Educational Services

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Installing the TF85 Tabletop
Cartridge Tape Subsystem

EK–TX85T–IG–003

Digital Equipment Corporation

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About This Guide

Contents

This guide provides information for installing the TF85 tabletop cartridge tape subsystem.

The TF85 tabletop subsystem is supported on the following series of systems:

- VAX 6000
- VAX 4000
- MicroVAX/VAXserver 3xxx (Q–bus)
- MicroVAX II

Intended Audience

This guide is for Digital Services personnel or qualified self-maintenance customers who are installing the TF85 tabletop cartridge tape subsystem on systems with DSSI bus adapters *in place.* That is, the bus adapters to be used for connecting the TF85 to the system must be embedded within the CPU module or on an installed adapter module, such as the KFMSA or KFQSA.

How to Use This Guide

First read the next section, Before You Start, to prepare for the installation. Then follow the procedure in Steps to Follow, using the illustrations and examples as a guide.

Before You Start

Performance Consideration

The VMS backup performance rate of the TF85 subsystem can depend on the system processor. For example:

- Connecting directly to an embedded bus adapter on such systems as the VAX 4000 or VAX 6000 provides optimum performance.

- Connecting to a MicroVAX/VAXserver 3xxx (Q–bus) system can reduce the rate of performance, but does not limit the high capacity of data storage that the TF85 has.

Required Load Device

The TF85, when connected to a KFQSA adapter installed in a MicroVAX II or MicroVAX/VAXserver 3xxx system, does not support booting of VMS or MicroVAX Diagnostic Monitor (MDM) software. An additional load device is needed to boot this software.

Required Tool

Although you can hand-tighten the screws that hold the connectors in place, you need to use a flat blade screwdriver to secure the connectors.

Before You Start, Continued

Related Documents	Keep the system and DSSI adapter documentation on hand for referencing during the installation.

Order Number	Title
	For Installations on VAX 4000 Systems
EK–432AA–IN	VAX 4000 Model 200 (BA215) Installation Guide
EK–436AB–IN	VAX 4000 Model 200 (BA430) Installation Guide
EK–396AB–TI	VAX 4000 Model 200 Technical Information
EK–335AC–IN	VAX 4000 Model 300 Installation Guide
EK–337AB–TI	VAX 4000 Model 300 Technical Information
	For Installations on MicroVAX/VAXserver 3300 and 3400 Systems
EK–020AA–TI	MicroVAX 3300/VAXserver 3300 Technical Information
EK–160AA–IN	MicroVAX 3400/VAXserver 3400 Installation Guide
EK–163AA–TI	MicroVAX 3400/VAXserver 3400 Technical Information
	DSSI Adapter Documents
EK–KFQSA–IN	KFQSA Module Installation and User Manual
EK–KFMSA–IM	KFMSA Module Installation and User Manual
	Subsystem Documents
EK–OTF85–OM	Tx85 Series Cartridge Tape Subsystem Owner's Manual
EK–OTK85–RC	Tx85 Tape Drive Operator's Reference Card

Steps to Follow

Use the following procedure to install the TF85 tabletop subsystem:

Unpack

1. The TF85 tabletop subsystem and its accessories ship together in a box. Your cable kit is a separate order. Make sure you have all the items on the contents listings:

Box Contents

	Part Number	Description
☐	TF85–TA	TF85 tabletop subsystem: a 5-1/4-inch drive and a DSSI controller in a tabletop enclosure
☐	TK85K–01	One CompacTape III cartridge
☐	TK85–HC	One CleaningTape III cartridge
☐	12–28766–28	Packet of DSSI node ID plugs
☐	Country-specific	Power cord
☐	36–28816–02	Sheet of foreign language decals
☐	EK–TX85T–IG	This installation guide
☐	EK–OTF85–OM	Owner's manual
☐	EK–OTK85–RC	Operator's reference card

Steps to Follow, Continued

Unpack (continued)

Cable kit options are as follows:

Cable Kit	
Part Number	**Description**
CK–SF100–LP	Cable kit with 9-foot DSSI cable for VAX 4000 models, MicroVAX/VAXserver 3xxx series, or MicroVAX II.
CK–SF100–L6	Cable kit with 16-foot DSSI cable for VAX 4000 models, MicroVAX/VAXserver 3xxx series, or MicroVAX II.
CK–SF100–L4	Cable kit with 25-foot DSSI cable for VAX 4000 models, MicroVAX/VAXserver 3xxx series, or MicroVAX II.
CK–SF100–LM	Cable kit with 9-foot DSSI cable for VAX 6000 and 9000 systems.
CK–SF100–L5	Cable kit with 16-foot DSSI cable for VAX 6000 and 9000 systems.
CK–SF100–L3	Cable kit with 25-foot DSSI cable for VAX 6000 and 9000 systems.

If any item is missing or damaged, contact the delivery agent or Digital sales representative.

NOTE
Save the packing materials until you are sure you will not reship any items.

Steps to Follow, Continued

Choose a Site

2. Place the TF85 on a flat, sturdy, level area such as a desk or tabletop—*not on the floor*:

   - Avoid a site that is dusty or humid.
   - Allow enough space around the TF85 for ventilation and for easy access to the front and rear.

Affix Decals

3. If applicable, choose the foreign language decals with the language appropriate for your country and affix them over the English labels on the TF85 front panel. One decal adheres to the cartridge insert/release handle, the other adheres to the indicator panel (*see* TF85 Front View).

Steps to Follow, Continued

TF85 Front View

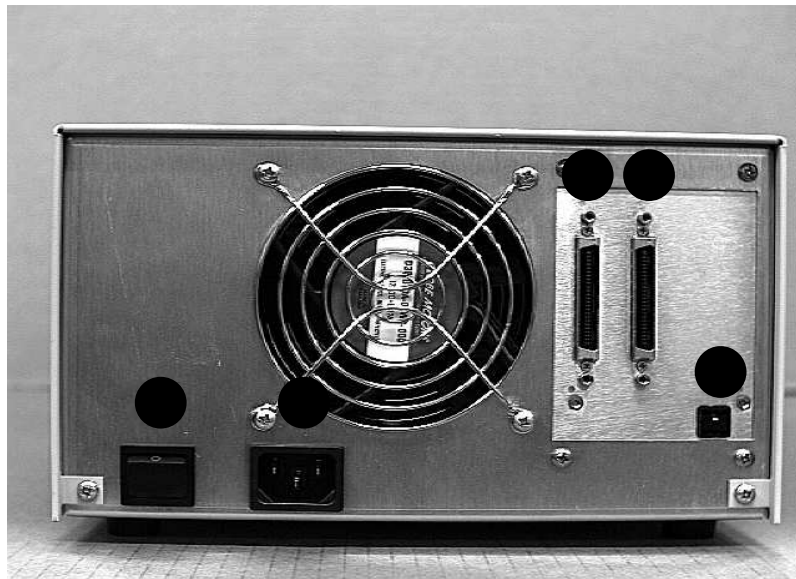The following illustration shows the front panel on the TF85 tabletop subsystem:
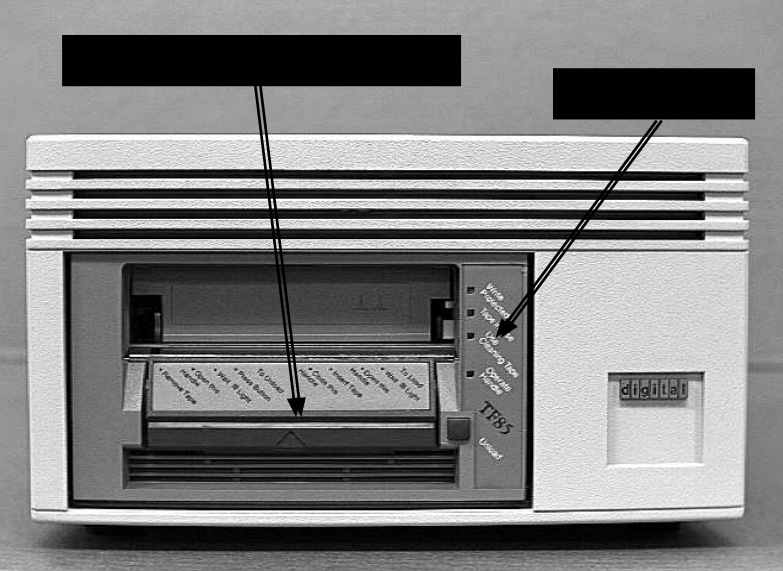
Steps to Follow, Continued

TF85 Rear View

Familiarize yourself with the TF85 rear panel for this installation:

❶ DSSI node ID socket

❷ DSSI signal connector in

❸ DSSI signal connector out/termination

❹ Power switch

❺ Power connector

Steps to Follow, Continued

Power Off the System

4. Check that the system manager has performed the following steps:

    a. Back up all disk integrated storage elements (ISEs).

    b. Shut down the operating system.

    c. Halt the system.

    d. Remove power from the system.

Select a DSSI Node ID

5. Select a DSSI node ID plug with an ID that is unique from any other devices on the DSSI bus.

    DSSI adapters typically have the highest node ID number(s) on the bus (7 when one adapter is on the bus; 7 and 6 for two adapters; 7, 6, and 5 for three adapters, and so on). Tape ISEs typically have a low DSSI node number (in most cases 0). Disk ISEs are typically assigned the remaining DSSI nodes, after adapters and tape ISEs have been assigned.

    When adding a second TF85x to a DSSI bus, remember that no two devices on the DSSI bus can have the same ID number.

    NOTE
   **Save the spare DSSI node ID plugs for future
    system reconfigurations.**

6. Insert the DSSI node ID plug into the DSSI node ID socket on the rear panel (TF85 Rear View ❶) by aligning the two center prongs with the two center slots and pressing the plug into place.
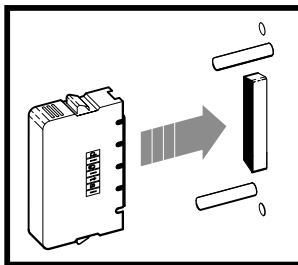
Connect to the DSSI Bus

7. Plug the DSSI cable into the leftmost TF85 DSSI connector (TF85 Rear View ❷) by fitting the cable connector over the two pins on the DSSI connector. First tighten the screws by hand, then secure the connection with a screwdriver.
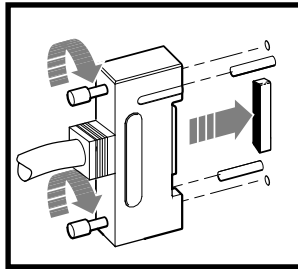
LJ-00914-TI0

8. If this is the last device on this bus, attach the DSSI terminator to the rightmost TF85 DSSI connector (TF85 Rear View ❸). Make sure the orientation of the terminator is correct—it fits on the DSSI connector in one way only— and push the terminator onto the connector. The spring clips should lock the terminator in place.

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Steps to Follow, Continued

**Connect to
the DSSI Bus
(continued)**
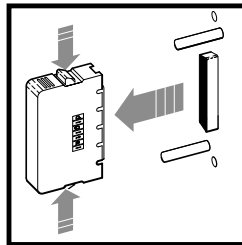
LJ-00925-TI0

9. Connect the other end of the DSSI cable to the DSSI
    I/O bulkhead on the system. Follow the procedures in
    the system or DSSI adapter documentation (*see* Related
    Documents *in this guide*).

Steps to Follow, Continued

Connect to Power

10. Be sure the TF85 power switch (TF85 Rear View ❹) is set to 0 (off).

11. Connect the power cord to the TF85 power connector (TF85 Rear View ❺). Make sure the connector is fully seated.

12. Connect the other end of the power cord to a nearby ac outlet.

Power On the TF85

13. Set the TF85 power switch on. The power-on self-test (POST) runs automatically when you power on the TF85. Observe the indicators on the front panel:

    a. The indicators on the front panel turn on sequentially, from top to bottom.

    b. All four indicators turn on simultaneously for approximately three seconds.

    c. The green Operate Handle indicator and the two orange indicators turn off.

    d. The yellow Tape in Use indicator blinks.

    e. With no cartridge loaded, the green Operate Handle indicator turns on and the beeper sounds.

POST ran successfully if you observed the above. Proceed to step 14 in Power On the System. Otherwise, see the following section, POST Failure.

Steps to Follow, Continued

POST Failure   If all four indicators on the TF85 front panel blink, POST did
                     not run successfully:

- Check the cable connections to make sure that they are
  secure.

- Press the Unload button on the TF85 front panel to reset
  the TF85 and restart POST.

If all four indicators blink again, you most likely have a
hardware failure. See the *Tx800 Series Magazine Tape
Subsystem Service Manual* (EK–TF857–SM).

Power On the   14. After successful completion of POST, have the system
System   manager perform the following steps:

    a.   Restore power to the system.

    b.   Configure the system to recognize the TF85.

    c.   Restart the operating system.

Steps to Follow, Continued

Configuration Example

Configuration depends on the type of adapter or system you have. Follow the procedures in the system or DSSI adapter documentation (*see* Related Documents).

The following dialog is an example of configuring a VAX 4000 system in console I/O mode. The example uses the DUP utility from system software and the PARAMS utility resident on the TF85:

```
>>> SHOW DSSI
DSSI Bus 0 Node 0 (T8DBBB)
-MIA10 (TF85)
DSSI Bus 0 Node 1 (FRED)
-DIA10 (RF71)
DSSI Bus 0 Node 2 (PEBBLES)
-DIA11 (RF71)
DSSI Bus 0 Node 7 (*)

DSSI Bus 1 Node 0 (DINO)
-DIB0 (RF71)
DSSI Bus 1 Node 1 (BARNEY)
-DIB1 (RF71)

DSSI Bus 1 Node 7 (*)
>>>

>>> SET HOST/DUP/DSSI/BUS:0 0 PARAMS
Starting DUP server...
Copyright (c) 1990  Digital Equipment Corporation

PARAMS>
```

The above command example uses `BUS:0 0`. For your application, use the format `BUS:`n m where n = the bus number and m = the node number on which you have installed the TF85.

Steps to Follow, Continued

Configuration Example (continued)

```
PARAMS> SHOW /ALL

Parameter      Current    Default    Minimum    Maximum   Radix
UNITNUM              0          0          0        255   Decimal
FORCEUNIT            1          1          0          1   Decimal
NODENAME        T8DBBB       TF85                         Ascii
FORCENAME            0          0          0          1   Decimal
SYSTEMID 420000F00002                                     Quad

PARAMS> SET NODENAME WILMA
PARAMS> WRITE

Changes require controller initialization, ok? [Y/(N)] Y

PARAMS> EXIT

>>>
```

See the *Tx85 Series Cartridge Tape Subsystem Owner's Manual* for details on using the PARAMS utility to set TF85 parameters.

Test the Installation

15. Once the system is configured to recognize the TF85, load a previously recorded data cartridge into the TF85 and test the installation by running DRVEXR, a local program on the TF85. (See the *Tx85 Series Cartridge Tape Subsystem Owner's Manual* for cartridge loading instructions.)

Steps to Follow, Continued

DRVEXR
Example

<div align="center">

CAUTION
During the write/read operation, DRVEXR destroys
the data on the cartridge. Be sure to use a scratch
data cartridge.

</div>

DRVEXR is an intensive data transfer test that indicates the overall integrity of the TF85. The following example shows running DRVEXR from console I/O mode:

```
>>> SET HOST/DUP/DSSI/BUS:0 0 DRVEXR
Starting DUP server...
Copyright (c) 1990  Digital Equipment Corporation

Write/read anywhere on medium? [1=Yes/(0=No)] 1
User Data will be corrupted. Proceed? [1=Yes/(0=No)] 1
Test Time in Minutes [(10) - 100] 10
Minutes to Complete: 10

Statistical Report

 Test Name: DRVEXR, Pass 1
 Random Seed:           3075021312
 Byte Count:                     0
 Pattern Number:                 9
 Data Errors:     Read      Write
    Retries:        0          0
        ECC:        0          0
       Hard:        0          0
 Data Compare Errors:            0
 Mispositions:                   0
 Kbytes Written:            190221  Read:      82133

 Test Passed
```

Steps to Follow, Continued

DRVEXR Messages

DRVEXR messages include the following:

Type	Message

Question	`Write/read anywhere on the medium? [1=YES /(0=NO)]`
	
	Answering 0 (NO) results in a read-only test. Successful operation of the read-only test requires a previously written tape. Answering 1 (YES) results in the next question being asked.
	
	`User data will be corrupted, proceed? [1=YES /(0=NO)]`
	
	Answering 0 (NO) results in a read-only test. Answering 1 (YES) permits write and read operations anywhere on the tape.
	
	`Test time in minutes? [10-100]`
	
	Answer with an execution time from 10 to 100 minutes.

Information	*nnn* `minutes to complete.` *nnnnnnn* `bytes read.` *nnnnnnn* `bytes written.`
Termination	`Complete.`

Fatal error	`Unit is currently in use.`
	`Operation aborted by user.`
	XXXX `- Unit diagnostics failed.`
	XXXX `- Unit read/write test failed.`

Steps to Follow, Continued

Correct Any Problems

If the TF85 fails during power-up or operation, use the following table to determine the problem and the action to take:

If. . .	Then. . .	You should. . .
The system does not recognize the TF85	The DSSI cable is loose	Tighten the connector on each end of the DSSI cable to make sure the connectors are fully seated.
	The DSSI terminator is not present or is loose	Install the terminator; make sure the terminator is fully seated.
	The DSSI node ID is not unique	Change the node ID and reconfigure the system.
You are finding fatal or nonfatal errors for which you cannot determine the cause	The bus termination or DSSI cable connections may be incorrect	Make sure the DSSI bus is terminated and the terminator LED is on to avoid incorrect bus termination.

Steps to Follow, Continued

Correct Any Problems (continued)

If. . .	Then. . .	You should. . .
You are finding fatal or nonfatal errors for which you cannot determine the cause	The ac power source grounding may be incorrect	Use an ac outlet for the TF85 on the same ac line that is powering the system.
The green LED on the DSSI terminator is not on	The terminator has no power	Check for a loose cable connection or a bad DSSI cable, or try another terminator.
The cartridge will not load	The cartridge insert/release handle is not correctly positioned	See the owner's manual for operating instructions.
The TF85 does not power up	The TF85 has no power	Check the TF85 power cord connections, with the TF85 power switch off.

Steps to Follow, Continued

Correct Any Problems (continued)

If. . .	Then. . .	You should. . .
All four indicators on the TF85 front panel blink	A drive fault has occurred	Press the Unload button on the TF85 front panel to clear the error. If the error does not clear, see the service manual (EK–TF857–SM).

Ready to Operate

16. The installation is complete, and the TF85 tabletop subsystem is ready for use, once the DRVEXR test passes. The *Tx85 Series Cartridge Tape Subsystem Owner's Manual* provides operating instructions.