

4115/4120 UPGRADE INSTALLATION

INTRODUCTION

These instructions upgrade the following products as described below;

- X ● 4115F55 upgrades a 4115B/M4115B to a 4125 Color Workstation without the Serial Keyboard
- X ● 4115F56 adds the Serial Keyboard to a 4115F55 equipped workstation
- 4115F5801 upgrades a 4115B/M4115B to a 4128 Color Workstation
- 4115F5802 upgrades a 4125 to a 4128 Color Workstation
- 4100F59 upgrades a 4128 to a 4129 Color Workstation

CAUTION

The enclosed ROM firmware and/or boards are extremely static sensitive. To ensure successful installation and operation, use all proper procedures pertaining to protection from static electricity. Polarity of ROMs must also be correct or the components will be irreparably damaged. These components should only be installed by qualified service personnel. Contact local Tektronix service center for installation.

The following instructions assume a familiarity with the 4115B, M4115B, 4125 or the 4128. If additional information is required for disassembly or assembly, refer to the *4115/4120 Series Field Procedures Service Manual*.

This manual is divided into three portions;

- Installation instructions for 4115F55, 4115F56, and 4115F5801; upgrading a 4115B/M4115B to a 4125, adding the Serial Keyboard, or upgrading a 4115B/M4115B to a 4128.
- Installations instructions for 4115F5802; upgrading a 4125 to a 4128.
- Installation instructions for 4100F59; upgrading a 4128 to a 4129

4115F55/4115F56/4115F5801 INSTALLATION PROCEDURE

These instructions pertain to the upgrade of the 4115B/M4115B to a 4125 (4115F55), adding the Serial Keyboard to a 4115F55 equipped workstation (4115F56), or upgrading a 4115B/M4115B to a 4128 (4115F5801).

Contents

When removing components from the kit, care should be taken not to destroy or damage the packing material which may be used for return of old parts.

This kit contains these components:

- 80286/7 Processor Board (4115F55 and 4115F5801 only)
- 4120 Serial Keyboard (4115F56 and 4115F5801 only)
- ROM firmware for the SP board (4115F5801 only)
- ROM firmware for the MSIB board (option 45) if present (4115F55 and 4115F5801 only)
- Appropriate labeling to show that upgrading has been performed

WARNING

Remove the power cords from the terminal before performing the following procedure to prevent the possibility of electrical shock hazard.

For 4115F56 only, follow steps 1 and 2, and 6 through 11. Then install a strap to J609 on the 80286/7 Processor board to enable use of the Serial Keyboard, and follow steps 21 through 24.

For installation of 4115F55 and 4115F5801, proceed as follows;

The first task is to arrange the circuit cards in the correct order. Proceed as follows:

1. Remove covers or panels as necessary to gain access to the card cage and power supply.
2. Remove the power supply locking pin farthest from the power connector and swing out the power supply to gain access to the rear of the card cage.
3. Remove the Processor card (8086) and the RAM/ROM card.
4. The circuit cards in the card cage should be arranged as shown in Table 1.

Table 1

4120 SERIES CIRCUIT CARD ARRANGEMENT

Slot	Card
1	Mass Storage (Option 45)
2	80286/7 Processor
3	ECC RAM (standard)
4	ECC RAM (optional)
5	3PPI (Option 10) WAS 3
6	Option 3A, 3C DMA or Option 13/14 tablet was 5
7	Color Copier (Option 9 or 19) was 7
8	4129 Tiling Memory or one of the above options
9	4129 Tiling Processor or one of the above options

This arrangement allows for future upgrades. The other cards can be left as they are.

5. Move the option cable connectors to match the options. The option cable connectors are screwed to the rear of the card cage using TORX® screws.
6. If installing the 4115F55 without 4115F56, skip to step 11. Otherwise, remove the parallel keyboard.
7. Remove the keyboard connector plate and cable and save the two screws.
8. Mount the serial keyboard connector plate (with cable) in place of the parallel keyboard connector plate using the two screws previously saved.
9. Route the keyboard cable to the rear of the card cage near slot 2 (Processor board).

For the electronics module, the keyboard cable must be routed from the keyboard connector on the rear panel, down to the cable access hole at the right side of the card cage (the RS-232 communications cable is already routed through this hole). The access hole is the only way to route the cable to the rear of the card cage.

10. Insert the loose connector pins on the internal keyboard cable into the 44-pin processor cable connector. The host port cable is already inserted into this connector.

Orient each pin in the connector so that the gold plated surface faces the circuit board. Push the pin in until it locks into place. The crimped end of the pin should be just even with the back of the connector. A gentle pull on the wire will verify that the pin is locked.

Figure 1 shows the correct location for the color coded keyboard cable wires.

11. Swing the power supply back to its original position and insert the locking pin.
12. Apply the board configuration label from the kit under the card cage.
13. Strap J341 on all ECC RAM cards needs to be set to jumper pins 1-2. This allows the 80286/7 RAM bus to be used.

14. On the 80286/7 Processor board, locate straps J83, J84, and J85. These must be set according to the amount of ECC RAM in the system as shown in Table 2.

Table 2
RAM BUS STRAPS

Amount of ECC RAM	Strap Settings		
	J83	J84	J85
256K	IN	OUT	OUT
512K	OUT	IN	OUT
768K	OUT	OUT	OUT

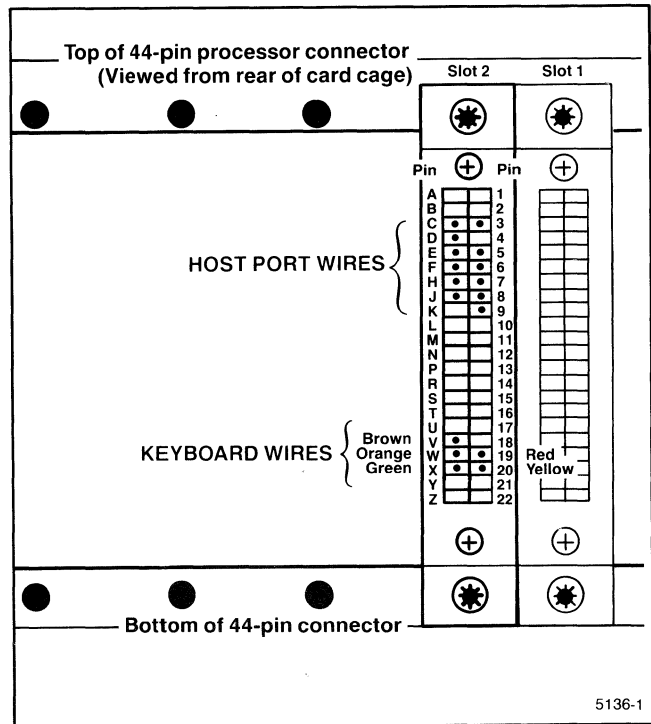


Figure 1. Installing Keyboard Wires in 44-Pin Processor Connector.

15. Check the other straps on the 80286/7 Processor board are set as shown in Table 3.

Table 3
PROCESSOR STRAPS

Strap	Position
J77	2-3
J82	1-2
J609	OUT (4115F55) IN (4115F5801) IN (4115F56)
J251	IN
J253	OUT
J255	OUT
J257	IN
J281	IN
J285	IN
J291	1-2
J295	IN
J395	1-2
J627	1-2

16. Install the 80286/7 Processor card in the card cage.

17. Plug the RAM bus ribbon cable onto the front of the processor board and to the front of the ECC RAM cards in slots 3 and 4. The red stripe should face up. If there is only one RAM card, then insert the leftmost connector into the processor board, the second connector into the RAM card, and let the rightmost connector hang next to the board, in slot 4.

18. For 4115F5801 only, replace PROMs U210 and U220 on the SP board with new ROMs from the kit. (The SP board is to the left of the Timing Controller board, which has 2 cables attached to the front.) Reinstall the SP board in the card cage.

19. Remove the Mass Storage board (Option 45), if present. Place a strap on J354 to allow use of this board with the 80286/7. Replace ROMs U370 and U376 with the new ROMs from the kit. Replace the Mass Storage board in the card cage.

20. Apply the board configuration label from the kit to the space below the card cage.

21. Replace the covers or panels. Plug in the Serial Keyboard and reconnect the power cords.

22. Apply the appropriate labels to the rear of the workstation by the serial number to indicate that the upgrade has been performed.

23. Turn the power on and verify that the workstation passes power-up Self-test.

24. Refer to the last section of this guide for information on returning unwanted old components.

4115F5802 INSTALLATION PROCEDURE

These instructions pertain to the upgrade of a 4125 to a 4128.

Contents

When removing components from the kit, care should be taken not to destroy or damage the packing material which may be used for return of old parts.

This kit contains these components:

- ROM firmware for the 80286/7 Processor board
- ROM firmware for the SP board
- Appropriate labeling to show that upgrading has been performed

WARNING

Remove the power cords from the terminal before performing the following procedure to prevent the possibility of electrical shock hazard.

The conversion of a 4125 Color Workstation to a 4128 Color Workstation involves changing the firmware on the 80286/7 Processor board and the firmware on the SP board.

1. Remove the cover from the 4125 Workstation to gain access to the card cage.
2. Remove the 80286/7 Processor board from Slot 2 of the card cage.

3. Remove the following six ROMs from their sockets taking care to not damage them; U329, U335, U341, U529, U535 and U541.
4. Install the eight ROMs from the kit in the sockets as designated on the ROM labels. Take care that pin 1 is facing the same way as the other components on the board.

After installation, check that none of the legs of the ROMs are bent under or hanging outside the socket.

5. Replace the 80286/7 Processor board and remove the SP board from the card cage. The SP board is to the left of the Timing Controller board, which has 2 cables attached to the front.
6. Replace PROMs U210 and U220 on the SP board with the new ROMs from the kit. Reinstall the SP board in the card cage.
7. Apply the circuit board configuration label from the kit to the space below the card cage.
8. Apply the appropriate labels to the back of the instrument next to the serial number to show that the instrument has been upgraded.
9. Replace the cover on the Workstation and reconnect the power cords.
10. Turn the power on and verify that the Workstation passes Self-test.
11. Refer to the last section of this guide for the return of any unwanted old firmware.

4100F59 INSTALLATION INSTRUCTIONS

These instructions pertain to the upgrade of a 4128 to a 4129.

WARNING

Remove the power cords from the terminal before performing the following procedure to prevent the possibility of electrical shock hazard.

Contents

When removing components from the kit, care should be taken not to destroy or damage the packing material which may be used for return of old parts.

This kit contains these components:

- Tiling Processor board
- Tiling Memory board
- 60-conductor ribbon cable
- Appropriate labeling to show that upgrading has been performed

The conversion of a 4128 Color Workstation to a 4129 Color Workstation involves installation of a Tiling Processor board and a Tiling Memory board.

1. Remove the cover from the 4128 Color Workstation.
2. Install the Tiling Processor board in slot 9 of the card cage.
3. Install the Tiling Memory board in slot 8 of the card cage.

4. Attach the 60-conductor ribbon cable between the two boards. The side of the cable marked with red should be up.
5. Apply the card cage board configuration label from the kit to the space below the card.
6. Replace the cover and apply the appropriate labeling to the rear of the instrument next to the serial number to indicate that the upgrade has been performed.
7. Plug in the power cords and turn the power on. Verify that Power Up Self-test passes.

RETURN OF OLD COMPONENTS

U.S. Field Offices

Any unwanted components removed from the product during the upgrade may be returned to the factory. Place old components in the packaging that the new components were shipped in and return using the following address;

Tektronix, Wilsonville Industrial Park IDD Software
Production 60-462 P.O. Box 1000 Wilsonville, Oregon
97070

International Field Offices

Do not return old components.

4110B SERIES FILE CONVERSION

INTRODUCTION

The program CONVERT is a conversion utility that converts files written on TEKTRONIX 4110 Series terminals with V4 and earlier software to CP/M86[®] compatible files as used on V6 and later software. This utility prompts you for the actions to take to convert your old files to new format files. You can use this utility with either one or two disk drives.

BEFORE YOU START

In addition to having this disk available, you must:

1. Format a V6 disk for each V4 disk you want to convert.
2. Set the disk write-protect switch(es) to OFF.

THE CONVERSION PROCEDURE

Operator Action	Terminal Response
1. Insert the program disk into FO: (right-hand drive).	
2. Press the SETUP key.	The terminal responds with the Setup mode prompt (*).
3. Type the following: LOAD \mathcal{S}_p CONVERT \mathcal{C}_R	The terminal executes the conversion program.
4. Follow the program Directions.	The terminal writes the V4 files to the V6 disks.

IN CASE OF DIFFICULTY

If the program cannot read one or the other of your disks due to a hardware problem, it will print an error message, depending on the disk it is attempting to read:

1. "I cannot read your old disk"
2. "I cannot read your new disk"

The cause may be an open disk drive door, or a faulty disk. Close the drive door and press the space bar. If you cannot get the disk to read after several disks, you should contact your Tektronix Field Service Representative.

If you insert the wrong format disk, the program will recognize the format and print an error message:

1. "This is not an old disk"
2. "This is not a new disk"

To recover, insert the correct disk and press the space bar.