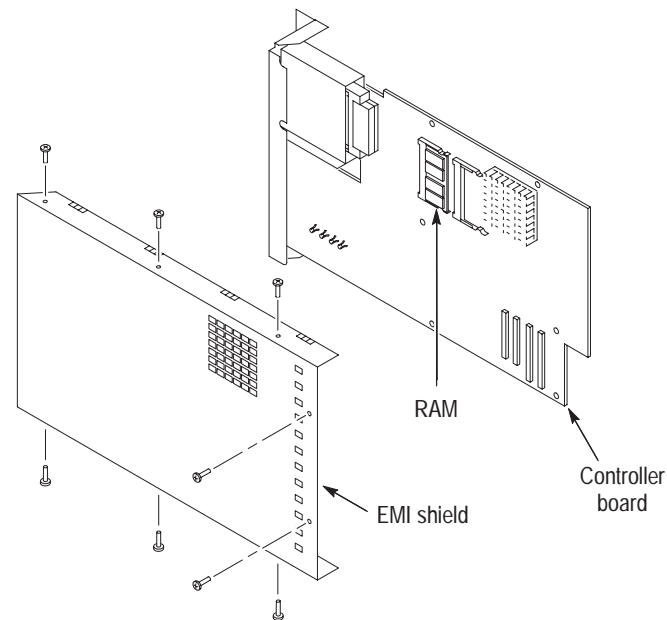


Figure 3-6: Internal parts

## Installing the SO DIMM

The SO DIMM memory is located on the controller board.

Use the following procedure to install new RAM board:

1. Insert the new RAM board. Press down gently until the clips that hold the RAM boards to the controller board snap into place.

2. Reposition the EMI shield, and then fasten the eight screws that secure it to the chassis.

## Installing the Left Side Cover

You will need a screwdriver with a size T-15 Torx tip to perform this procedure.

Reposition the left side cover and tighten the two bottom cover screws nearest the left side of the mainframe.

## Installing the Top Cover

You will need a screwdriver with a size T-15 Torx tip to perform this procedure.

Use the following procedure to reinstall the top cover:

1. Reposition the top cover on the portable mainframe.
2. Insert the four screws that attach the top cover to the mainframe. See Figure 3-5 on page 3-6.
3. Reattach the accessories pouch to the top cover. (It snaps on.)

## Installing the Trim Ring

Replace the trim ring on the front panel. Start at the top edge and work around to the bottom until the three plastic snaps engage. Press the trim ring down all around the edges until it is completely seated.

## Verifying Operation

Follow the steps below to ensure proper operation of the instrument:

1. Run the memory verification tests from the QA+Win32 diagnostics.
2. Exit all applications and close all open windows.
3. Click Start in the Windows tool bar.
4. Select Programs from the Start menu.
5. Select the QA+Win32 application from the Programs menu.
6. Run the memory tests from the QA+Win32 menu. If needed, refer to the QA+Win32 online help for more information on running QA+Win32.
7. Power down the mainframe, and then power it up before running the TLA application software.





# TLA 7UP Option 04



# Maximum Hard Disk Drive Upgrade Instructions

TLA 7UP option 04 supports the field upgrade of the hard disk drive for your TLA 704 Color Portable Mainframe, your TLA 711 Color Benchtop Mainframe, your TLA 714 Color Portable Mainframe, or your TLA 720 Color Benchtop Mainframe.

The following hard disk drive upgrades are available, depending on which mainframe you have.

## TLA 704 and TLA 711 Mainframe Hard Disk Drive Upgrades

- Maximum size of hard disk drive on the TLA 704 Color Portable Mainframe.
- Maximum size of hard disk drive on the TLA 711 Color Benchtop Mainframe.

## TLA 714 and TLA 720 Mainframe Hard Disk Drive Upgrades

- Maximum size of replaceable hard disk drive on the TLA 714 Color Portable Mainframe.
- Additional replaceable hard disk drives.

The following are field installed upgrades only.

- Fixed hard disk drive on the TLA 714 Color Portable Mainframe.
- Fixed hard disk drive on the TLA 720 Color Benchtop Mainframe.

## Instruments

TLA 704 Color Portable Mainframe	All Serial Numbers
TLA 711 Color Benchtop Mainframe	All Serial Numbers
TLA 714 Color Portable Mainframe	All Serial Numbers
TLA 720 Color Benchtop Mainframe	All Serial Numbers

## Minimum Tool and Equipment List

Table 4-1: Tools required for installing upgrade

Item number	Name	Description
1	Torx-drive screwdriver with a T-7 tip	Standard tool
2	Small flat blade screwdriver	Standard tool
3	#0 Phillips screwdriver	Standard tool
4	#1 Phillips screwdriver	Standard tool
5	Diagonal cutters (to remove cable ties)	Standard tool
6	Three-sixteenth (3/16) inch nut driver	Standard tool
7	Needle nose plier	Standard tool
8	Torx-drive screwdriver with a T-10 tip	Standard tool
9	Torx-drive screwdriver with a T-15 tip	Standard tool

## Kit Parts List

Table 4-2: TLA 7UP Option 04 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	650-4019-00	Replaceable hard disk drive cartridge and jumper, with no software loaded.
1	342-1027-00	Lexan Insulator (TLA 711 Only) <sup>1</sup>
1	063-2895-XX	TLA 704/711 BIOS software on a floppy disk
1	071-0608-XX	Bootable Floppy Disk Instructions Read This First
1	N/A	TLA 7UP kit label

<sup>1</sup> The Lexan insulator is only used on the TLA 711 benchtop controller.



## Installation Instructions

These instructions are for personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the appropriate product manual. Contact your nearest Tektronix, Inc., 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.*

---



# TLA 704 Color Portable Mainframe Maximum Hard Disk Drive Installation Instructions

These instructions direct you to replace the existing hard disk drive with a greater capacity, but unformatted, hard disk drive.

Prior to performing these procedures, use the Windows Back Up tool to back up any user files stored on the hard disk drive. Use the backup media that was shipped with the instrument to reinstall the operating system and applications.

---

**NOTE.** *The following instructions are for upgrading the TLA 704 Color Portable Mainframe.*

*If you are upgrading a TLA 711 Color Benchtop Controller, proceed to the instructions on page 4–17.*

---

These instructions assume that you are familiar with servicing the instrument. If you need further details for disassembling or reassembling the instrument, refer to the *TLA 704 Color Portable Mainframe Service Manual*.

Contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service Center for installation assistance.



---

**CAUTION.** *To prevent static discharge damage, service the instrument 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.*

---

These instructions must be performed in the sequence in which they are presented; they include the following procedures:

- *Disassembly*, which removes the external parts needed to access the hard disk drive inside the portable mainframe.
- *Hard Disk Drive Replacement*, which removes the existing hard disk drive and installs the upgrade hard disk drive.
- *Reassembly*, which reinstalls parts removed in *Disassembly*.
- *Verify Operation*, which reinstalls the software on the new hard disk drive and runs some verification tests on the hard disk drive.

## Removing the Hard Disk Drive From The Cartridge

If the hard disk drive you are installing is not a replaceable type, but rather a fixed hard disk drive, the hard disk drive must be removed from inside of the removable hard disk drive cartridge that was received with this kit.

Refer to Figure 4-1 and follow these steps:

1. Remove the four screws that fasten the hard disk drive to the cartridge.
2. Carefully remove the hard disk drive from the cartridge, and remove the cable assembly from the connector on the hard disk drive.

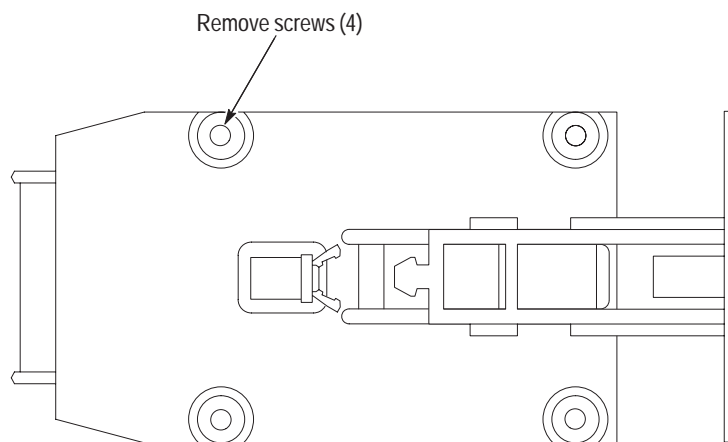


Figure 4-1: Removing the hard disk drive from the cartridge

## Removing the Trim Ring

You will need a screwdriver with a size T-15 Torx tip to perform this procedure.

1. Disconnect the power cord from the mainframe.
2. Remove the modules and probes from the mainframe.
3. Set the mainframe on your work surface with the cord wrap feet facing down and with the bottom facing you.
4. Grasp the trim ring by its bottom edge and pull toward you to detach the three plastic snaps.

Alternatively, you can use a flat blade screwdriver or other small prying tool to help you detach the snaps.

Swing the bottom of the ring upward and work the rest of the ring off the front panel.

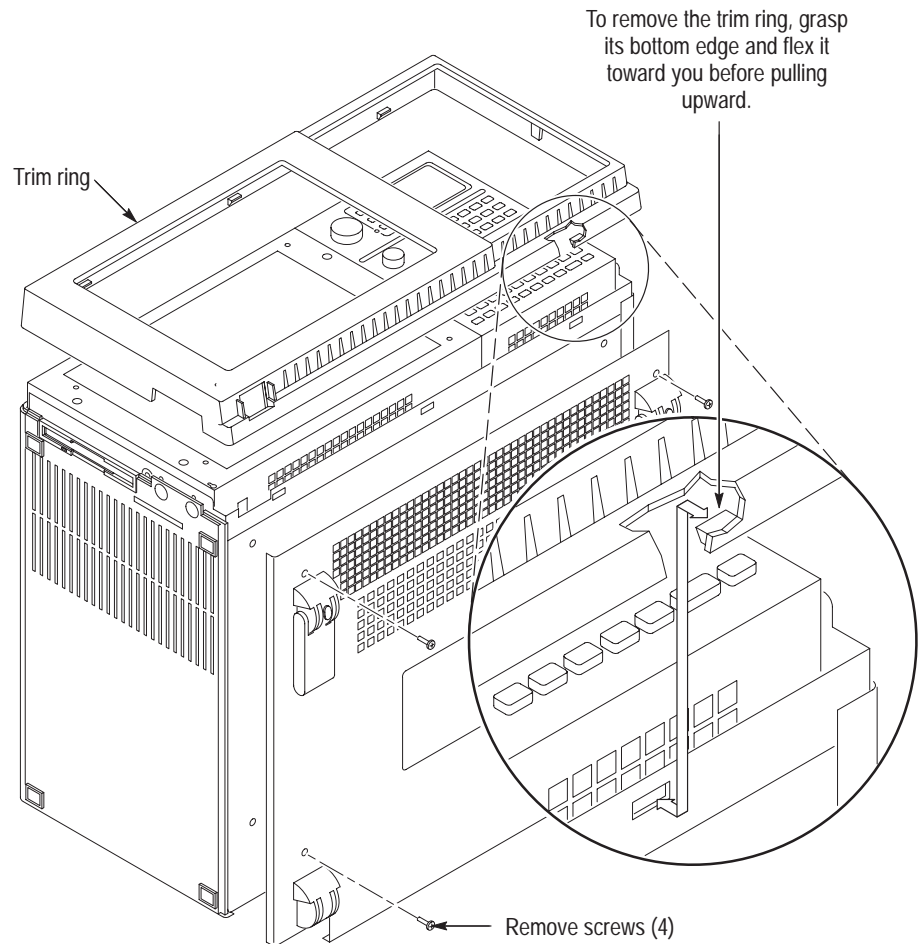


Figure 4-2: Trim ring removal

## Removing the Flat Panel Display

To remove the flat panel display, follow these instructions:

1. Remove the five screws that attach the flat panel display assembly to the mainframe. (See Figure 4-3.)
2. Lift the bottom edge of the flat panel display assembly and rotate it upward and off the front face of the mainframe.
3. Detach the cable connecting the flat panel display assembly to the interface board.

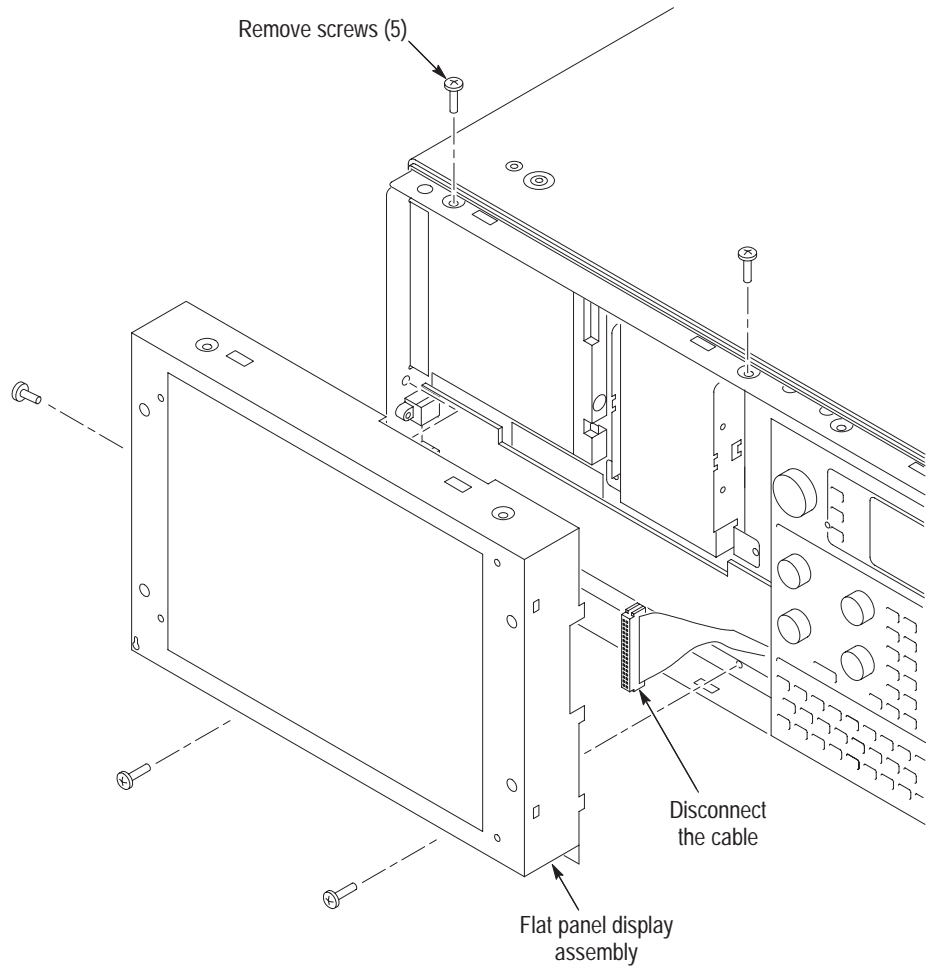


Figure 4-3: Flat panel display assembly removal

## Replacing the Hard Disk Drive

You will need screwdrivers with a size T-15 Torx tip and a size T-10 Torx tip to perform this procedure.

**Removal** Use the following procedure to remove the hard disk drive:

1. Locate the hard disk drive in Figure 4–4.
2. Detach the cable at the bottom of the hard disk drive by pressing down (away from the hard disk drive) on the connector.
3. Remove the four screws that attach the hard disk drive bracket to the chassis.
4. Lift the hard disk drive and bracket out of the chassis.
5. Remove the four screws that attach the hard disk drive to the bracket.
6. Lift out the hard disk drive.

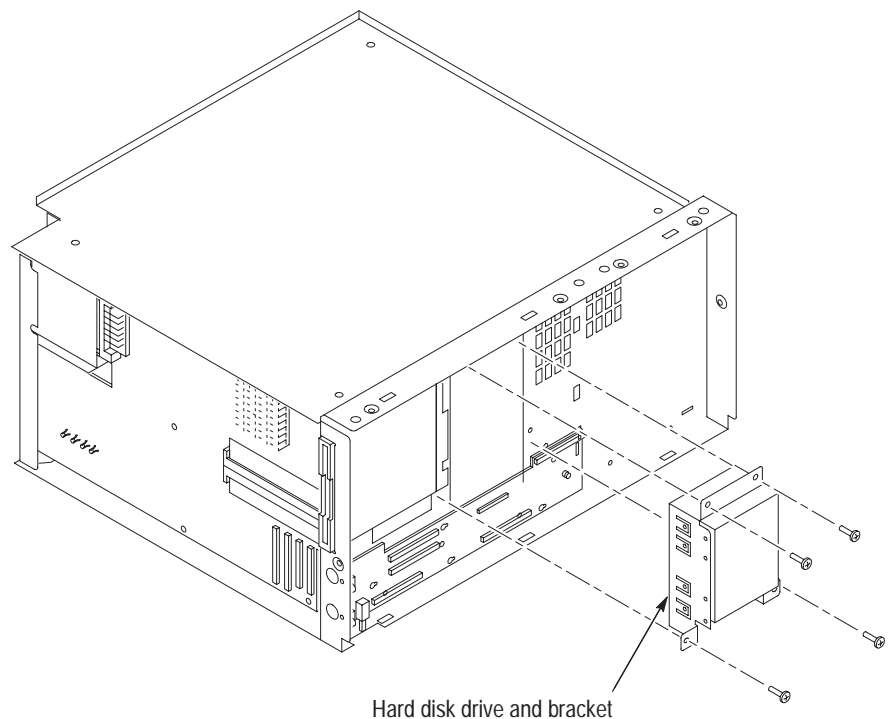


Figure 4–4: Hard disk drive replacement

**Installation** Use the following procedure to install the hard disk drive:

1. Reposition the hard disk drive in the bracket.
2. Install the four screws that attach the hard disk drive to the bracket.
3. Reposition the hard disk drive and bracket in the chassis.
4. Install the four screws that attach the hard disk drive bracket to the chassis.
5. Reattach the cable at the bottom of the hard disk drive by carefully aligning the pins on the hard disk drive to the cable connector.
6. Gently press the cable connector into the bottom of the hard disk drive.

## Installing the BIOS Flash Jumper

The BIOS flash jumper was factory installed on some controllers. If the flash jumper is already in place, disregard this step; otherwise, place a shorting jumper at jumper position H2, shorting pins one and three. Refer to Figure 4–5.

You do not need to remove the BIOS jumper after the BIOS is updated.

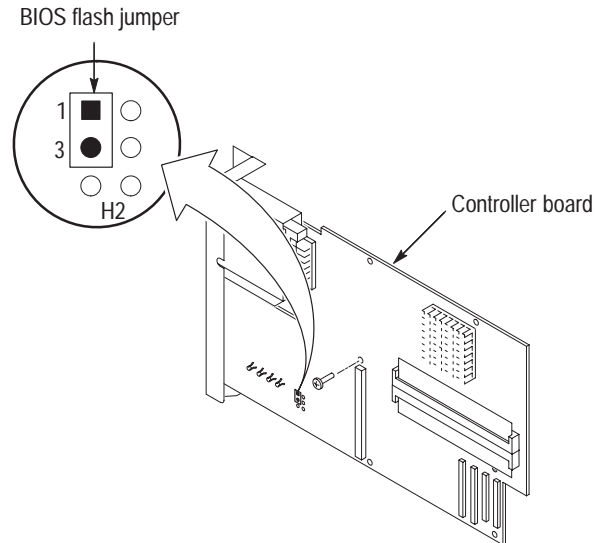


Figure 4–5: BIOS jumper location



## Reassembly

Use the following procedure to reassemble the instrument:

1. Reattach the cable connecting the flat panel display assembly to the interface board.
2. Reinstall the flat panel display assembly by first inserting the top edge and then rotating it downward into position. (Be sure the tabs are engaged at the top of the assembly.)
3. Install the five screws that attach the flat panel display assembly to the mainframe. Refer Figure 4–3 on page 4–8.
4. Replace the trim ring on the front panel. Start at the top edge and work around to the bottom (using care not to damage the light pipe or power switch), until the three plastic snaps engage.

Press the trim ring down all around the edges until it is completely seated.

5. Reinstall the modules and probes that were removed during disassembly.
6. Connect the power cord to the mainframe.

## Setting Up the Controller BIOS

The logic analyzer has a built-in setup program where you can set some basic input and output characteristics. In most cases, there is no need to access the setup program. If you need to access the setup program, power on the logic analyzer and press function key F2 on the keyboard (ALT, CTRL, F2 keys simultaneously on the portable mainframe front panel) before the logic analyzer boots the Windows 95 operating system.

Table 4–3 on the next page lists the default settings for the BIOS setup. You may need to refer to this information after updating the software or making other changes.



---

**CAUTION.** Do not change any of the settings if you are unfamiliar with the setup program. Selecting an incorrect setup can cause the logic analyzer to malfunction.

---

If you need to change any of the settings to match those listed in Table 4–3, follow the on-screen instructions.

**Table 4–3: Controller BIOS setup**

Parameter	Factory setting	Submenu parameter	Factory setting
<b>Main menu</b>			
System Time	Set to current date		
System Date	Set to current time		
Diskette A	1.44 MB, 3 1/2		
Diskette B	Not Installed		
IDE Adapter 0 Master	(C:[ <i>hard disk size</i> ])	Autotype Fixed Disk	Select <i>Enter</i>
		Type	<i>Hard disk size</i>
		Cylinders	<i>Number of cylinders</i>
		Heads	<i>Number of heads</i>
		Sectors/track	<i>Number of sectors/track</i>
		Write Precomp	None
		Multi-sector transfers	<i>Set by Autotype</i>
		LBA Mode Control	<i>Set by Autotype</i>
		32-Bit I/O	Disabled
		Transfer Mode	<i>Set by Autotype</i>
IDE Adapter 0 Slave	(None)		
IDE Adapter 1 Master	(None)		
IDE Adapter 1 Slave	(None)		
Video System	EGA/VGA		
Memory Cache		External Cache	Enabled
		Cache System BIOS area:	Enabled
		Cache Video BIOS area:	Enabled
		Cache Memory Region	
		CC00 – CFFF:	Disabled
		D000 – D3FF:	Disabled
		D400 – D7FF:	Disabled
		D800 – DBFF:	Disabled
		DC00 – DFFF:	Disabled
Memory Shadow		System Shadow	Enabled
		Video Shadow:	Enabled
		Regions with Legacy Expansion ROMS	
		CC00 – CFFF:	ROM

Table 4-3: Controller BIOS setup (Cont.)

Parameter	Factory setting	Submenu parameter	Factory setting
		D000 – D3FF:	ROM
		D400 – D7FF:	ROM
		D800 – DBFF:	ROM
		DC00 – DFFF:	ROM
Boot Sequence:	A: then C:	Boot Delay	0
		Boot Sequence:	A: then C:
		Setup Prompt	Enabled
		POST Errors	Enabled
		Floppy Check	Enabled
		Summary Screen	Enabled
NUMLOCK:	OFF	NUMLock	Off
		Key Click	Disabled
		Keyboard auto-repeat rate	30/sec
		Keyboard auto-repeat delay	1/4 sec
System Memory	640 KB		
Extended Memory	<i>Installed memory – 640 K</i>		
<b>Advanced menu</b>			
Integrated Peripherals		COM A	3F8, IRQ4
		COM B	2F8, IRQ3
		LPT Port	378, IRQ7
		LPT Mode	ECP
		Diskette Controller	Enabled
		Local Bus IDE Adapter	both
Advanced Chipset Control		DRAM Speed	60 ns <sup>1</sup>
		DMA Aliasing	Enabled
		8 Bit I/O Recovery	4.5
		16 Bit I/O Recovery	4.5
		IRQ12 Used By	PS/2 Mouse
		ECC/Parity	Disabled
Plug & Play O/S	No		
Reset Configuration Data	No		
Large Disk Access Mode:	DOS		

**Table 4–3: Controller BIOS setup (Cont.)**

Parameter	Factory setting	Submenu parameter	Factory setting
Enable SimulScan Mode:	Disabled		
Flash ATA PC Card Booting:	Disabled		
<b>Power menu</b>			
APM:	Enabled <sup>2</sup>		
Power Savings	Customize <sup>3</sup>		
Standby Timeout:	Disabled		
Suspend Timeout:	Disabled		
Standby CPU Speed:	MAX		
Fixed Disk Timeout:	Disabled		
CRT:	ON		
Standby Timer Reset Events			
Keyboard	Enabled		
Mouse	PS/2 (IRQ12)		
Standby Break Events			
IRQ0	Disabled		
IRQ1	Auto		
IRQ3	Auto		
IRQ4	Auto		
IRQ5	Disabled		
IRQ6	Disabled		
IRQ7	Disabled		
IRQ8	Disabled		
IRQ9	Disabled		
IRQ10	Disabled		
IRQ11	Disabled		
IRQ12	Auto		
IRQ13	Disabled		
IRQ14	Disabled		
IRQ15	Disabled		

Table 4-3: Controller BIOS setup (Cont.)

Parameter	Factory setting	Submenu parameter	Factory setting
Standby Wakeup Events			
Keyboard	Enabled		
Mouse	PS/2 (IRQ12)		

- <sup>1</sup> DRAM speed was set to 70 ns for TLA 700 Series controllers with BIOS version 1.00.11 or earlier.
- <sup>2</sup> APM is set to Disabled for TLA 700 Series controllers with BIOS version 1.00.11 or earlier.
- <sup>3</sup> Power Savings is set to Customize when the APM is enabled. This allows Windows to manage power use for the instrument as indicated on the Power property page of the Power icon in the Control Panel. Power Savings was set to Disabled with BIOS version 1.00.11 or earlier.

## Reinstalling Software

Reinstalling software on the new hard disk is a two-step process.

**Step 1.** Install the software that originally came with your TLA 704 mainframe. To do this, use the software media that came with your original TLA 704 mainframe. Refer to *Appendix B: Reinstalling Software* in the *TLA 700 Series Installation Manual (070-9774-02)* and reinstall the software with the following exceptions:

- Skip the BIOS upgrade instructions (you've already done these steps in this manual).
- When partitioning the new hard disk using the FDISK procedure, be sure to answer yes (Y) when you are asked whether or not you want Large Disk Support.

**Step 2.** Use the procedure in the *TLA Application Software Version 3.2 Upgrade Instructions* beginning on page 6-3 to upgrade the software to the latest version.



# TLA 711 Color Benchtop Mainframe Maximum Hard Disk Drive Installation Instructions

These instructions direct you to replace your existing hard disk drive with a greater capacity unformatted hard disk drive.

Prior to performing these procedures, use the Windows Back Up tool to back up any user files stored on the hard disk drive. Use the backup media that was shipped with the instrument to reinstall the operating system and applications.

---

**NOTE.** *The following instructions are for upgrading the TLA 711 Color Benchtop Controller.*

*Read the following paragraph closely.*

---

These instructions require you to be familiar with servicing the instrument, because of the complexity of the Controller subassembly.

If you are not familiar with servicing the instrument, it is strongly recommended that you contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service for installation.



---

**CAUTION.** *To prevent static discharge damage, service the instrument 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.*

---

These instructions must be performed in the sequence in which they are presented; they include the following procedures:

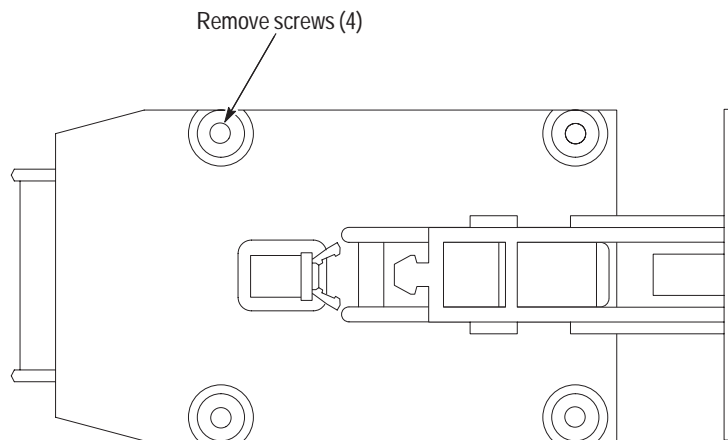
- *Disassembly*, which removes the external parts needed to remove the Controller subassembly from its enclosure to access hard disk drive.
- *Hard Disk Drive Replacement*, which removes the existing hard disk drive and installs the upgrade hard disk drive.
- *Reassembly*, which reinstalls parts removed in *Disassembly*.
- *Verify Operation*, which reinstalls the software on the new hard disk drive and runs some verification tests on the new hard disk drive.

## Remove the Hard Disk Drive From The Cartridge

If the hard disk drive you are installing is not a replaceable type, but rather a fixed hard disk drive, the hard disk drive must be removed from inside of the removable hard disk drive cartridge that was received with this kit.

Refer to Figure 4–6 and follow these steps:

1. Remove the four screws that fasten the hard disk drive to the cartridge.
2. Carefully remove the hard disk drive from the cartridge, and remove the cable assembly from the connector on the hard disk drive.



**Figure 4–6: Removing the hard disk drive from the cartridge**

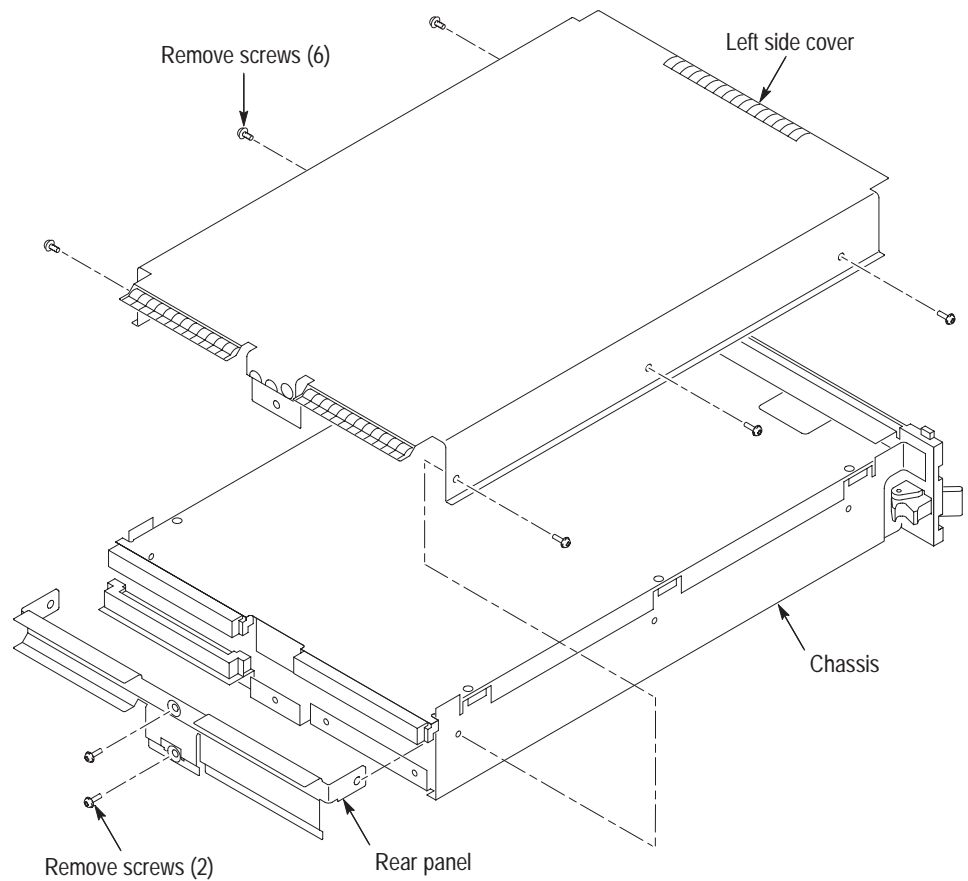
## Disassembly

Verify that the power cord has been disconnected from the mainframe. Remove any connected cables or probes from the benchtop controller and remove the benchtop controller from the mainframe.

You will need a T-10 Torx tip driver to remove the left side cover and rear panel.

1. Place the module on its right side as shown in Figure 4–7.
2. Remove the six screws from the top and bottom of the left side cover.
3. Remove the two screws from the rear panel. (See Figure 4–7.)
4. Remove the rear panel.
5. Remove the left side cover.





**Figure 4-7: Left side cover and rear panel removal**

You will need a T-10 Torx tip driver, a small flat-blade screwdriver, a #0 Phillips screwdriver, a #1 Phillips screwdriver, a 3/16 inch nut driver, and a needle nose plier to remove the Controller subassembly.

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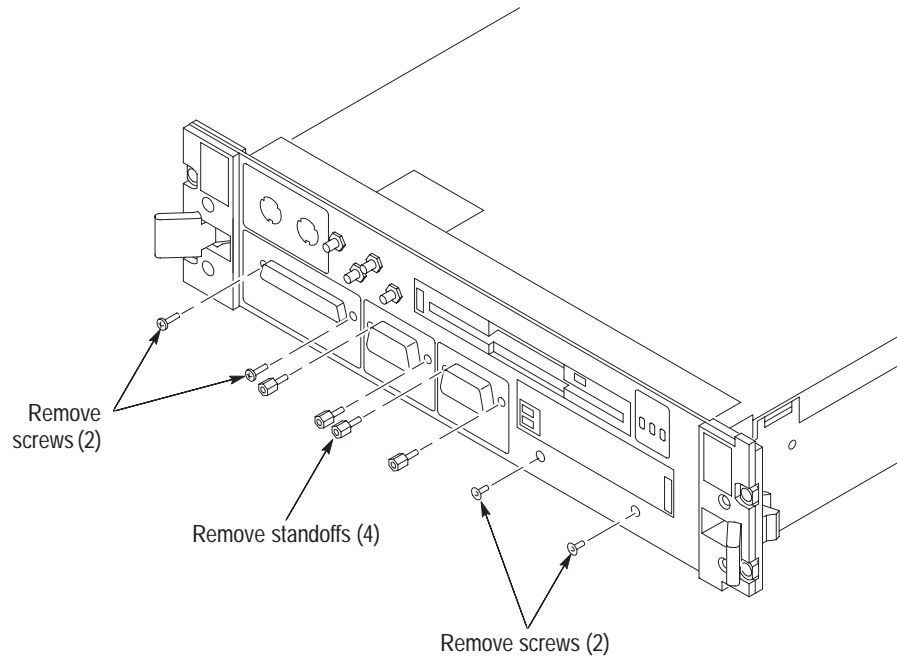
**NOTE.** The following steps remove the subassembly from the enclosure to gain access to the internal parts.

*Note that subassembly removal is a two part procedure: first you will remove the front panel hardware to relieve mechanical stress on the soldered-on connectors. Second, you will remove the subassembly from the enclosure.*

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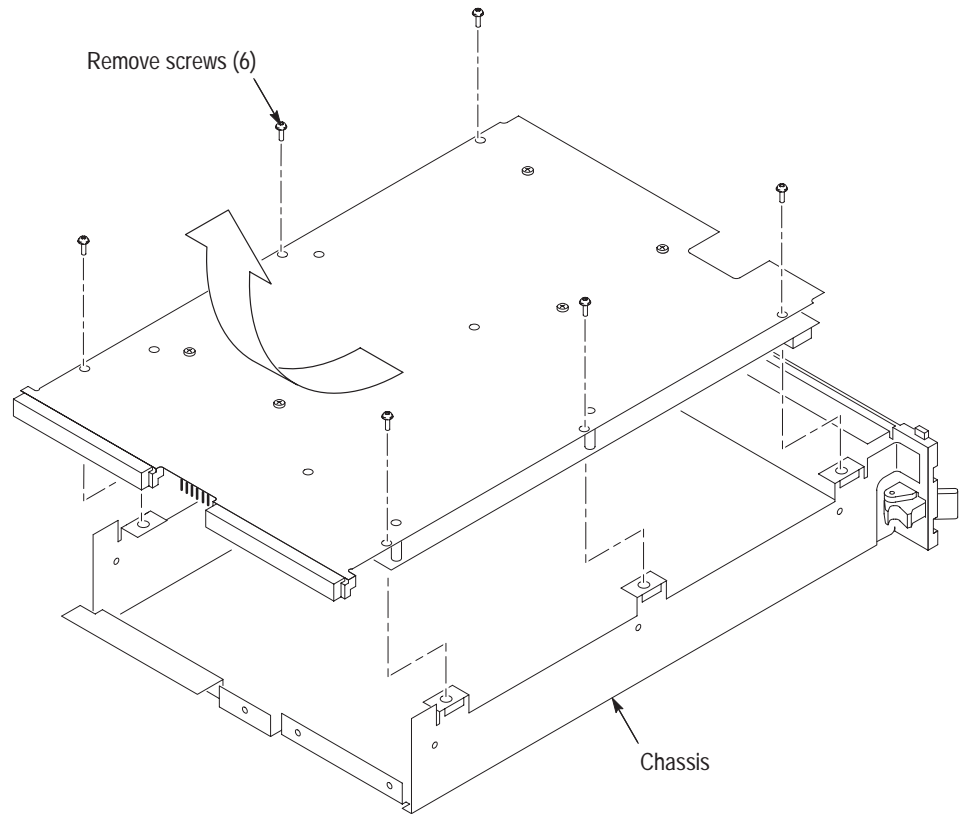
6. Remove the four 3/16 inch standoffs from the SVGA OUT and COM connectors. Refer to Figure 4-8.
7. Remove the two screws from the LPT connector.
8. Remove the two Phillips screws, located to the right of the PC card slot.

9. DO NOT remove the 1/4 inch nuts on the SMB connectors.



**Figure 4-8: Front panel hardware removal**

10. Remove the T-10 Torx screws that attach the subassembly to the chassis.  
Refer to Figure 4-9.



**Figure 4-9: Subassembly removal**



**CAUTION.** The subassembly is attached to the chassis by the four SMB connector cable assemblies. To avoid damaging the subassembly, use care when lifting the subassembly out.

- 11.** Carefully lift the subassembly part way out of the chassis.
- 12.** Carefully turn the subassembly over and disconnect the four SMB cable assemblies on the controller board. See Figure 4-10 and Table 2-4 for the color code placement of the four SMB cable assemblies.
- 13.** Pass the SMB cable assemblies through the space between the controller board and the adapter board to remove the subassembly from the chassis.

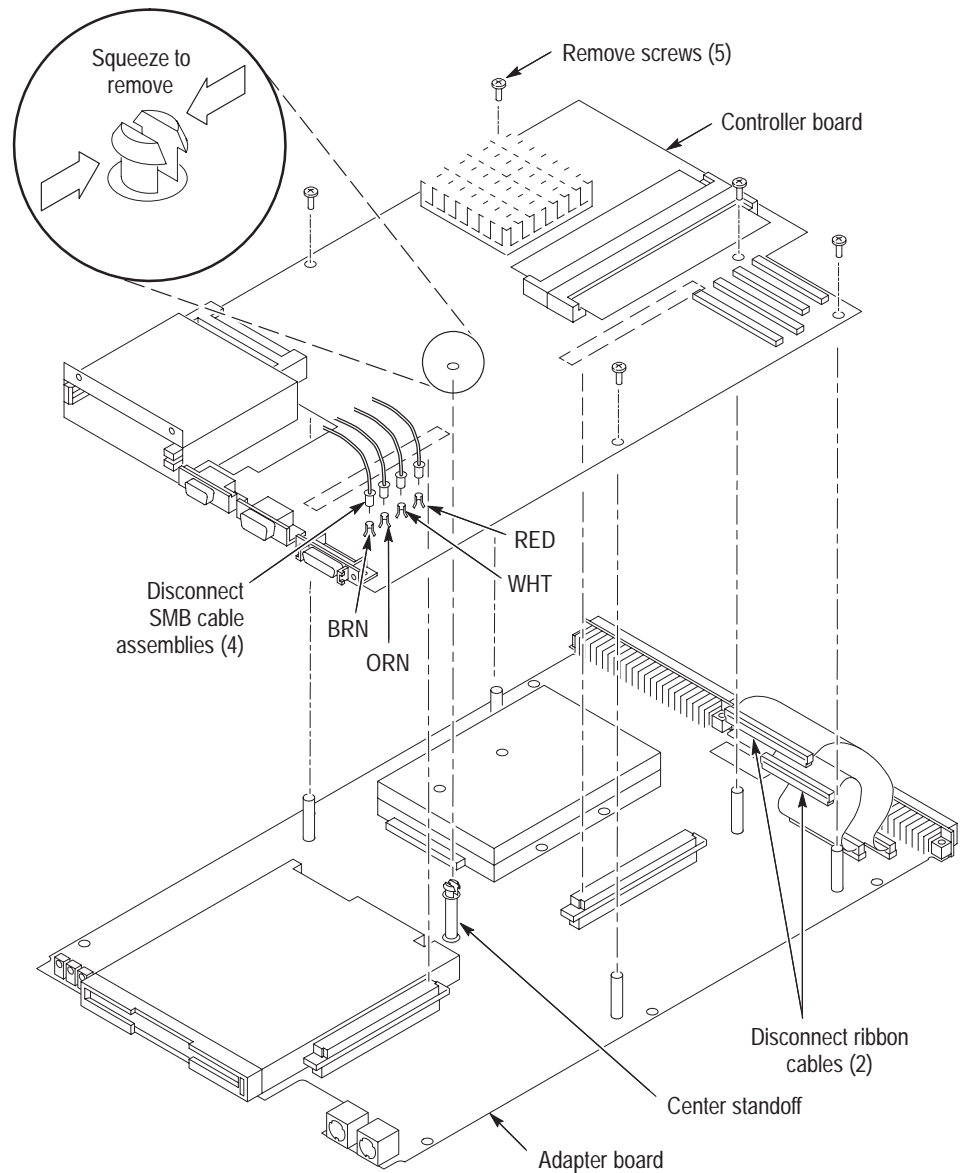
## Hard Disk Drive Replacement

You will need a #0 Phillips screwdriver and a #1 Phillips screwdriver.

**Removal** The hard disk drive is mounted to the adapter board, which must be separated from the controller board in order to replace the hard disk drive. Refer to Figure 4–10 and follow these steps:

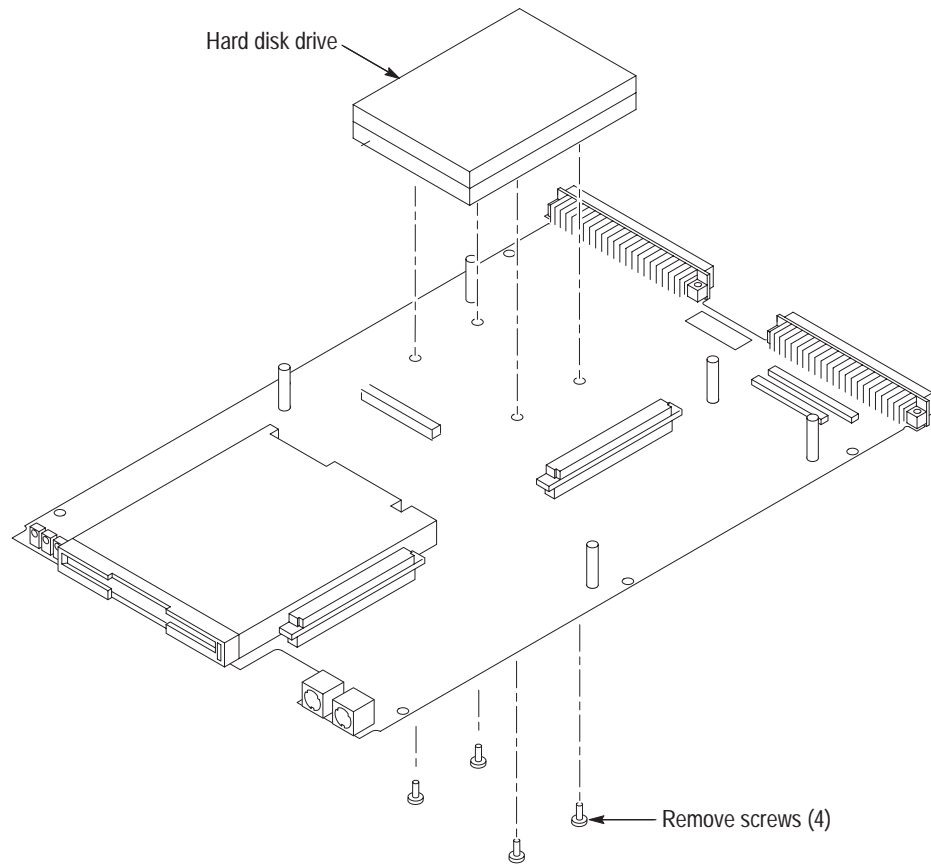
1. Disconnect the two ribbon cables from the component side of the controller board. Note the location of the ribbon cables for reassembly.
2. Remove the five Phillips screws that attach the controller board to the adapter board.
3. Squeeze the two sides of the standoff located in the center of the controller board to unlatch the standoff while separating the two boards.

You might feel some mechanical resistance from the two 96-pin interconnections between the two boards.



**Figure 4-10: Controller board and adapter board interconnection**

4. Remove the four Phillips screws securing the hard disk drive to the solder side of the adapter board. (See Figure 4-11.)
5. Carefully slide the hard disk drive away from the hard disk drive connector.

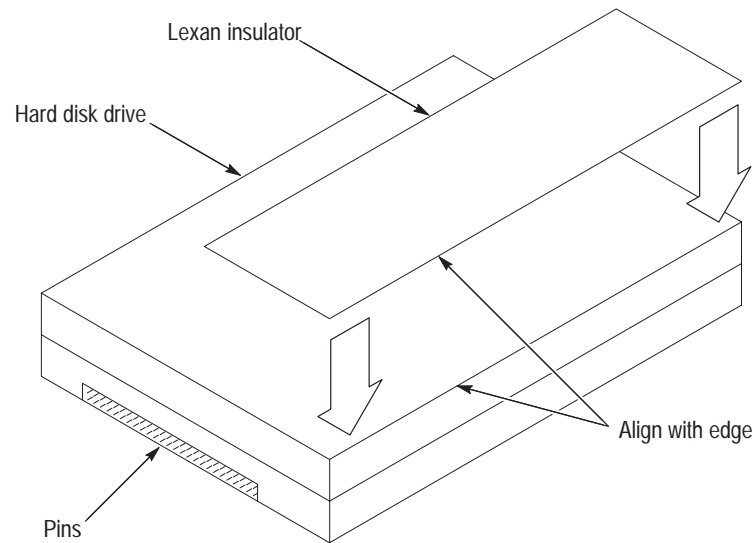


**Figure 4-11: Hard disk drive removal**

**Installation**

To install the hard disk drive you will need a #0 Phillips screwdriver and a #1 Phillips screwdriver.

1. Peel the backing off of the Lexan insulator included in the kit and apply it to the hard disk drive. Refer to Figure 4-12.



**Figure 4-12: Applying the Lexan insulator**

2. Carefully align the connector pins on the back of the hard disk drive to the socket on the adapter board. Gently slide the hard disk drive into the socket. Verify that all of the pins are fully engaged and that no pins are bent.
3. Install the four screws to secure the hard disk drive to the adapter board.
4. Connect the controller board to the adapter board by aligning the two connectors between the controller board and the adapter board.

Locate the center standoff (refer to Figure 4-10 on page 4-23) and center it on the hole on the controller board. Carefully apply pressure to both boards until the two connectors engage.

5. Connect the two ribbon cables to the component side of the controller board. Note the location of the ribbon cables from the disassembly procedure, step 1.
6. Install the five screws to secure the controller board to the adapter board.

## Reassembly

To install the subassembly into the enclosure follow these steps:

1. Pass the four SMB cable assemblies through the space between the controller board and the adapter board.
2. Carefully turn the subassembly over and connect the four SMB cable assemblies to the four SMB connectors on the controller board. Figure 4–10 on page 4–23 shows the locations for plugging in the four connectors.

Table 4–4 identifies each connector by color code and signal name.

**Table 4–4: Signal wire identification**

Signal wire color	Signal identification
White (WHT)	EXTERNAL SIG OUT
White / Brown stripe (BRN)	EXTERNAL SIG IN
White / Red stripe (RED)	SYSTEM TRIG OUT
White / Orange stripe (ORN)	SYSTEM TRIG IN

3. Carefully slide the subassembly into the chassis. Locate all of the front panel connectors into the proper cut-outs on the front panel.
4. Attach the six T-10 Torx screws that hold the subassembly to the chassis. DO NOT tighten the screws until the front panel hardware has been secured.
5. Install the two screws located to the right of the PC card slot.
6. Install the four standoffs on the SVGA OUT and COM connectors.
7. Install the two screws on the LPT connector.
8. Tighten the six screws that secure the subassembly to the chassis.
9. Install the module in the mainframe and connect any cables that were removed during disassembly, including the power cord.



## Controller BIOS Setup

The logic analyzer has a built-in setup program where you can set some basic input and output characteristics. In most cases, there is no need to access the setup program. If you need to access the setup program, power on the logic analyzer and press function key F2 on the keyboard (ALT, CTRL, F2 keys simultaneously on the portable mainframe front panel) before the logic analyzer boots the Windows 95 operating system.

Table 4–5 lists the default settings for the BIOS setup. You may need to refer to this information after updating the software or making other changes.



**CAUTION.** Do not change any of the settings if you are unfamiliar with the setup program. Selecting an incorrect setup can cause the logic analyzer to malfunction.

If you need to change any of the settings to match those listed in Table 4–5, follow the on-screen instructions.

Table 4–5: Controller BIOS setup

Parameter	Factory setting	Submenu parameter	Factory setting
<b>Main menu</b>			
System Time	Set to current date		
System Date	Set to current time		
Diskette A	1.44 MB, 3 1/2		
Diskette B	Not Installed		
IDE Adapter 0 Master	(C:[hard disk size])	Autotype Fixed Disk	Select <i>Enter</i>
		Type	<i>Hard disk size</i>
		Cylinders	<i>Number of cylinders</i>
		Heads	<i>Number of heads</i>
		Sectors/track	<i>Number of sectors/track</i>
		Write Precomp	None
		Multi-sector transfers	<i>Set by Autotype</i>
		LBA Mode Control	<i>Set by Autotype</i>
		32-Bit I/O	Disabled
		Transfer Mode	<i>Set by Autotype</i>
IDE Adapter 0 Slave	(None)		
IDE Adapter 1 Master	(None)		
IDE Adapter 1 Slave	(None)		

**Table 4–5: Controller BIOS setup (Cont.)**

Parameter	Factory setting	Submenu parameter	Factory setting
Video System	EGA/VGA		
Memory Cache		External Cache	Enabled
		Cache System BIOS area:	Enabled
		Cache Video BIOS area:	Enabled
		Cache Memory Region	
		CC00 – CFFF:	Disabled
		D000 – D3FF:	Disabled
		D400 – D7FF:	Disabled
		D800 – DBFF:	Disabled
		DC00 – DFFF:	Disabled
Memory Shadow		System Shadow	Enabled
		Video Shadow:	Enabled
		Regions with Legacy Expansion ROMS	
		CC00 – CFFF:	ROM
		D000 – D3FF:	ROM
		D400 – D7FF:	ROM
		D800 – DBFF:	ROM
		DC00 – DFFF:	ROM
Boot Sequence:	A: then C:	Boot Delay	0
		Boot Sequence:	A: then C:
		Setup Prompt	Enabled
		POST Errors	Enabled
		Floppy Check	Enabled
		Summary Screen	Enabled
NUMLOCK:	OFF	NUMLock	Off
		Key Click	Disabled
		Keyboard auto-repeat rate	30/sec
		Keyboard auto-repeat delay	1/4 sec
System Memory	640 KB		
Extended Memory	<i>Installed memory – 640 K</i>		

Table 4-5: Controller BIOS setup (Cont.)

Parameter	Factory setting	Submenu parameter	Factory setting
<b>Advanced menu</b>			
Integrated Peripherals		COM A	3F8, IRQ4
		COM B	2F8, IRQ3
		LPT Port	378, IRQ7
		LPT Mode	ECP
		Diskette Controller	Enabled
		Local Bus IDE Adapter	both
Advanced Chipset Control		DRAM Speed	60 ns <sup>1</sup>
		DMA Aliasing	Enabled
		8 Bit I/O Recovery	4.5
		16 Bit I/O Recovery	4.5
		IRQ12 Used By	PS/2 Mouse
		ECC/Parity	Disabled
Plug & Play O/S	No		
Reset Configuration Data	No		
Large Disk Access Mode:	DOS		
Enable SimulScan Mode:	Disabled		
Flash ATA PC Card Booting:	Disabled		
<b>Power menu</b>			
APM:	Enabled <sup>2</sup>		
Power Savings	Customize <sup>3</sup>		
Standby Timeout:	Disabled		
Suspend Timeout:	Disabled		
Standby CPU Speed:	MAX		
Fixed Disk Timeout:	Disabled		
CRT:	ON		
Standby Timer Reset Events			
Keyboard	Enabled		
Mouse	PS/2 (IRQ12)		
Standby Break Events			
IRQ0	Disabled		
IRQ1	Auto		
IRQ3	Auto		

**Table 4-5: Controller BIOS setup (Cont.)**

Parameter	Factory setting	Submenu parameter	Factory setting
IRQ4	Auto		
IRQ5	Disabled		
IRQ6	Disabled		
IRQ7	Disabled		
IRQ8	Disabled		
IRQ9	Disabled		
IRQ10	Disabled		
IRQ11	Disabled		
IRQ12	Auto		
IRQ13	Disabled		
IRQ14	Disabled		
IRQ15	Disabled		
Standby Wakeup Events			
Keyboard	Enabled		
Mouse	PS/2 (IRQ12)		

- <sup>1</sup> DRAM speed was set to 70 ns for TLA 700 Series controllers with BIOS version 1.00.11 or earlier.
- <sup>2</sup> APM is set to Disabled for TLA 700 Series controllers with BIOS version 1.00.11 or earlier.
- <sup>3</sup> Power Savings is set to Customize when the APM is enabled. This allows Windows to manage power use for the instrument as indicated on the Power property page of the Power icon in the Control Panel. Power Savings was set to Disabled with BIOS version 1.00.11 or earlier.

## Reinstalling Software

Reinstalling software on the new hard disk is a two-step process.

**Step 1.** Install the software that originally came with your TLA 711 mainframe. To do this, use the software media that came with your original TLA 711 mainframe. Refer to *Appendix B: Reinstalling Software* in the *TLA 700 Series Installation Manual* (070-9774-02) and reinstall the software with the following exceptions:

- Skip the BIOS upgrade instructions (you've already done these steps in this manual).
- When partitioning the new hard disk using the FDISK procedure, be sure to answer yes (Y) when you are asked whether or not you want Large Disk Support.

**Step 2.** Use the procedure in the *TLA Application Software Version 3.2 Upgrade Instructions* beginning on page 6-3 to upgrade the software to the latest version.



# TLA 714 Color Portable Mainframe Fixed Hard Disk Drive Installation Instructions

These instructions direct you to install a fixed (second) hard disk drive on your TLA 714 Color Portable Mainframe.

## Master/Slave Drive Decision

At this point you need to decide where you would like the master hard disk drive to be, and where you would like the slave hard disk drive to be. The following guidelines may help you in your decision:

### Master Hard Disk Drive

The master hard disk drive:

- Must have the operating system (Windows 98) resident.
- Must be the boot drive.
- Must have the TLA 700 application software resident.
- Must not have a slave jumper installed.
- Can be the fixed or replaceable hard disk drive.

### Slave Hard Disk Drive

The slave hard disk drive:

- Must not have an operating system resident.
- Can not be a bootable drive.
- May not have the TLA 700 application software loaded on it.
- Must have a slave jumper installed.
- Can be the fixed or replaceable hard disk drive.

Note: If the slave hard disk drive is the replaceable hard disk drive, it does not need to be installed to use the instrument.

## Back Up Your Software

To protect your valuable data, prior to performing these procedures use the Windows Back Up tool to back up any user files stored on the present replaceable hard disk drive.

---

**NOTE.** *The following instructions are for upgrading the TLA 714 Color Portable Mainframe.*

*If you are upgrading a TLA 720 Color Benchtop Controller, proceed to the instructions on page 4–45.*

---

These instructions assume that you are familiar with servicing the instrument. If you need further details for disassembling or reassembling the instrument, refer to the *TLA 714 Color Portable Mainframe Service Manual*.

Contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service Center for installation assistance.



---

**CAUTION.** *To prevent static discharge damage, service the instrument 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.*

---

## Preparation

Be sure to observe the following precautions to avoid damaging the portable mainframe while preparing to service it.



---

**WARNING.** *Before performing this or any other procedure in this manual, read the Safety Summary found at the beginning of this manual.*

---





**WARNING.** *Dangerous voltages may be present.*

*Before performing any procedure in this subsection, disconnect the power cord from the line voltage source.*

*Failure to do so could cause serious injury or death.*

---

- Do not handle static-sensitive components on boards.
  - Transport and store static-sensitive boards in their original containers or on conductive foam. Label any package that contains static-sensitive assemblies.
  - Wear an antistatic wrist strap while handling the boards to discharge the static voltage from your body.
  - Do not allow anything capable of holding or generating a static charge on the work surface.
  - Avoid handling boards in areas that have a floor or work surface cover that is capable of generating a static charge.
- 



**WARNING.** *To avoid electric shock, always power off the chassis and disconnect the power cord before cleaning or servicing the chassis.*

---

## General Instructions

**NOTE.** *Read the following general instructions before removing a part.*

*Following these instructions helps ensure that you remove the part to be serviced while removing the minimum number of additional parts.*

---

## Tools Required

Table 4–6 for a lists the tools needed to remove and install replaceable parts in this mainframe.

**Table 4–6: Tools required for part removal**

Name
Screwdriver with a T-15 Torx tip
Screwdriver with a T-10 Torx tip
Small flat blade screwdriver

## Set Up The Slave Hard Disk Drive

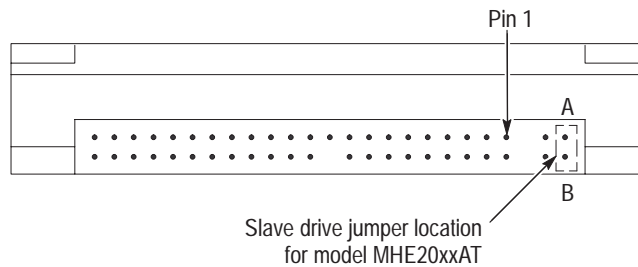
Decide which hard disk drive you want to be the slave hard disk drive.

If you want the replaceable hard disk drive to be the slave, you will need to add a slave jumper.

If you want the fixed hard disk drive to be the slave, you will need to remove that hard disk drive from the replaceable cartridge and add a slave jumper.

To set up the hard disk drive as a slave drive, follow these instructions:

1. Locate the hard disk drive you want to be the slave drive.
2. Locate the shorting jumper that you received with this kit.
3. Remove the four screws from the replaceable hard disk drive cartridge as shown in Figure 4–14 on page 4–37.
4. Remove the hard disk drive from the cartridge, but do not unplug the data cable.
  - a. If the slave hard disk drive is to be the replaceable hard disk drive, do not remove the cable.
  - b. If the slave hard disk drive is to be the fixed hard disk drive, remove the cable and set the replaceable cartridge aside.
5. Place a shorting jumper in the location shown in Figure 4–13 for hard disk drive model MHE20xxAT.



**Figure 4–13: Slave drive jumper location**

6. Place the hard disk drive back into the cartridge if it is to be the replaceable hard disk drive.
7. Replace the four screws into the cartridge to secure the hard disk drive (only if it is to be the replaceable hard disk drive).
8. Label this hard disk drive with a permanent marker as a slave drive.

## Set Up The Master Hard Disk Drive

Decide which hard disk drive you want to be the master hard disk drive.

If you want the master hard disk drive to be the replaceable hard disk drive, you do not have to do anything to the drive.

If you want the master hard disk drive to be the fixed hard disk drive, you will need to remove that hard disk drive from the replaceable cartridge.

To remove the hard disk drive from the cartridge, refer to Figure 4–14 and follow these steps:

1. Remove the four screws that fasten the hard disk drive to the cartridge.
2. Carefully remove the hard disk drive from the cartridge, and remove the cable assembly from the connector on the hard disk drive.
3. With a permanent marker label this hard disk drive as the fixed hard disk drive for reference. This is the hard disk drive you will install as the fixed hard disk drive.
4. Set this hard disk drive aside. You will install this drive after the mainframe is disassembled. The replaceable hard disk drive cartridge will not be used; you can keep the cartridge as a spare part.

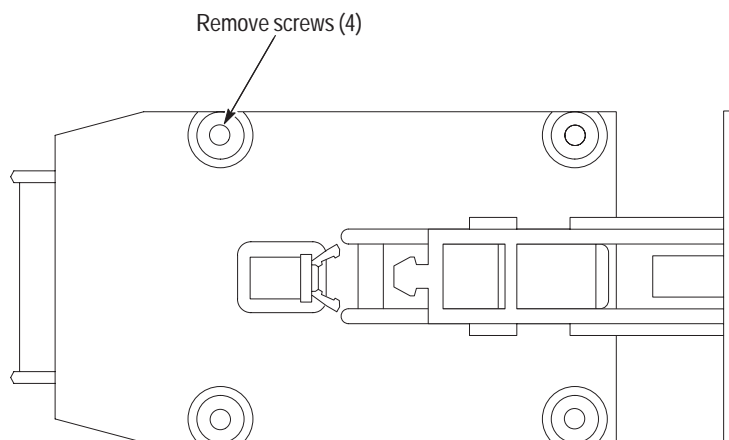


Figure 4–14: Removing the hard disk drive from the cartridge

## Remove the Replaceable Hard Disk Drive



**CAUTION.** Do not remove the replaceable hard disk drive when the mainframe is powered on.

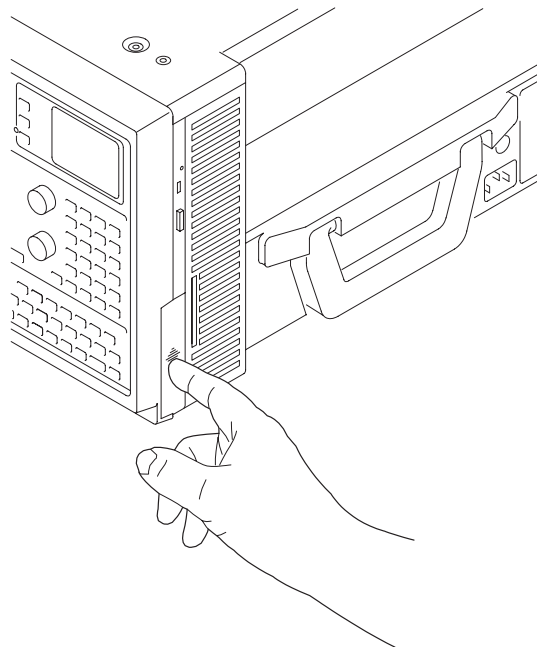
*The replaceable hard disk drive may be permanently damaged if it is removed while the mainframe is powered on.*

*Always power down the mainframe before removing the replaceable hard disk drive.*

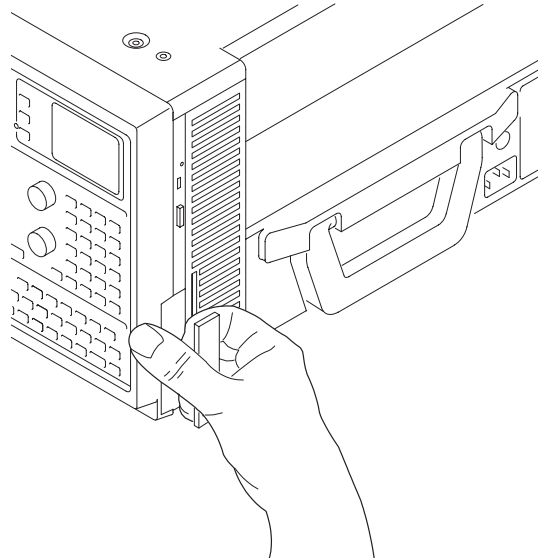
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Verify that the chassis is powered down.

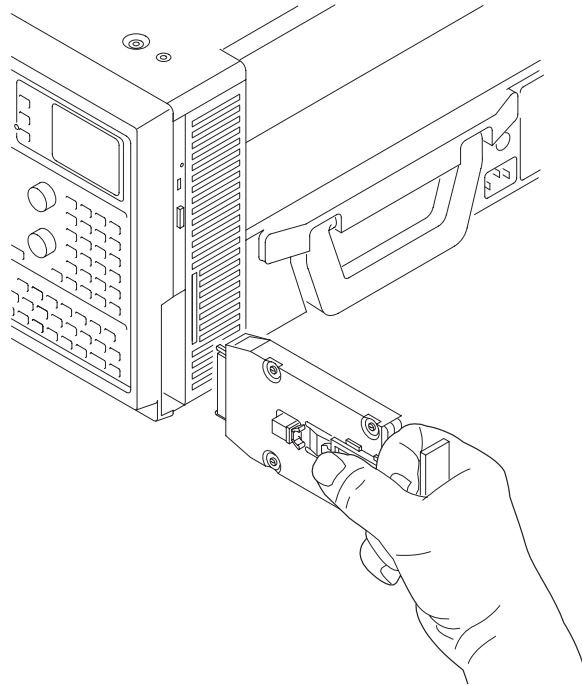
The replaceable hard disk drive cartridge is removed by depressing it to release the latch. Pull on the replaceable hard disk drive cartridge to remove it from the chassis. Refer to Figure 4-15, 4-16 and 4-17.



**Figure 4-15: Depress the latch**



**Figure 4-16: Unlatching the hard disk drive cartridge**



**Figure 4-17: Removing the hard disk drive cartridge**

## Remove Trim Ring

You will need a flat blade screwdriver (or other small prying tool) to remove the trim ring.

**Removal** Use the following procedure to remove the front cover and trim ring:

1. Set the mainframe with the cord-wrap feet on the work surface and the bottom facing you.
2. Grasp the trim ring by its bottom edge and pull toward you to detach the three plastic snaps. (Alternatively, you can use a flat-bladed screwdriver or other small prying tool to help you detach the snaps.) Then, swing the bottom of the ring upward and work the rest of the ring off the front panel.

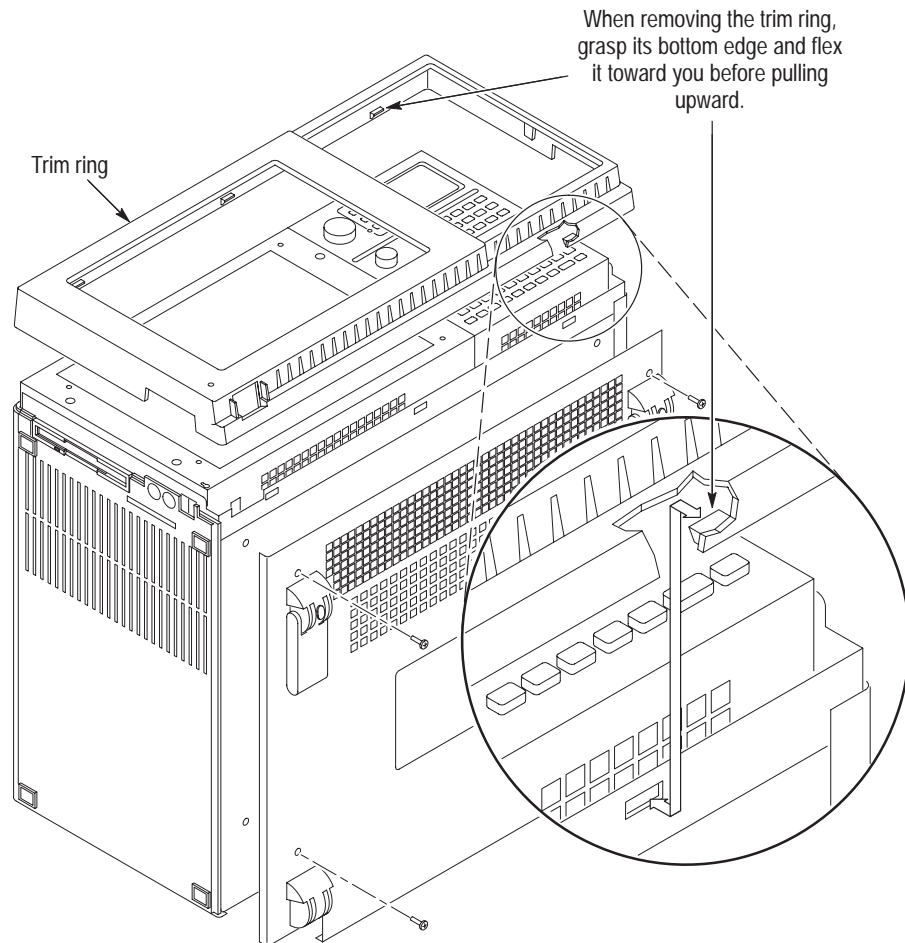


Figure 4-18: Front cover and trim ring removal

## Remove Flat Panel Display Assembly

You will need a screwdriver with a size T-15 Torx tip to perform this procedure.

**Removal** Use the following procedure and Figure 4–19 to remove the flat panel display assembly:

1. Remove the five screws that attach the flat panel display assembly to the mainframe.
2. Lift the bottom edge of the flat panel display assembly and rotate it upward and off the front face of the mainframe.
3. Detach the cable connecting the flat panel display assembly to connector J209 on the front panel interface board.

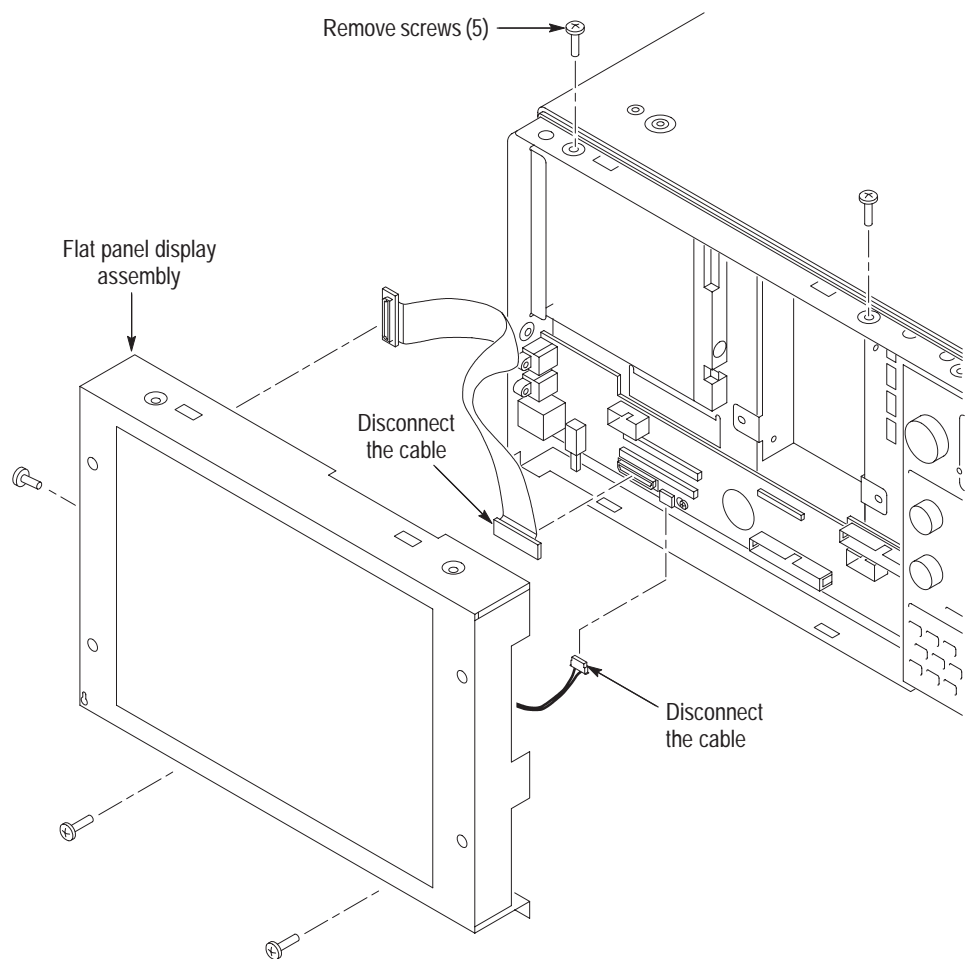


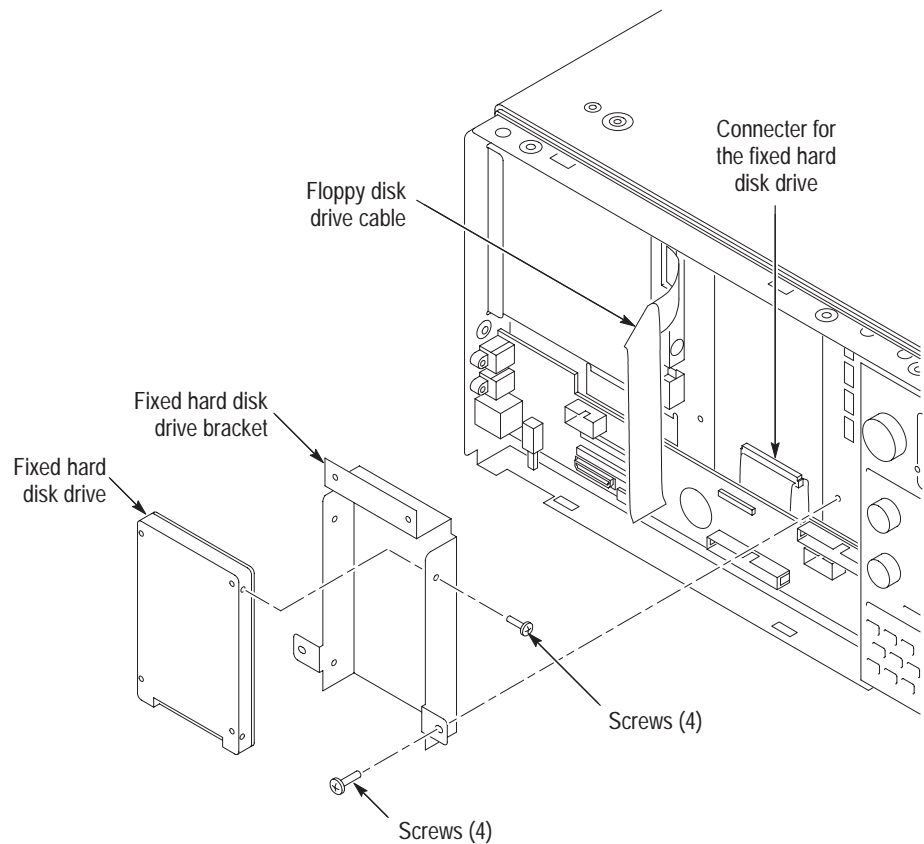
Figure 4–19: Flat panel display assembly removal

## Install Fixed Hard Disk Drive

You will need a screwdriver with a size T-15 Torx tip to perform this procedure.

**Installation** Use the following procedure to install the fixed hard disk drive:

1. Remove the fixed hard disk drive bracket.
2. Locate the hard disk drive that will become the fixed hard disk drive.



**Figure 4-20: Installing the fixed hard disk drive**

3. Mount the fixed hard disk drive to the fixed hard disk drive bracket with the screws included in this kit. Make sure that the orientation matches the key on the data cable.
4. Attach the data cable to the fixed hard disk drive.
5. Attach the fixed hard disk drive bracket to the chassis with four screws.
6. Do the Flat Panel Display Assembly installation procedure, page 4-43.



7. Do the Trim Ring Installation on page 4–43.

## Install Flat Panel Display Assembly

You will need a screwdriver with a size T-15 Torx tip to perform this procedure.

**Installation** Use the following procedure to reinstall the flat panel display assembly:

1. Reattach both cables connecting the flat panel display assembly to the interface board.
2. Reinstall the flat panel display assembly by first inserting the top edge and then rotating it downward into position.

Be sure the tabs are engaged at the top of the assembly. Insert the five screws that attach the flat panel display assembly to the mainframe: two screws at the bottom of the assembly on the front of the instrument, two screws on the top, and one screw on the left side. Refer to Figure 4–19 on page 4–41.

## Install Trim Ring

Replace the trim ring on the front panel. Start at the top edge and work around to the bottom until the three plastic snaps engage. Press the trim ring down all around the edges until it is completely seated.

## Set Up the Two Hard Disk Drives

If the master hard disk drive already has the operating system (Windows 98) and the TLA application software loaded, the system will boot up and function properly.

If the master hard disk drive is the blank hard disk drive you received with this kit, you will have to set up the BIOS, format the hard disk drive, load Windows 98, and load the TLA application software and diagnostics software.

## Reinstalling Software

Reinstalling software on the new hard disk is a two-step process.

**Step 1.** Install the software that originally came with your TLA 714 mainframe. To do this, use the software media that came with your original TLA 714 mainframe. Use the procedure that came in your original TLA 714 documentation.



---

**CAUTION.** Depending on when you received your original TLA 714 mainframe, the procedure for reinstalling software is located in one of two places. Make sure that you use the correct procedure to install the software.

---

- If your original TLA 714 Logic Analyzer came with Version 3.0 software, refer to *Appendix A: Reinstalling Software* in the *TLA 700 Series, Version 3.0 User Manual* (071-0265-00) to reinstall the software.
- If your original TLA 714 Logic Analyzer came with Version 3.1 software, refer to *Section 1: Reinstalling Software* in the *TLA 700 Series, Version 3.1 Software User Manual* (071-0684-00) to reinstall the software.

**Step 2.** Use the procedure in the *TLA Application Software Version 3.2 Upgrade Instructions* beginning on page 6-3 to upgrade the software to the latest version.

# TLA 720 Color Benchtop Mainframe Fixed Hard Disk Drive Installation Instructions

These instructions direct you to install a fixed (second) hard disk drive.

## Master/Slave Drive Decision

At this point you need to decide where you would like the master hard disk drive to be, and where you would like the slave hard disk drive to be. The following guidelines may help you in your decision:

### Master Hard Disk Drive

The master hard disk drive:

- Must have the operating system (Windows 98) resident.
- Must be the boot drive.
- Must have the TLA 700 application software resident.
- Must not have a slave jumper installed.
- Can be the fixed or replaceable hard disk drive.

### Slave Hard Disk Drive

The slave hard disk drive:

- Must not have an operating system resident.
- Can not be a bootable drive.
- May not have the TLA 700 application software loaded on it.
- Must have a slave jumper installed.
- Can be the fixed or replaceable hard disk drive.

Note: If the slave hard disk drive is the replaceable hard disk drive, it does not need to be installed to use the instrument.

## Back Up Your Software

To protect your valuable data, prior to performing these procedures use the Windows Back Up tool to back up any user files stored on the present replaceable hard disk drive.

---

**NOTE.** *The following instructions are for upgrading a TLA 720 Color Benchtop Controller.*

*If you are upgrading a TLA 714 Color Portable Mainframe, proceed to the instructions on page 4–33.*

---

These instructions assume that you are familiar with servicing the instrument. If you need further details for disassembling or reassembling the instrument, refer to the *TLA 720 Color Benchtop Controller Service Manual*.

Contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service Center for installation assistance.



---

**CAUTION.** *To prevent static discharge damage, service the instrument 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.*

---

## Preparation

Be sure to observe the following precautions to avoid damaging the benchtop controller while preparing to service it.



---

**CAUTION.** *Many components within the benchtop controller are susceptible to static-discharge damage.*

*Service only in a static-free environment. Observe standard handling precautions for static-sensitive devices.*

*Always wear a grounded wrist strap, grounded foot strap, and static-resistant apparel while installing this kit.*

---



**WARNING.** *Dangerous voltages may be present.*

*Before performing any procedure in this subsection, disconnect the power cord from the line voltage source.*

*Failure to do so could cause serious injury or death.*

---

- Do not handle static-sensitive components on boards.
  - Transport and store static-sensitive boards in their original containers or on conductive foam. Label any package that contains static-sensitive assemblies.
  - Wear an antistatic wrist strap while handling the boards to discharge the static voltage from your body.
  - Do not allow anything capable of holding or generating a static charge on the work surface.
  - Avoid handling boards in areas that have a floor or work surface cover that is capable of generating a static charge.
- 



**WARNING.** *To avoid electric shock, always power off the chassis and disconnect the power cord before cleaning or servicing the chassis.*

---

## General Instructions

**NOTE.** *Read the following general instructions before removing a part.*

*Following these instructions helps ensure that you remove the part to be serviced while removing the minimum number of additional parts.*

---

## Tools Required

Table 4-7 lists the tools you may need to replace modules in the benchtop controller.

**Table 4-7: Tools required**

Name
Small flat blade screwdriver
Screwdriver with a #0 Phillips head and a 6-inch long shaft
Screwdriver with a T-10 tip
3/16 inch nut driver

## Set Up The Slave Hard Disk Drive

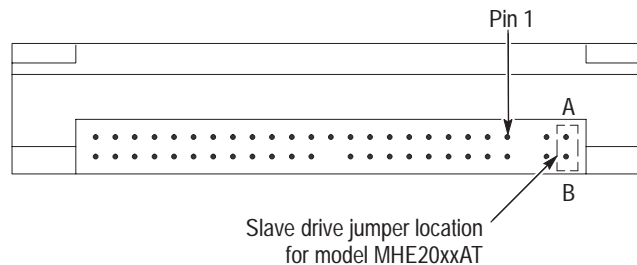
Decide which hard disk drive you want to be the slave hard disk drive.

If you want the replaceable hard disk drive to be the slave, you will need to add a slave jumper.

If you want the fixed hard disk drive to be the slave, you will need to remove that hard disk drive from the replaceable cartridge and add a slave jumper.

To set up the hard disk drive as a slave drive, follow these instructions:

1. Locate the hard disk drive you want to be the slave drive.
2. Locate the shorting jumper that you received with this kit.
3. Remove the four screws from the replaceable hard disk drive cartridge as shown in Figure 4–22 on page 4–49.
4. Remove the hard disk drive from the cartridge, but do not unplug the data cable.
  - a. If the slave hard disk drive is to be the replaceable hard disk drive, do not remove the cable.
  - b. If the slave hard disk drive is to be the fixed hard disk drive, remove the cable and set the replaceable cartridge aside.
5. Place a shorting jumper in the location shown in Figure 4–21.



**Figure 4–21: Slave drive jumper location**

6. Place the hard disk drive back into the cartridge if it is to be the replaceable hard disk drive.
7. Replace the four screws into the cartridge to secure the hard disk drive (only if it is to be the replaceable hard disk drive).
8. Label this hard disk drive with a permanent marker as a slave drive.

## Set Up The Master Hard Disk Drive

Decide which hard disk drive you want to be the master hard disk drive.

If you want the master hard disk drive to be the replaceable hard disk drive, you do not have to do anything to the drive.

If you want the master hard disk drive to be the fixed hard disk drive, you will need to remove that hard disk drive from the replaceable cartridge.

To remove the hard disk drive from the cartridge, refer to Figure 4–22 and follow these steps:

1. Remove the four screws that fasten the hard disk drive to the cartridge.
2. Carefully remove the hard disk drive from the cartridge, and remove the cable assembly from the connector on the hard disk drive.
3. With a permanent marker label this hard disk drive as the fixed hard disk drive for reference. This is the hard disk drive you will install as the fixed hard disk drive.
4. Set the disk drive aside. You will install this drive after the mainframe is disassembled. The replaceable hard disk drive cartridge will not be used; you can keep the cartridge as a spare part.

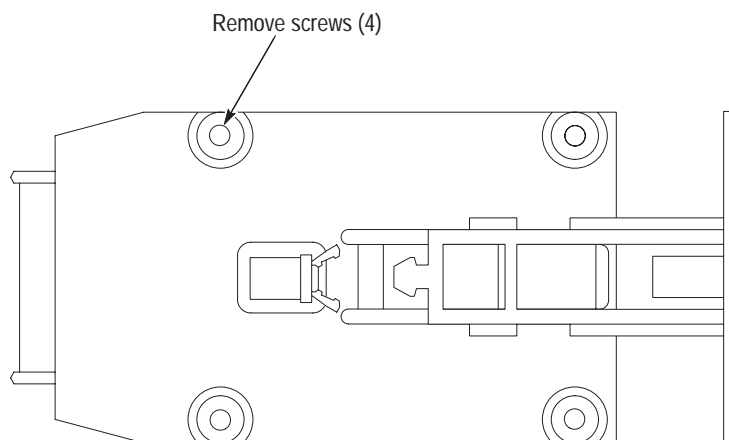


Figure 4–22: Removing the hard disk drive from the cartridge

## Remove the Replaceable Hard Disk Drive



**CAUTION.** Do not remove the replaceable hard disk drive when the mainframe is powered on.

The replaceable hard disk drive may be permanently damaged if it is removed while the mainframe is powered on.

Always power down the mainframe before removing the replaceable hard disk drive.

---

Verify that the controller is powered down.

The replaceable hard disk drive cartridge is removed by depressing it to release the latch. Pull on the replaceable hard disk drive cartridge to remove it from the chassis. Refer to Figure 4-23, 4-24 and 4-25.

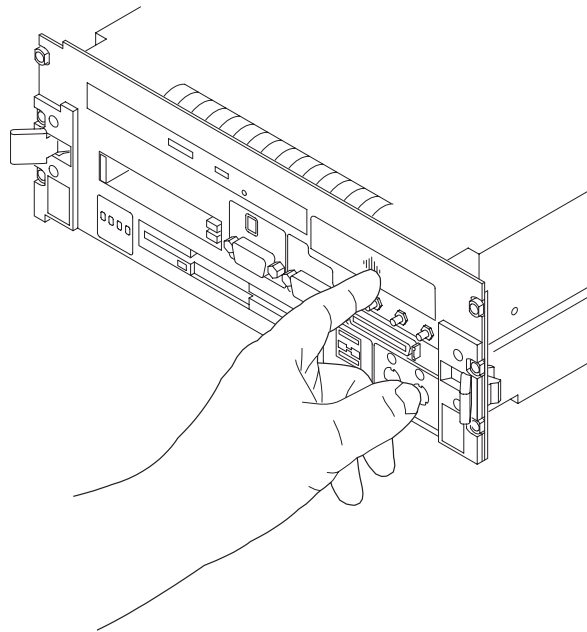
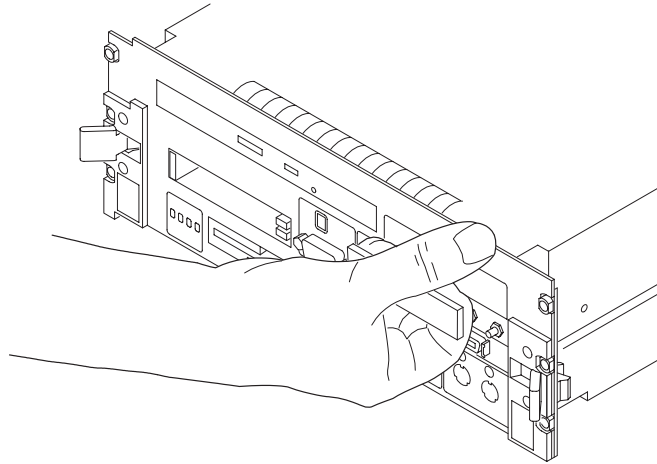
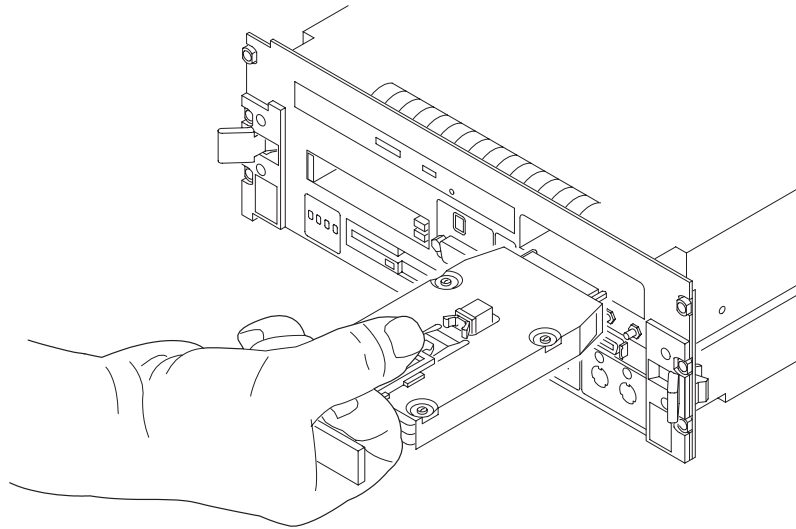


Figure 4-23: Depress the latch





**Figure 4-24: Unlatching the hard disk drive cartridge**



**Figure 4-25: Removing the hard disk drive cartridge**

## Remove the Benchtop Controller Cover

Remove the cover to gain access internal modules and memory.

**Removal** Remove the screws shown in Figure 4–26 and lift the cover off.

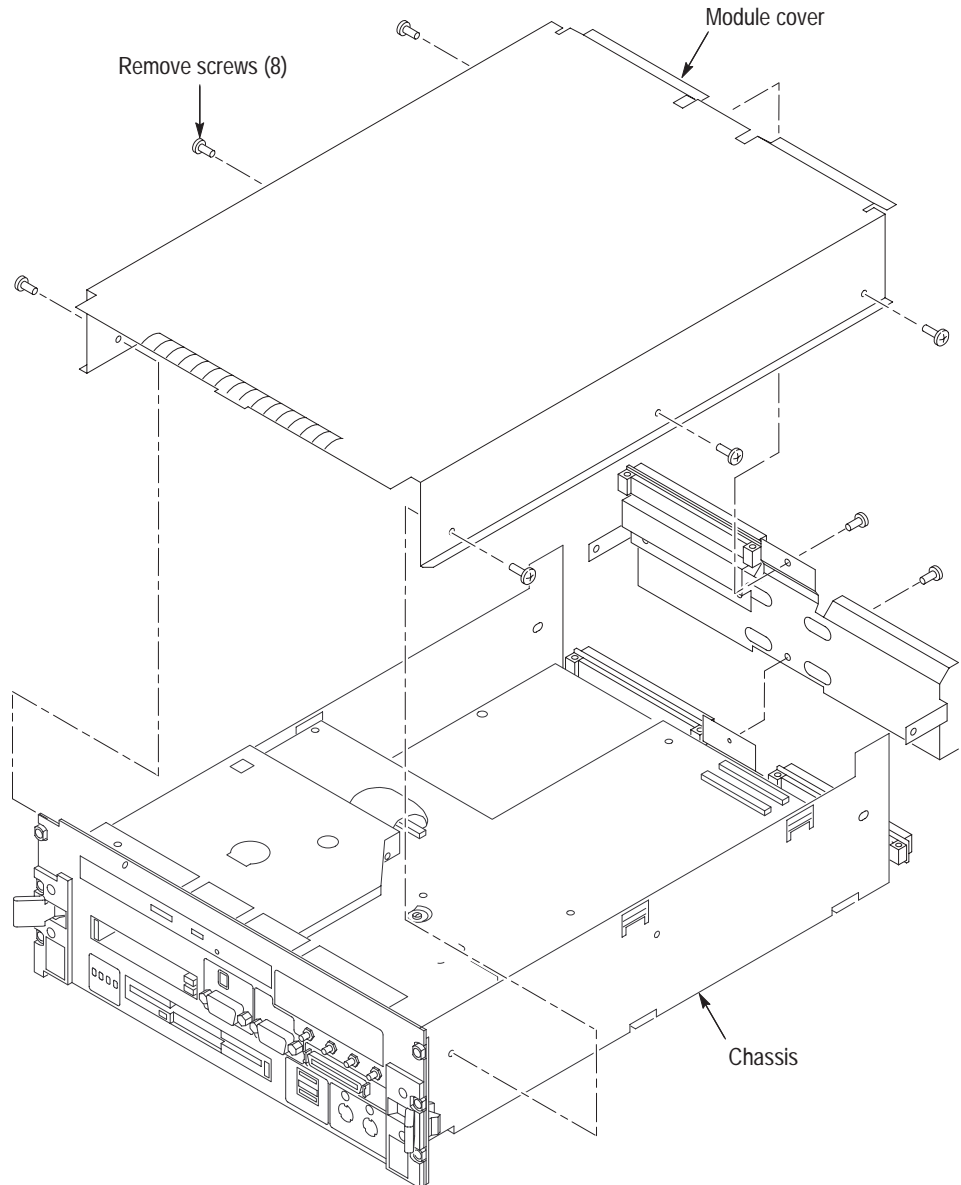


Figure 4–26: Removal and installation of the cover

## Remove the Hard Drive Interface Board

**Removal** To remove the hard drive interface board, refer to Figure 4–27 and follow these instructions:

1. Disconnect the two ribbon cables located on the rear of the board.
2. Remove the screws as shown in Figure 4–27.
3. Remove the hard drive interface board.

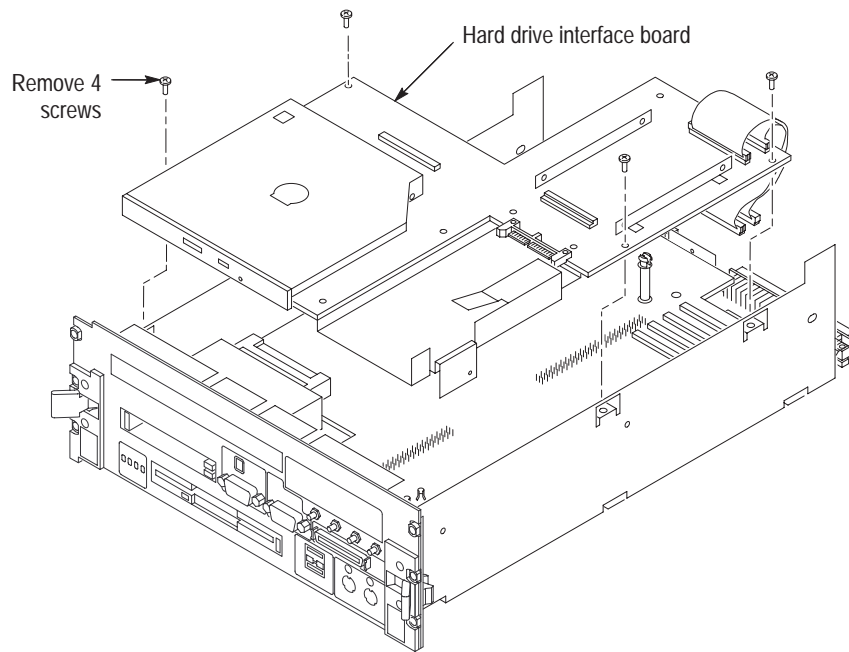


Figure 4–27: Removing the hard drive interface board

## Install the Fixed Hard Disk Drive

1. Carefully align the connector pins on the back of the hard disk drive to the socket on the board. Gently slide the hard disk drive into the socket. Verify that all of the pins are fully engaged and that no pins are bent.
2. Install the four screws to secure the fixed hard disk drive as shown in Figure 4–28.

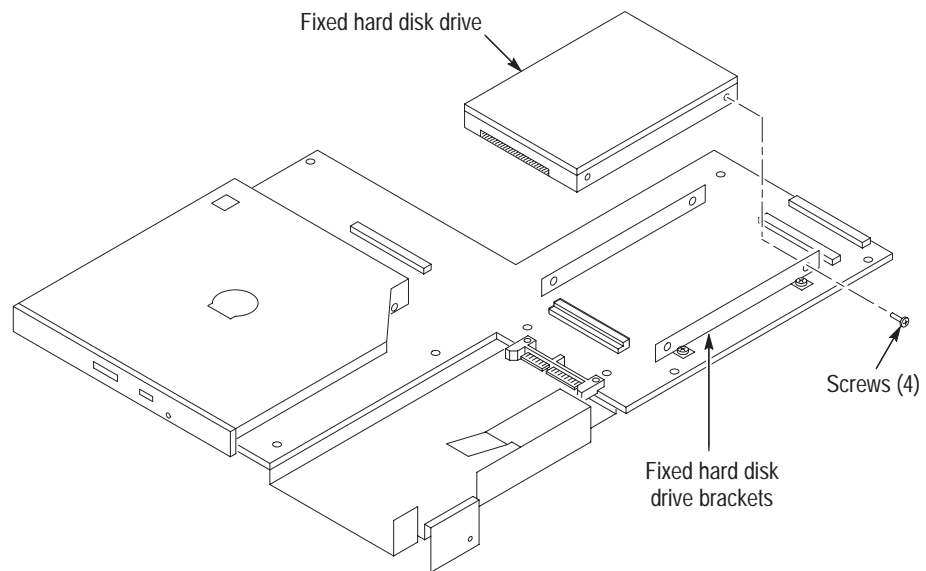


Figure 4–28: Installing the fixed hard disk drive

## Install the Hard Drive Interface Board

**Installation** To install the hard drive interface board, refer to Figure 4–29 and follow these instructions:

1. Connect the hard drive interface board to the adapter board by aligning the two connectors between the two boards.

Locate the center standoff and center it on the hole. Carefully apply pressure to both boards until the two connectors engage.

2. Install the screws.
3. Connect the two ribbon cables located on the rear of the board.
4. Replace the cover following the instructions on page 4–56.

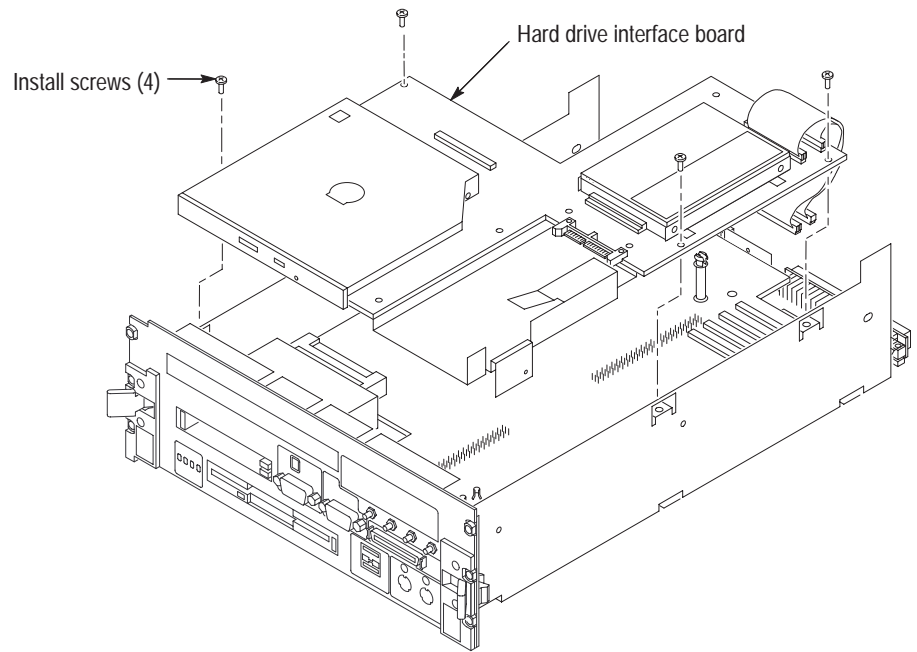


Figure 4-29: Installing the hard drive interface board

## Install the Benchtop Controller Cover

**Installation** To install the cover, follow these instructions:

1. Place the cover on the chassis.
2. Push forward on the cover so the tab on the front edge of the cover inserts into the rear of the front subpanel. Make sure that the cover is fully seated, with no gaps, against the front and rear chassis flanges.

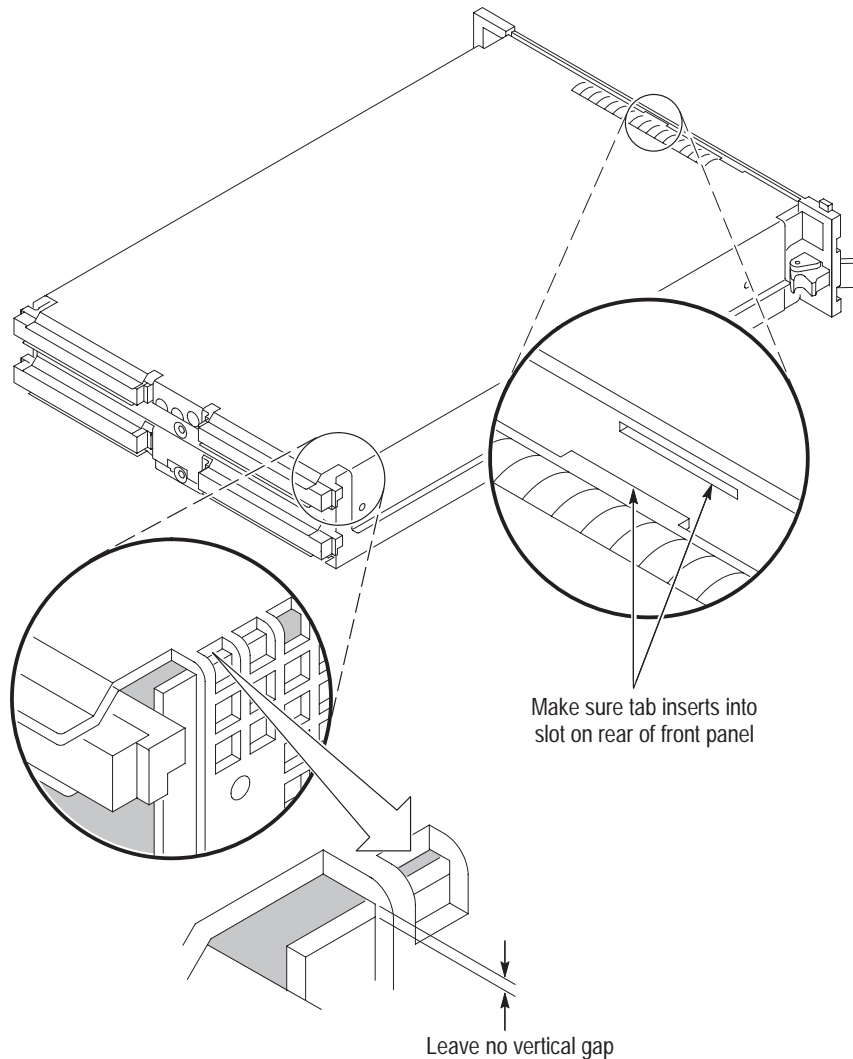


Figure 4-30: Seating the cover on the chassis

3. Secure the left side cover with the screws removed from the top and bottom of the enclosure.
4. Squeeze the sides together before tightening to ensure a good EMI seal and mechanical connection.
5. Install the replaceable hard disk drive.

## Set Up The Two Hard Disk Drives

If the master hard disk drive already has the operating system (Windows 98) and the TLA application software loaded, the system will boot up and function properly.

If the master hard disk drive is the blank hard disk drive you received with this kit, you will have to set up the BIOS, format the hard disk drive, load Windows 98, and load the TLA application software and diagnostics software.

## Reinstalling Software

Reinstalling software on the new hard disk is a two-step process.

**Step 1.** Install the software that originally came with your TLA 720 mainframe. To do this, use the software media that came with your original TLA 720 mainframe. Use the procedure that came in your original TLA 720 documentation.



---

**CAUTION.** Depending on when you received your original TLA 720 mainframe, the procedure for reinstalling software is located in one of two places. Make sure that you use the correct procedure to install the software.

---

- If your original TLA 720 Logic Analyzer came with Version 3.0 software, refer to *Appendix A: Reinstalling Software* in the *TLA 700 Series, Version 3.0 User Manual* (071-0265-00) to reinstall the software.
- If your original TLA 720 Logic Analyzer came with Version 3.1 software, refer to *Section 1: Reinstalling Software* in the *TLA 700 Series, Version 3.1 Software User Manual* (071-0684-00) to reinstall the software.

**Step 2.** Use the procedure in the *TLA Application Software Version 3.2 Upgrade Instructions* beginning on page 6-3 to upgrade the software to the latest version.





# TLA 7UP Option 05



# Cooling Shutter Upgrade

TLA 7UP option 05 supports the upgrade of the cardguide assembly with a more efficient airflow shutter assembly.

## Instruments

TLA 704 Color Portable Mainframe

## Minimum Tool and Equipment List

Table 5-1: Tool and Equipment List

Required tools and equipment	Part number
Small flat blade screwdriver	Common hand tool

## Kit Parts List

Table 5-2: TLA 7UP Option 05 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	378-0449-00	Cooling shutter assembly
1	N/A	TLA 7UP kit label

## Installation Instructions

These instructions are for personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the appropriate product manual. Contact your nearest Tektronix, Inc., 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.*

---

## Remove

To remove the present cardguide assembly, refer to Figure 5–1 and follow these instructions:

### Remove the Cardguide Assembly

1. Power the unit down and unplug the power cord.
2. Remove all modules.
3. The cardguide assembly is located on the left side of the chassis, and is held in place by a snap-lock fit. To remove the cardguide assembly, grasp the locking tabs on the front, and pry the locking tabs away from the chassis.
4. Swing the cardguide assembly to the right and remove it from the chassis.

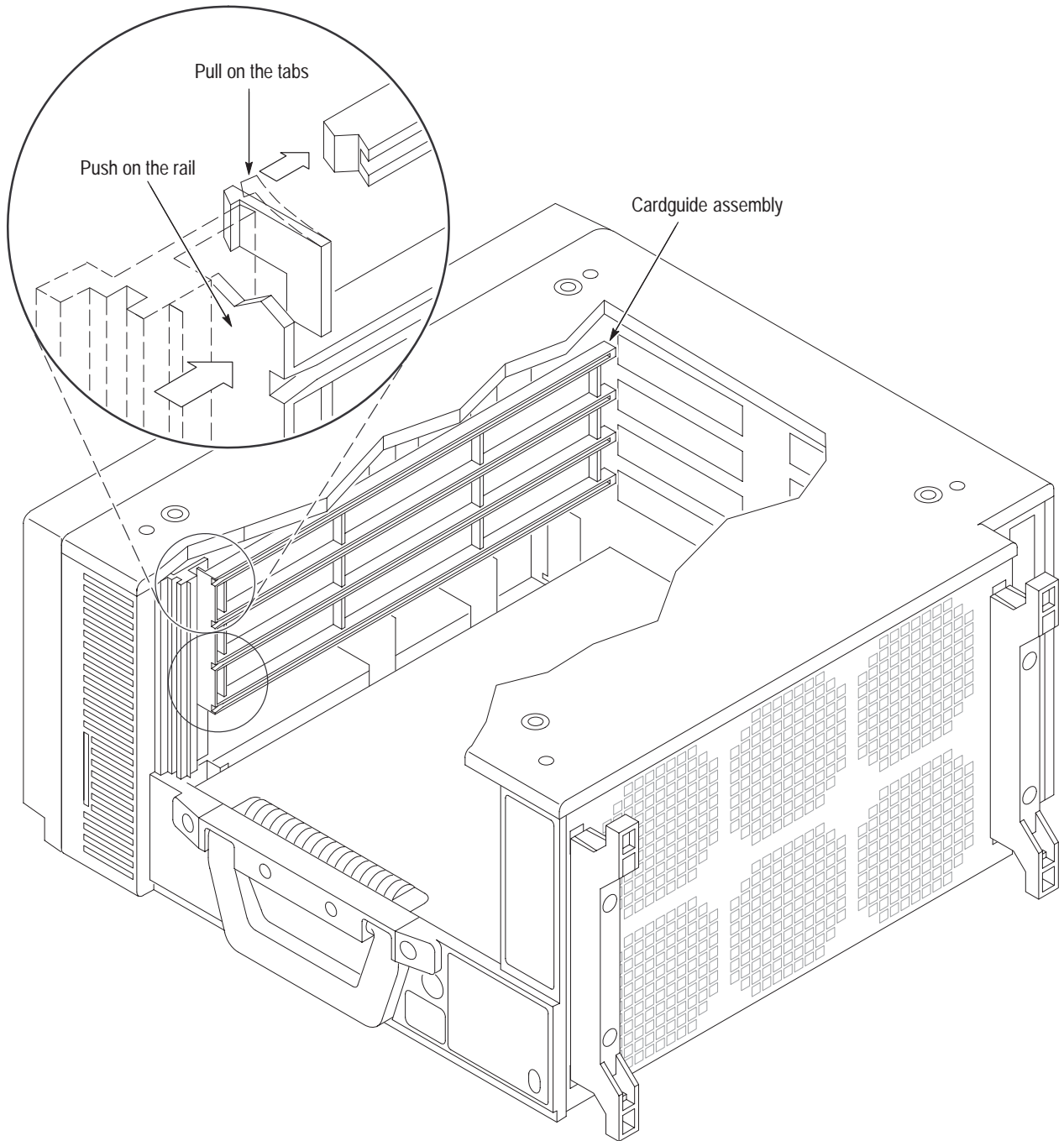


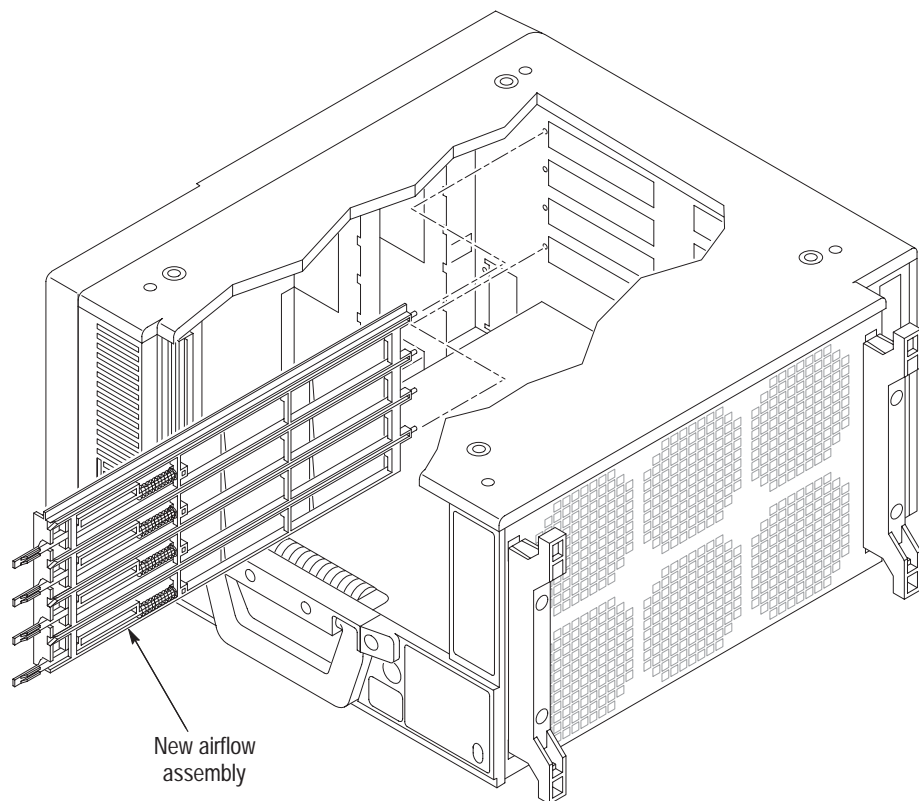
Figure 5-1: Removing the cardguide assembly

## Install

To install the airflow assembly, refer to Figure 5–2 and Follow these instructions:

### Install Airflow Assembly

1. To allow for necessary clearance the bottom airflow shutter louver must be tilted 90° outward (the open position).
2. Depress the bottom actuator, slide the assembly into the chassis, and insert the three mounting tabs into the three holes in the rear of the chassis.



**Figure 5–2: Installing the new airflow assembly**

3. Swing the assembly to the left and snap it into place.
4. If there is any resistance or bowing, check to see that the assembly is aligned correctly at the rear.



# TLA 7UP Option 06





# TLA Application Software Version 3.2 Upgrade

TLA 7UP option 06 support the upgrade to TLA application software version 3.2.

TLA application software version 3.2 will only run on Windows 98.

This kit provides instructions to upgrade the software and firmware for the TLA 704 or TLA 714 Color Portable Mainframe or the TLA 711 or TLA 720 Color Benchtop Mainframe.

---

**NOTE.** TLA application software version 3.2 is shipped on CDs.

The TLA 704 and the TLA 711 require the use of an external CD ROM drive to install the TLA application software version 3.2.

If you do not have an external CD ROM drive, an external CD ROM drive is available from Tektronix in the TLA 7UP Option 08.

---

## Products

TLA 704 Color Portable Mainframe  
TLA 711 Color Benchtop Mainframe  
TLA 714 Color Portable Mainframe  
TLA 720 Color Benchtop Mainframe

## Kit Parts List

Table 6-1: TLA 7UP Option 06 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	063-3022-XX	Tektronix Logic Analyzer Family Application Software Version 3.2
1	063-2895-XX	TLA 704/711 BIOS Software on a floppy disk
1	063-3227-XX	Windows 98 internal/external CD ROM boot floppy disk
1	071-0608-XX	Bootable Floppy Disk Instructions Read This First
5	131-4356-00	Jumper with pull tab, for flashing module firmware

**Table 6-1: TLA 7UP Option 06 Parts List (Cont.)**

<b>Quantity</b>	<b>Part number</b>	<b>Description</b>
1	071-0729-XX	Tektronix Logic Analyzer Family User Manual Version 3.2 Software
1	016-1524-01	TLA Series mouse pad
12	N/A	Software revision labels
1	N/A	TLA 7UP kit label

# TLA Application Software Version 3.2 Upgrade Instructions

For detailed information on the TLA application software version 3.2 software release, refer to the online *TLA Release Notes* after installing the software.

To open the release notes, click Start, Programs, Tektronix Logic Analyzer, and select TLA Release Notes. You can also use WordPad and access the release notes on the TLA application software.

---

**NOTE.** Release notes are also available on the root directory of the CD labeled “Disc1-Logic Analyzer Software.”

---

Note the following:

- Check the kit contents against the appropriate kit parts list to verify you have all the contents of your kit.
- The TLA application software version 3.2 includes a soft power down feature for the TLA 704 Color Portable Mainframe (originally available with version 1.1). If you want to enable this feature, refer a qualified service person to the BIOS update instructions and software included with this kit.

## Upgrading TLA Application Software

To upgrade the TLA application software, complete the following steps:

1. Beginning with TLA application software version 3.2, the Tektronix Logic Analyzers are shipped with Windows 98 SE (Second Edition). Although version 3.2 will run properly on Windows 98, Tektronix highly recommends that you upgrade to Windows 98 SE. See the upgrade instructions beginning on page 7–2.
2. Before starting, exit the TLA application if it is running. Close all open windows and exit all other applications.
3. Insert the CD labeled “Disc1-Logic Analyzer Software”.
4. Browse to the CD ROM drive.
5. Browse to the D:\TLA Application SW\Disk1 folder.
6. Double click on Setup.exe to run the setup program.

7. If the program finds an older version of the TLA application, the program will prompt you to uninstall the old version.
8. Select Yes. If the “Remove Shared File?” dialog, select “Yes to All” to remove unused shared files.

This will only uninstall the older version of the TLA application. After the program has completed, close all open windows and reboot the instrument.

After reboot you need to run the installation program again to install the new version of the TLA application software (done in the following steps).

9. Browse to the CD ROM drive.
10. Browse to the D:\TLA Application SW\Disk1 folder.
11. Double click on Setup.exe to run the setup program.
12. Follow the installation on screen instructions.
13. When the installation is complete, the program will prompt you to reboot the system; select OK or Yes to reboot.
14. Double click the TLA Final Setup icon on the desktop to complete the installation.

---

**NOTE.** *The new TLA Application may not recognize all of your installed modules because you have not yet upgraded the module firmware. You will upgrade the firmware later in this section.*

---

## Installing the Pattern Generator Application Software

To install the pattern generator application software, perform the following steps.

---

**NOTE.** *Skip the following steps if the pattern generator application software is already installed.*

---

1. Exit all applications before continuing.
2. Insert the CD labeled “Disc1-Logic Analyzer Software”.
3. Click Start, point to Settings and click Control Panel.
4. In the Control Panel window, double-click Add/Remove Programs.

- Click Install and follow the on screen instructions. The application software is located on the CD in the following directory:

\Tektronix Pattern Generator Application SW\Disk1

The setup program will replace old versions of the software after you have confirmed your choice. The program also offers to delete shared files which appear to be no longer needed by any application. You can safely delete these files if you are sure you no longer need them. The program will not remove saved pattern generator files.

## Upgrading the QA+Win32 Diagnostic Software

To upgrade the QA+Win32 diagnostic software, complete the following steps:




---

**CAUTION.** You must explicitly remove the old version of the QAPlusWin32. Use the Add/Remove Programs tool in the control panel to remove the software before upgrading to the new version.

---

- Install the CD labeled "Disc1-Logic Analyzer Software."
- Use the Windows Explorer locate and execute:  
D:\QA Plus\Qawin32.exe
- The QAPlus install program will prompt you that a directory will be created, click Next to approve.
- When prompted to accept a folder name of Sykes Diagnostics, Change the folder name to QA+Win32. Click Next then click Finish.
- Click Start, point to Programs and click MS DOS Prompt.

The next few steps must be done in an MS DOS Window.

- To add a Start Menu shortcut to the QAPlus manual, in the MS DOS window type the following:  
copy D:\QA Plus\\*.lnk C:\Windows\Start Menu\Programs\QA+Win32
- To remove the QAPlus link from the desktop, in the MS DOS window type the following:  
erase C:\Windows\Desktop\QA+Win32.lnk
- To copy the customized test scripts into the QAPlus directory, in the MS DOS window type the following:  
copy /y D:\QA Plus\\*.dat C:\Program Files\QAWin32

9. Close the MS DOS Window.

## Upgrading Module Firmware

Perform the following steps if you need to upgrade the flash ROM-based firmware on your application modules. You can upgrade multiple modules and module types during a single firmware session.

1. Power off the logic analyzer.
2. Disconnect the power cord.
3. Disconnect any probes on the modules that you want to upgrade.
4. Remove the module from the logic analyzer.
5. Refer to Figure 6–1 and locate the Flash programming pins on the rear of the module.

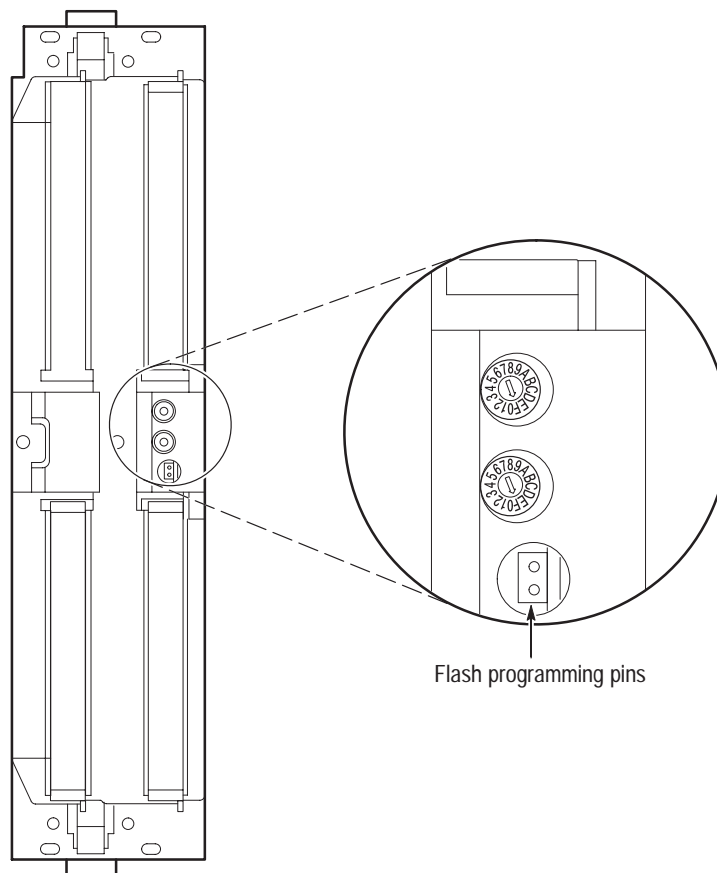


Figure 6–1: Flash programming pins

6. Install a jumper on the Flash programming pins (use one of the spare jumpers that came with your logic analyzer software).
7. Reinstall the modules in the logic analyzer.
8. Reconnect the power cord and power on the logic analyzer.

---

**NOTE.** *When the TLA application starts, any modules where you have installed the Flash programming jumper will not display in the system menu.*

---

9. Exit the TLA application and the pattern generator application if it is running (the pattern generator application may be minimized).
10. Click Start → Programs → Tektronix Logic Analyzer, and click TLA Firmware Loader.
11. Select the modules that you want to update from the list of modules displayed in the Supported list box near the top of the menu. If you are updating more than one module at a time, note the slot location of the module in the selection box.
12. Select Load Firmware from the Execute menu.
13. Click the proper .LOD file for the module in the C:\Program Files\TLA Firmware directory. If you are updating more than one module make sure that you select the proper firmware file for the module in the listed slot number.
14. Click OK. You will be asked to confirm your action; click Yes when prompted.

---

**NOTE.** *The program will not allow you to load firmware to an incompatible module.*

*For example, the program will not load DSO firmware to a logic analyzer module or pattern generator firmware to a DSO module.*

---

15. If you are updating another module, select the proper .LOD file for the module.
16. Click OK. You will be asked to confirm your action; click Yes when prompted.

The program will load the firmware for each module one at a time. The process takes approximately five minutes per module.

17. Exit the program.

18. Turn off the logic analyzer and disconnect the power cord.
19. Remove the module from the logic analyzer and remove the flash jumper from the Flash programming pins on the rear of the module. Keep the jumper for future updates.
20. Attach a new label with the new firmware version to the module.
21. Reinstall the module in the logic analyzer and reconnect the probes.
22. Reconnect the power cord and turn on the logic analyzer.
23. Verify that the power-on diagnostics pass.
24. Run the self calibration on each module after a 30-minute warm-up.

## Upgrading the TPI Client and PPI Client Software

If you want to control the logic analyzer from a remote PC using the TLA Programmatic Interface (TPI) and the Programmatic Pattern Generator Interface (PPI), you must install the TPI client software and the PPI client software on that PC.

To install the TPI client software on a remote PC, execute the following command on the PC:

```
D:\TPI Client SW\Disk1\Setup.exe
```

To install the PPI client software on a remote PC, execute the following command on the PC:

```
D:\PPI Client SW\Disk1\Setup.exe
```



## Installing the Product Information Labels

After updating the software and firmware, refer to Figures 6–2 through 6–4 and locate the product information labels on the mainframes and modules.

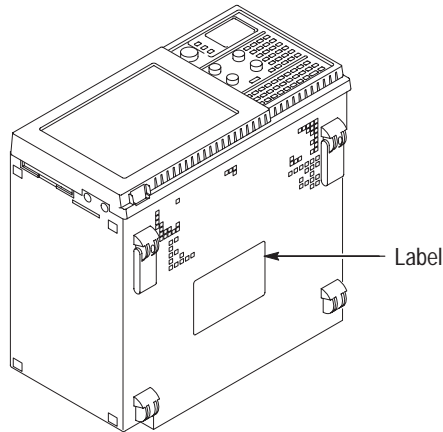


Figure 6–2: Portable mainframe label location

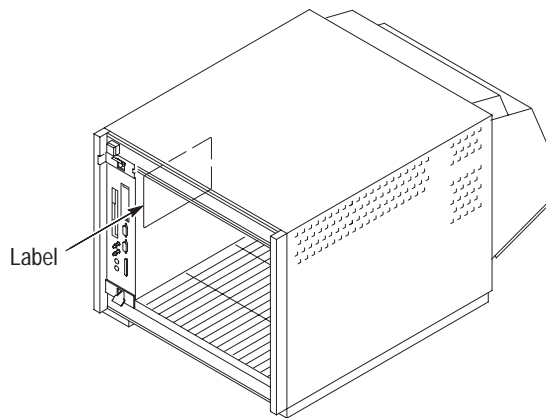
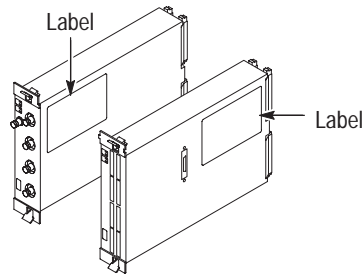
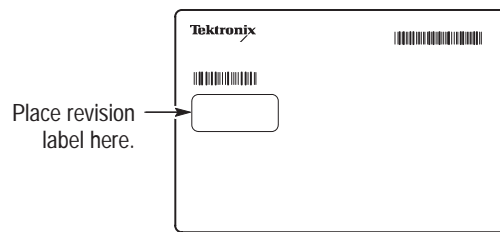


Figure 6–3: Benchtop mainframe label location



**Figure 6-4: Module label locations**

Use the revision labels supplied with this kit to identify the new installed version on your product. Apply the revision labels to the product information labels as shown in Figure 6-5.



**Figure 6-5: Revision label location**



# TLA 7UP Option 07



# Windows 98 SE Upgrade Instructions

TLA 7UP option 07 supports the upgrade from Microsoft Windows 95/98 to Microsoft Windows 98 SE.

## Instruments

TLA 704 Color Portable Mainframe	All Serial Numbers
TLA 711 Color Benchtop Mainframe	All Serial Numbers
TLA 714 Color Portable Mainframe	All Serial Numbers
TLA 720 Color Benchtop Mainframe	All Serial Numbers

---

**NOTE.** Microsoft Windows 98 SE is shipped on a CD ROM.

The TLA 704 and the TLA 711 require the use of an external CD ROM drive to install Windows 98 SE.

If you do not have an external CD ROM drive, an external CD ROM drive is available in the TLA 7UP Option 08.

---

## Kit Parts List

Table 7-1: TLA 7UP Option 07 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	063-3228-XX	Microsoft Windows 98 SE upgrade package (on CD ROM) <sup>1</sup>
1	063-3227-XX	Windows 98 SE pre-install, internal/external CD ROM boot floppy.
1	N/A	TLA 7UP kit label

<sup>1</sup> Requires an external CD ROM drive, see TLA 7UP Option 08

## Installing Windows 98 SE Upgrade

To install the Windows 98 SE upgrade you must have Windows 95 or Windows 98 installed and running.

To install the Windows 98 SE upgrade follow these instructions:

1. Install your external CD ROM drive on the mainframe (TLA 704 and TLA 711 only). Refer to Option 08 in this manual.
2. Insert the Windows 98 SE CD ROM into the CD ROM drive.
3. Follow the on screen Windows 98 SE installation instructions.

## Installing the Tektronix PCI Bridge Driver

At some point during the Windows 98 SE installation, the installation wizard may prompt you for the disk labeled ADG343.inf, the PCI bridge driver. Install the CD labeled “Disc1-Logic Analyzer Software” and start at step 13 to install the Tektronix PCI bridge driver.

If you are installing the Tektronix PCI bridge driver outside of the Windows 98 SE installation, follow these instructions:

1. Click Start → Settings → Control Panel.
2. Double click on the Systems icon.
3. Select the Device Manager tab.
4. Under TEK PCI Device, select (highlight) PCI Bridge.
5. Click the Properties button.
6. Select the Driver tab.
7. Click the Update Driver button or the Reinstall Driver button.
8. The Update Device Driver wizard will start.
9. Click the Next button.
10. Select the “Display a list of all the drivers...” radio button.
11. Click the Next button.
12. Click the Have Disk button.
13. Click the Browse button.
14. Browse to the CD labeled “Disc1-Logic Analyzer Software” and browse to the \Drivers\TLA700\TEK PCI Bridge directory.

15. Select ADG343.inf and click the OK button.
16. Click the OK button again.
17. Click the Next button, and then click the Finish button.
18. Select Yes to reboot the system.

## Set Up Virtual Memory

For increased performance, set up the virtual memory by following these instructions:

1. Select Start → Settings → Control Panel.
2. Double click on the System icon.
3. Select the Performance tab.
4. Click the Virtual Memory button.
5. Select the Let me specify my own virtual memory settings radio button.
6. Set Minimum to 100.
7. Set Maximum to 500.
8. Click the OK button.
9. When prompted to confirm your virtual memory settings click the Yes button.
10. Click the Close button to exit the Systems properties dialog box.
11. When prompted to restart, click the Yes button.

Windows 98 SE is now installed and configured. If you want to install the TLA application software, go to page 6-1.







# TLA 7UP Option 08



# External CD ROM Drive Installation

TLA 7UP option 08 supports the installation and use of an external CD ROM drive.

An external CD ROM drive is required in order to install Windows 98, and the TLA 700 Series software and diagnostics.

This kit contains the following items:

- External CD ROM drive kit
- Boot floppy disk with CD ROM and PCMCIA port drivers on it.

The external CD ROM is only for use on the PC Card (PCMCIA) port.

## Instruments

TLA 704      All Serial Numbers  
TLA 711      All Serial Numbers

## Kit Parts List

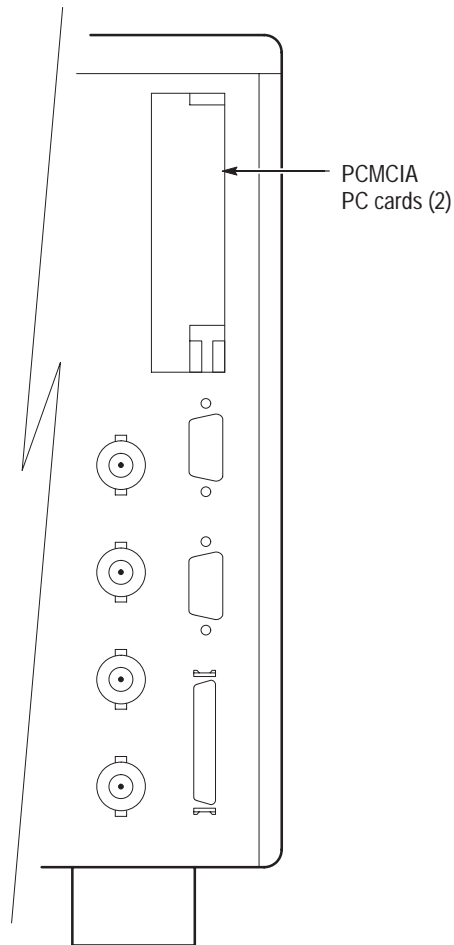
Table 8-1: TLA 7UP Option 08 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	119-6179-00	External PCMCIA CD ROM Drive
1	063-3227-XX	Windows 98 internal/external CD ROM boot floppy disk
1	N/A	TLA 7UP kit label

## Installation Instructions

Follow the manufacturers instructions contained in the external CD ROM drive package. The external CD ROM is only for use on the PC Card (PCMCIA) port.

Figure 8-1 and Figure 8-2 show the location of the PC card (PCMCIA) card slots.



**Figure 8-1: TLA 704 Color Portable Mainframe rear panel**

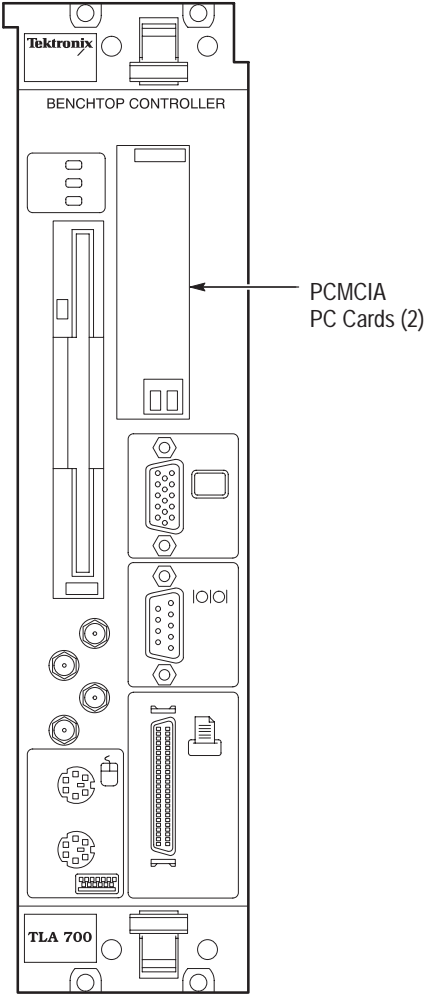


Figure 8-2: TLA 711 Color Portable Mainframe front panel





# TLA 7UP Option 09





# Enhanced Monitor Board Replacement

TLA 7UP option 09 supports the removal and replacement of the enhanced monitor board. The new enhanced monitor board supplied with this kit provides functionality to the TLA 720 benchtop mainframe so that the mainframe can be used with the TLA 7XM expansion mainframe.

This option is required on all mainframes manufactured before the serial numbers specified in *Instruments* below.

This kit contains an enhanced monitor board and labels.

## Instruments

TLA 720      B010100 to B019999

## Kit Parts List

Table 9-1: TLA 7UP Option 09 Parts List

Quantity	Part number	Description
1	071-0572-XX	TLA 7UP Mainframe Field Upgrade Kit Instruction Manual
1	671-3982-02	Enhanced Monitor Board
1	N/A	TLA 7UP kit label

## Removal Instructions

To remove the enhanced monitor board follow these instructions.

1. Refer to Figure 9–1 and unscrew the captive screw that attaches the cable cover. Remove the cable cover and set it aside.
2. Unplug the blower cable from the connector marked 1/BLOWER.
3. Unscrew the two captive screws that attach the monitor board to the chassis.
4. Slide the enhanced monitor board out of the chassis as shown in Figure 9–2.
5. Dispose of the old enhanced monitor board.

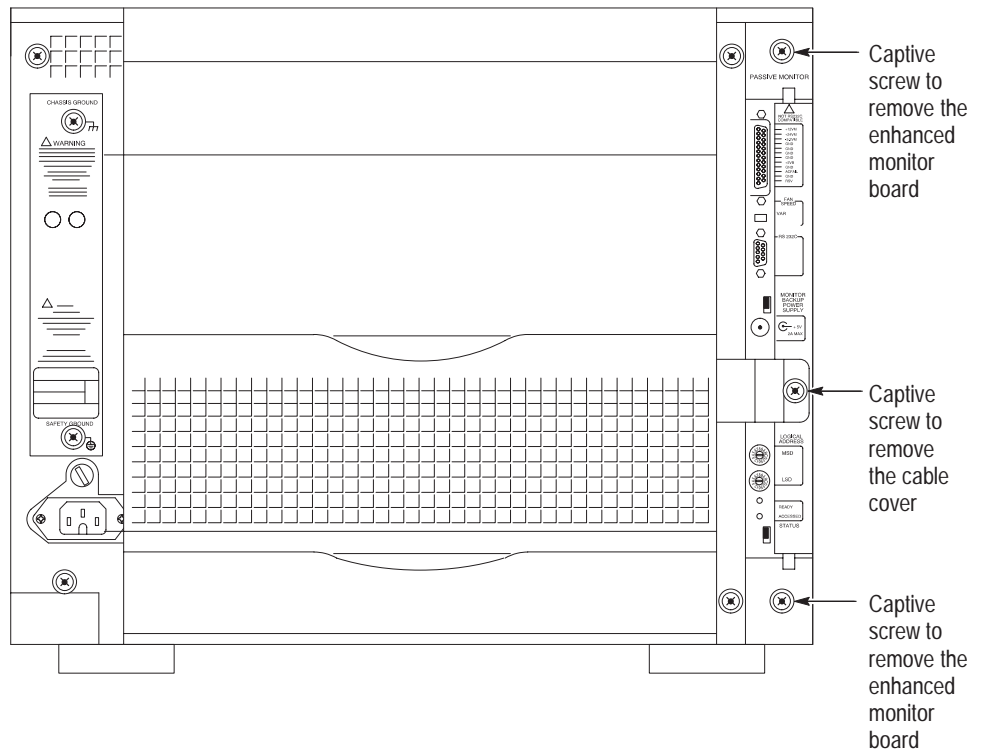


Figure 9–1: Location of enhanced monitor board screws

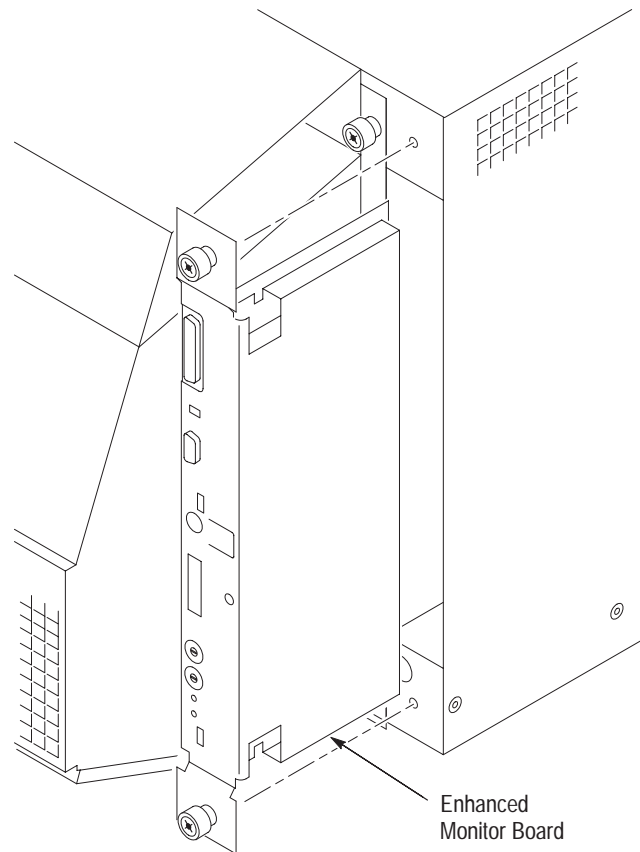


Figure 9-2: Removing/Installing the enhanced monitor board

## Installation Instructions

To install the new enhanced monitor board shipped with this option kit follow these instructions:

1. Slide the enhanced monitor board into the chassis as shown in Figure 9-2. You might have to wiggle the enhanced monitor board around a little to engage the connectors on the rear of the board.
2. Push the board fully into the chassis to fully mate the rear connectors.
3. Tighten the two screws that attach the monitor board to the chassis.
4. Plug the blower cable into the connector marked 1/BLOWER.
5. Install the cable cover and tighten the captive screw that attaches to the chassis.





# TLA 7UP Option IF



# Upgrade Installation Service

TLA 7UP option IF provides installation of product upgrades performed at a Tektronix service location.

---

***NOTE.** Availability of installation and onsite services depend on the type of product and may vary by geography.*

---

## Instruments

TLA 704	All Serial Numbers
TLA 711	All Serial Numbers
TLA 714	All Serial Numbers
TLA 720	All Serial Numbers







# TLA 7UP Option IN



# Product Installation Service

TLA 7UP option IN provides initial product installation/configuration and start up training session including front panel and product familiarization at your site.

---

***NOTE.** Availability of installation and onsite services depend on the type of product and may vary by geography.*

---

## Instruments

TLA 704	All Serial Numbers
TLA 711	All Serial Numbers
TLA 714	All Serial Numbers
TLA 720	All Serial Numbers





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