



**Display Terminal CPU Upgrade Kit  
Installation Guide**

August 2002

TM-DTUP15-000G PD 4533

Use to upgrade a Data Brick CPU Display Terminal  
to the Current CPU system.

Ethernet Kit 00-101652-100A  
Token Ring Kit 00-101652-100B

## Document History

Document Number	Date	Remarks
TM-DTUP15-000A	10/12/99	First Printing
TM-DTUP15-000B	1/31/2000	Second Printing
TM-DTUP15-000C	2/22/2000	Third Printing
TM-DTUP15-000D	10/24/2000	Fourth Printing
TM-DTUP15-000E	3/13/2001	Fifth Printing
TM-DTUP15-000F	6/04/2002	Insert MedSelect company name & logo Update Patents, Trademarks and Copyright
TM-DTUP15-000G	08/21/02	

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Other MedSelect patents pending: 09/014076, 09/086857, 09/288685, 09/384650, 09/428035, 09/428036, 09/578540, 09/848633, 09/849625, 09/921014.

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# 1. Introduction

## 1.1 Installation Kit Description

The installation kit is available in both Ethernet and Token Ring versions, identified as 00-101652-000A and 00-101652-000B, respectively. The kit provides the capability to upgrade Data Brick versions of the DT to a separate CPU system. **The upgrade does not remove the Computer Assembly (Data Brick).** For additional information on the DT system, refer to the *Display Terminal 1.5 Installation Guide*, TM-MSDT15-000A.

### Note

It is not the intention of this kit instruction to be all inclusive of a DT system installation. Please refer to the above mentioned guide for details on a DT system installation.

### 1.1.1 Kit Bill-of-Material

The following items are provided in this upgrade kit.

Part No.:	Qty	Description:
19-040261-000A*	1	CMPTR,SM FRM FACTOR,PENTIUM 4,WIN2000,ETHERNET
19-040261-000B*	1	CMPTR,SM FRM FACTOR,PENTIUM 4,WIN2000,TOKEN RING
49-014546-000A	1	MT,CMPTR,DT
39-014139-000A	1	SURGE SUPPR,0555 J,07 OUT,W/SW
19-040150-000A	1	CA KIT,DT
11-007615-000E	6	CA TIE,STRAP,1.25 DIA
11-009109-0000	3	CA TIE MT,RND,ADH,SM

\*Either the 1st or 2nd part will be supplied, depending whether the system uses Ethernet (Kit 00-101652-100A) or Token Ring (Kit 00-101652-100B) communication protocol.

### 1.1.2 Kit Upgrade Description

The Data Brick is completely disconnected and left inside the DT shell. Existing touchscreen, keyboard, and video connections are reconnected to supplied cable bundle which is routed up through an access hole on the bottom of the DT shell. The card reader cable remains connected to the keyboard, and the power supply still provides operating power for the touchscreen. However, the power cable connection for the Data Brick is no longer used and is insulated to avoid inadvertent shorts.

For your reference, Figure 1 shows the internal cabling of a pre-1.5 version of the DT. The figure is useful for identifying the various cables that must be transferred to new connections for this upgrade. Figure 2 shows the physical layout of cable hardware to show you how to maintain a neat and compact cable arrangement behind the security panel. Follow this figure as closely as possible. The system cable is also shown in this figure and includes connector destination identification and gender. Figure 3 shows the DT system cabling. The DT-UI in this figure is the end result of this upgrade.

### **Note**

The operating system being introduced with the upgrade DT-CPU is Windows 2000 (as of 10/00). The CPU's are sent without any touchscreen enabled . The cable connects to COM 2 for the MicroTouch and Dynapro.

## 2. DT Upgrade

### 2.1 Modifying the DT

This procedure simply disconnects the Data Brick from power and all system connections. It is the intention of this procedure to leave the Data Brick behind (i.e., leave the Data Brick mounted inside DT).

Proceed as follows:

1. Take the DT off-line.
2. Disconnect the DT power cord.
3. Remove the security panel.
4. Disconnect all connections to the Data Brick. Remove the ferrite core assembly from the LAN cable and set aside. This assembly will be used in Section 2.2, below.
5. Dress the internal cabling. See **DT Upgrade Internal Cabling** below.

### 2.2 DT Upgrade Internal Cabling

For reference, the following illustrations are provided at the end of this upgrade instruction:

- Figure 1 - A pre-1.5 version DT internal cable layout and assembly identification.
- Figure 2 - A typical DT-UI internal cabling arrangement with mag-swipe or bar code reader.
- Figure 3 - A DT separate CPU configuration and cable connection diagram.

Enough cable ties and adhesive-back cable clips are provided to neatly bundle all internal DT-UI cabling behind the security panel. Dress cabling inside the DT-UI so that there is clearance for the security panel to be secured. When properly arranged behind the security panel, this cabling is hidden from the operator's view.

Several important points of consideration when dressing internal cables follows:

- The DC power connection used for the Data Brick is no longer needed. This connection must be sealed with electrical tape or, preferably, heat shrink tubing and tied back to the internal cable bundle. However, the power connection to the touchscreen is still required. The power cable remains connected to the VGA/CRT connector. Add the ferrite core assembly that was removed from the LAN cable (see Step 4 in Section 2.1, above) to the power cable. Loop the cable one turn through the core.
- The main cable bundle from the external components of the DT (specifically DT-CPU) system is covered by a protective split tubing and enters the DT being upgraded through a grommeted hole at the bottom of its shell. Be sure to push the tubing up far enough into the DT so that it can be secured with a tie wrap to the metal post that connects the front and rear shells of the DT. The cables that make up this bundle are shown in Figure 2.

- The AC power cord for the DT power supply can be dressed neatly into the external cable bundling by pressing it into the split of the protective tubing. The power cord can then be brought out of the split external to the DT at any convenient point.

## 2.3 Card Reader Cabling

The DT-UI may be supplied with either a mag-swipe card reader or bar code reader, depending on the requirements of the facility. The bundling of cabling for these two types of readers is different. A brief description of the cable connections for these readers is provided in Section 2.3.1 **Mag-Swipe Card Reader** and Section 2.3.2 **Bar Code Reader**, respectively. A suggested method of dressing the cabling within the DT-UI when a mag-swipe card reader or bar code reader is used is illustrated in Figure 2.

### Note

Be sure to add a ferrite core assembly around both keyboard cables coming out of the card reader (or the bar code reader decoder). The core should be placed as close as possible to the card reader (or decoder) assembly.

### 2.3.1 Mag-Swipe Card Reader

The mag-swipe reader has two cables. One cable is terminated in a 6-pin female mini-DIN plug for accepting the keyboard connector. The other cable is terminated in a 6-pin male mini-DIN plug for plugging into the KEYBOARD port on the Computer Assembly. This cable arrangement allows simultaneous connection of the card reader and keyboard to this port.

### 2.3.2 Bar Code Reader

The bar code reader consists of the reader unit and decoder unit. The decoder is mounted with Velcro to the inside of the DT-UI behind the security panel. The reader unit is connected to the decoder by a cable that is routed through the provided hole in the side of the DT-UI as described for the mag-swipe reader. This cable has excessive length and should be looped and tied to take up the excess.

As described for the mag-swipe reader, two cables are provided for connecting to the keyboard connector and the keyboard port on the computer assembly. These cables attach to the decoder unit. It is not possible to connect cables to the wrong connector.

## 2.4 DT Upgrade Cable Routing and Connections

It is assumed that all items of equipment for the DT configuration have been mounted in their permanent location and that the PC has not yet been installed into the DT-CPU computer mount. The PC is installed in its computer mount as the last work detail. Cable connections to the PC are then made while inserting the PC. Full details for mounting equipment are provided in the *Installation Guide*, TM-MEDINS-000B.



After installing the upgraded DT-UI, DT-CPU, power strip/surge protector, and optional hardware (printer, etc.), route and connect the provided signal cabling and power cords. The special considerations in routing and bundling the external cabling between the DT-CPU, DT-UI, power strip/surge protector, and optional hardware are described below. Refer to Figure 3 for the complete DT system installation connections.



*When installing the DT-CPU, be certain that all cable connections are made before connecting the power cord to its power source. A power switch (set to ON at installation) is located on the internal PC of the DT-CPU, but is not readily accessible when the DT-CPU computer mount is buttoned up. Thus, if the system is not connected and operational when the power cord is plugged in to its source, errors could be generated and logged at power up.*

#### **2.4.1 Connecting and Bundling Upgraded DT-UI To DT-CPU Cabling**

The upgraded DT-UI to DT-CPU cabling is shown in Figure 3. Follow any additional installation requirements noted in the illustration.

Although Figure 3 notes which cables should be contained in the spiral wrap, include any other cables that can be added to create a neat installation. Also, cables can be routed out of the side of the spiral wrap as needed. The spiral wrap is split to allow for cable entrance/exit at any point.

Refer to Figure 3 for extension cable part numbers.

#### **Note**

The maximum cable routing distance from the DT-UI to the rear connector panel of the DT-CPU is 10 feet. The extra 2 feet of supplied cable is to allow the CPU to be removed from the housing without disconnecting.

#### **2.4.2 Printer**

The cable for the optional printer was connected to the Data Brick of the earlier version DT. This cable for the optional printer was routed up through a small notch on the right side of the rear housing of the DT (with reference to front of DT). This cable is now removed for the upgraded DT and reconnected to the printer port of the DT-CPU (see Figure 3).

It is necessary to separate the two halves of the DT housing to remove the printer cable. The two halves are held together by four socket type screws that must be removed from the back side of the rear housing. These screws require a 1/8" hex wrench.

Perform the following procedure to remove the printer cable:

1. Separate the two halves of the DT housing.
2. Remove the cable and then remove the grommet from the cable. The grommet may be cut off the cable.
3. Reassemble the casing halves.
4. Place the printer where desired and connect the cable to the DT-CPU parallel printer port.

It may be desirable to hide this cable within the spiral wrap. In this case, it may be necessary to use tape to reinforce the spiral wrap where these connectors are located within the bundle.

### 2.4.3 IB Serial Cable

The IB serial cable was connected to the Data Brick of the earlier version DT. This cable is now removed for the upgraded DT and is reconnected to **COM 1** on the DT-CPU (see Figure 3).

### 2.4.4 Installing LAN Cabling

**LAN Cable:** The LAN was connected to the Data Brick of the earlier version DT. This cable is now removed for the upgraded DT and is reconnected to the LAN connector on the DT-CPU (see Figure 3).

**Token Ring Cable:** The token ring cable was connected to a PCMCIA card inserted in the Data Brick of the earlier version DT. The PCMCIA is no longer used and may remain with the Data Brick. The token ring cable, however, was a part of the PCMCIA card. Therefore, a new cable (e.g., Cat5 TP LAN cable) will now be required as the replacement.

The length of the cable is site dependent and is generally supplied by the customer. This cable is now connected to the PCI Card 1 (NIC) connector on the DT-CPU (see Figure 3).

### 2.4.5 IRDA Link

The IrDa transceiver cable was previously connected to the COM4 port on the DT-CPU (see Figure 3). *Please contact your sales or service organization for details on installation with the new CPU.*

The IrDa transceiver is optional equipment that includes a length of cable that is not long enough to match the 12 foot cable requirement between the upgraded DT and DT-CPU. For this reason, a 6 foot extension is provided when this option is present. The connections between the extension and IrDa supplied cable are DB type connectors. It may be desirable to hide this cable within the spiral wrap. In this case, it may be necessary to use tape to reinforce the spiral wrap where these connectors are located within the bundle.

The IrDa transceiver can be mounted anywhere within 10 feet of the DT-CPU. The cable extension connectors require the use of two jack nuts to secure mating connectors.

## 2.4.6 Verify the Touchscreen Type and Functionality

### Note

The Dynapro touchscreen has flat control buttons, a 10.2" diagonal view screen. The contrast and brightness controls are located on the left and are on a smooth flat surface.

Looks the same as the Dynapro except the contrast and brightness controls are on raised "bubbles". When you slide your finger over these you will feel a distinctive raised surface.

If the DT you are working on has a Dynapro touchscreen, you should proceed to Section 2.5.

### Note

The operating system being introduced with the upgrade DT-CPU is Windows 2000 (as of 10/00). The CPU's are sent without any touchscreen enabled. The cable connects to COM 2 for the MicroTouch and Dynapro.

The Display Terminal touchscreen drivers are already installed on the CPU before it is shipped. By default, the enabled touchscreen driver is for the **Dynapro** touchscreen. If the DT you are upgrading has the newer MicroTouch touchscreen, the "touch mode" of the screen will not function (however, the keyboard will be functional). To correct this problem, you must disable the Dynapro driver and install the MicroTouch (see **Changing a Dynapro Touchscreen Driver to a MicroTouch Touchscreen Driver**, below).

### 2.4.6.1 Installing the Touchscreen Driver

**Make sure the touchscreen is connected to COM Port B/2 before you activate it.**

There are two files for each touchscreen; one is used to enable it and the other is to disable it. *The touchscreen is not activated from the factory.* The disable file would only be used if the wrong enable file was executed or if the screen has been replaced with a different type.

1. Inspect the touchscreen to determine what type it is.
2. Connect the screen to COM B/2 connector at the rear of the PC.
3. Turn on the PC.
4. At the desktop press <CTRL-ESC> to bring up the start menu.
5. Press "R" to open the run window.
6. For the DYNAPRO touchscreen type "**dyna**" (no quotes) <ENTER> 3 times.
7. For the Microtouch touch screen type "**mt**" <ENTER> 3 times.
8. For the ELO Touch touch screen type "**elo**" <ENTER> 3 times.
9. Restart the machine.

Calibrate the touchscreen from the instructions in a following section.

### 2.4.6.2 Disabling the Wrong Touchscreen Driver

If you ran the wrong touchscreen command, remove (disable) it first by running the following commands before you can run the correct command.

Execute the following commands in the "run" menu.

After you press <ENTER> for the following files the command prompt window may "hang" for about 30 seconds. Please allow it to complete.

**remelo** <ENTER> to disable the ELO touch driver.

**remmt** <ENTER> to disable the Microtouch driver.

**remdyna** <ENTER> to disable the dynapro driver.

If you get an error when you run one of the above files this indicates that the wrong file was run or the touch screen was not attached.

## 2.5 DT Upgrade Setup

After performing the hardware installation, and verifying the touchscreen function, proceed with the steps below to download the latest DT application from the server. The procedures must be performed in the order listed.

### Note

The operating system on all new CPUs is **Windows 2000**.  
The DT software on the server will be compatible with this operating system.

### 2.5.1 Assign the IP and Router Addresses on the Display Terminal

All system computers must be assigned an IP address, and if the customer's site uses a router, then a router address must also be assigned. The IP address may be provided by the customer or MedSelect. The router address must be provided by the customer.

The following instructions can be used to assign the IP and router addresses to a Display Terminal.

To complete this task, you will need to know if the customer is using a router (or gateway) on the network. Proceed as follows:

1. From the Windows task bar, choose **Start, Settings, Network & Dialup Connections**. (Choose **CTRL+ESC** to open the Start menu.)
2. Select **Local Area Connection**.
3. Select the **Properties** button from the **Local Area Connection Status** dialog.

4. Select **Internet Protocol (TCP/IP)**.
5. Select the **Properties** button.
6. In the **IP Address** field, enter the IP address provided by the customer.
7. In the **Subnet Mask** field, enter address provided by the customer.
8. If the customer uses a router on the network, then edit the **Default Gateway** field.
9. Click **OK** button(s) to accept the changes.
10. Restart when prompted.

### 2.5.2 Assigning a Computer Name (Node Name) to the Display Terminal

The computer name of the Display Terminal must match the Display Terminal Node Name that was given to the DT at the AWS. The name can contain a hyphen or underscore, but cannot contain spaces or special characters. The name must be unique.

To assign a computer name (Node Name) to a Display Terminal, proceed as follows:

1. From the Windows task bar, choose **Start, Settings, Control Panel**. (Choose **CTRL+Esc** to open the Start menu.)
2. Select the **System** icon.
3. Select the **Network ID** tab.
4. Press the **Properties** button.
5. Enter the **Computer Name**.
6. Click **OK**, then **OK** again to accept the changes.
7. Close the **Control Panel** window.

### 2.5.3 Installing the Display Terminal Application

Proceed as follows to ftp the DT installation files from the server to the Display Terminal, then install the software.

1. From the **Start Menu**, select **Run...**
2. Type **FTP medsvr** then select the **OK** button (or type another server name if it was changed from the as-shipped name of medsvr).

A DOS window will open.

3. At the login prompt, enter **oraadmin**
4. At the password prompt, enter the oraadmin password (must be supplied by the customer).

5. At the FTP> prompt, enter **lcd c:\temp**
6. At the FTP> prompt, enter **binary**
7. At the FTP> prompt, enter **prompt**
8. At the FTP> prompt, enter  
**get /db/diskettes/dt/dtsetup/dtsetup.exe**
9. At the next FTP> prompt, enter **quit**
10. From the Windows Task Bar, select **Start**, then select **Run...**
11. Type **c:\temp\dtsetup.exe** then press **Enter**

The Display Terminal application software will be installed. This completes the upgrade of a DT with separate CPU. It is now ready to go on-line.

## 3. Troubleshooting Information

### 3.1 The DT is Not Connecting to the Server

#### 3.1.1 Checking the Host File

A host file allows you to assign an IP address to a server name so that its clients can identify it. The host file can be found in C:\WINNT\system32\drivers\etc\host. (If the “Open With” dialog opens, choose **Notepad** or **Wordpad**.) The host file information will include information like the following:

```
# hosts
192.168.170.100    medsvr
```

The IP address will be unique to the Database Server. In the example above, the file tells the Display Terminal, AWS, or NWS that the address of medsvr (the name of the Database Server) is 192.168.170.100.

Many different applications may access the host file by pointing to the name medsvr instead of the IP address. If the server address changes, only the IP address in the host file needs to be changed. The name medsvr will now be identified with that new number, and the applications that point to medsvr will continue to operate successfully. Otherwise, a file of the type \*.ini would need to be modified in each separate application that communicates with the server.

#### 3.1.2 Checking the TNSNAMES.ORA File

If you cannot establish Display Terminal communication with the server, and the Host file appears to be correct, then check the name service assignment in the TNSNAMES.ORA file. This file is located in C:\ORAWIN95\NETWORK\ADMIN\TNSNAMES.ORA.

The file should contain a heading called Trac = and beneath this heading should be a line that defines the Host as medsvr:

```
Trac =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS =
        (COMMUNITY = tcp.world)
        (PROTOCOL = TCP)
        (HOST = medsvr)
        (PORT = 1521)
```

If you do not find this information, or if it is incorrect, then edit the file. **If you re-install upgraded versions of the Display Terminal software, the TNSNAMES.ORA file will be preserved, and the information in it will remain unchanged.**

## 3.2 The Touchscreen is Not Calibrated

You do not need to exit any applications already running on the DT. You can run this calibration routine at any time.

Keys are used in the event the screen is way out of calibration

### 3.2.1 Calibrating a Dynapro Touchscreen

1. <CTRL-ESC> Brings up the Windows 2000 task bar
2. <P> Selects the **Programs** option
3. <DOWN-ARROW> until "**UPDD**" is highlighted
4. <RIGHT-ARROW> to highlight "**Calibrate**"
5. <ENTER> to initiate calibration program
6. After touching the first calibration point on the screen the cursor will jump around erratically. Proceed as instructed and touch the extreme corners of the touch screen. There may be one or two "Invalid calibration" responses, continue until the procedure returns you to the "Calibration Setup" window. You should be able to touch the OK button to save the configuration and return to the "Configuration Utilities" window.
7. Press **Cancel** to exit the utility.

### 3.2.2 Calibrating a MicroTouch Touchscreen

1. <CTRL-ESC> Brings up the Windows 2000 task bar
2. <P> Selects the **Programs** option
3. <DOWN-ARROW> until "**Microtouch Touchware**" is highlighted
4. <RIGHT-ARROW> Selects the **Microtouch Touchware** applications
5. <DOWN-ARROW> until "**Microtouch Touchware**" is highlighted
6. Press <ENTER> twice. This will take you directly to the calibration screen.
7. Keep your finger pressed on the calibration point until you get a "Touch Enable" response.

When all the points are complete you will be prompted not to touch the screen until the calibration data is saved.



# 4. Figures

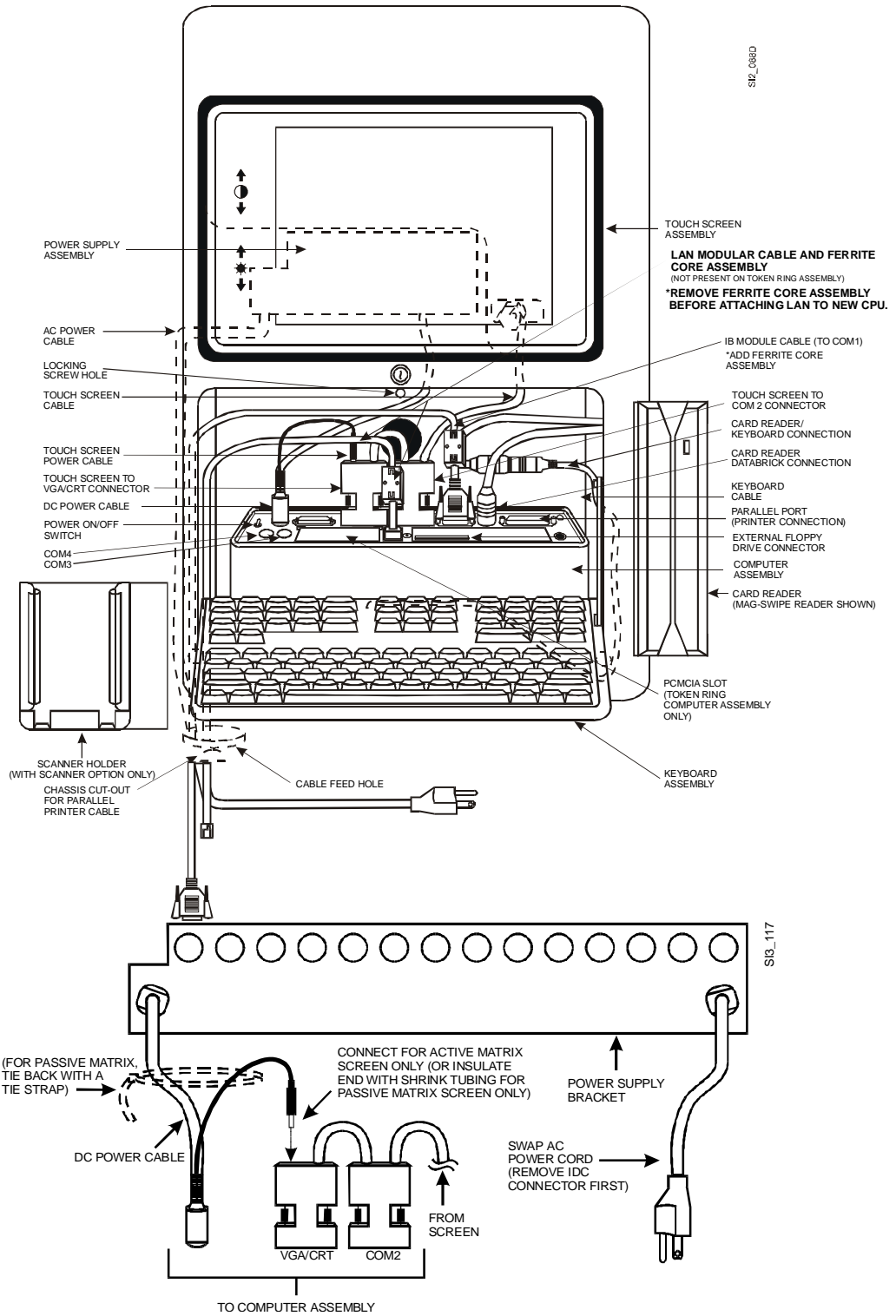
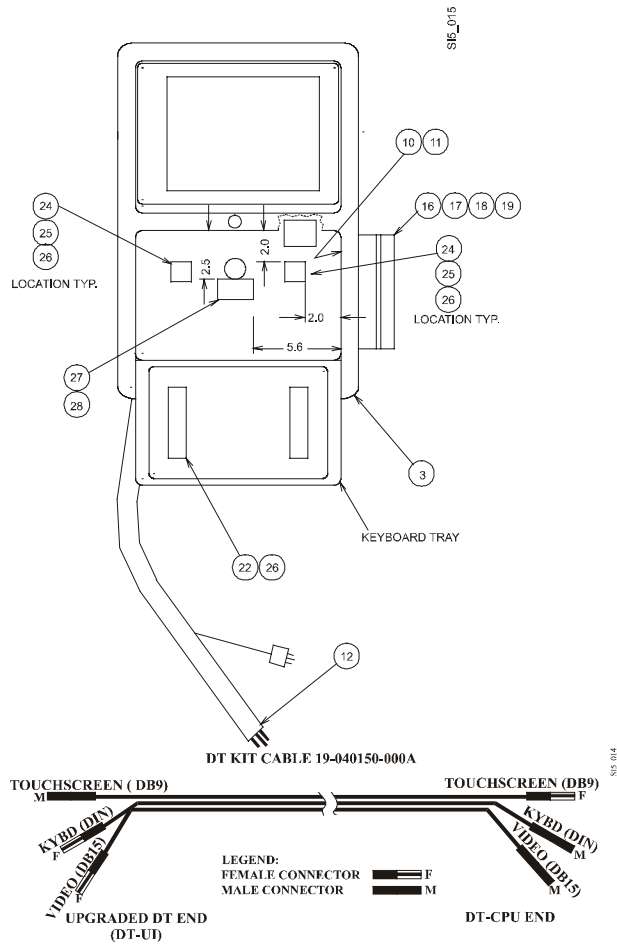


Figure 1 Earlier Version DT Internal Cable Layout and Assembly Identification



Item No.:	Description:
3	DT-UI
10	Ferrite Core Clamp
11	Ferrite Core
12	DT1.5 Cable Kit
16	Card Reader, Standard Track 2, 75 BPI
17	Card Reader, Northern Computer, 3 Track
18	Card Reader, Track 3, 75 or 210 BPI
19	Bar Code Reader
22	Hook and Pile Fastener Tape
24	Cable Tie, 1.25"
25	Cable Tie, Small
26	Adhesive Preparation
27	Blank ID Label
28	Computer Port ID Label

Note: Shaded items are for reference only. Unshaded items are supplied in the upgrade kit.

Figure 2 DT-UI Internal Cabling Arrangement With Mag-Swipe and Bar Code Reader

THE CABLES MARKED 'A' ARE BUNDLED TOGETHER TO A 12' LENGTH AND ENCLOSED WITHIN A SPIRAL WRAP. ONLY 10' CAN BE ROUTED FROM THE DT-CPU TO THE DT-UI.  
 THE CABLES MARKED 'B' ARE A 12' LENGTH AND CAN ONLY BE ROUTED 10' TO THE DT-CPU.  
 THE CABLE MARKED 'C' (PRINTER CABLE) IS 15' AND CAN BE ROUTED 13' FROM THE PRINTER TO THE DT-CPU.  
 CABLES MARKED 'D' MUST HAVE 2' FREE AT THE DT-CPU END. EXTENSION CABLES MAY BE REQUIRED.  
 THE 2' EXTRA FOR ALL NOTED CABLES IS REQUIRED AT THE DT-CPU END FOR COMPUTER INSERTION AND REMOVAL INTO AND OUT OF ITS MOUNT.

004-1001-18

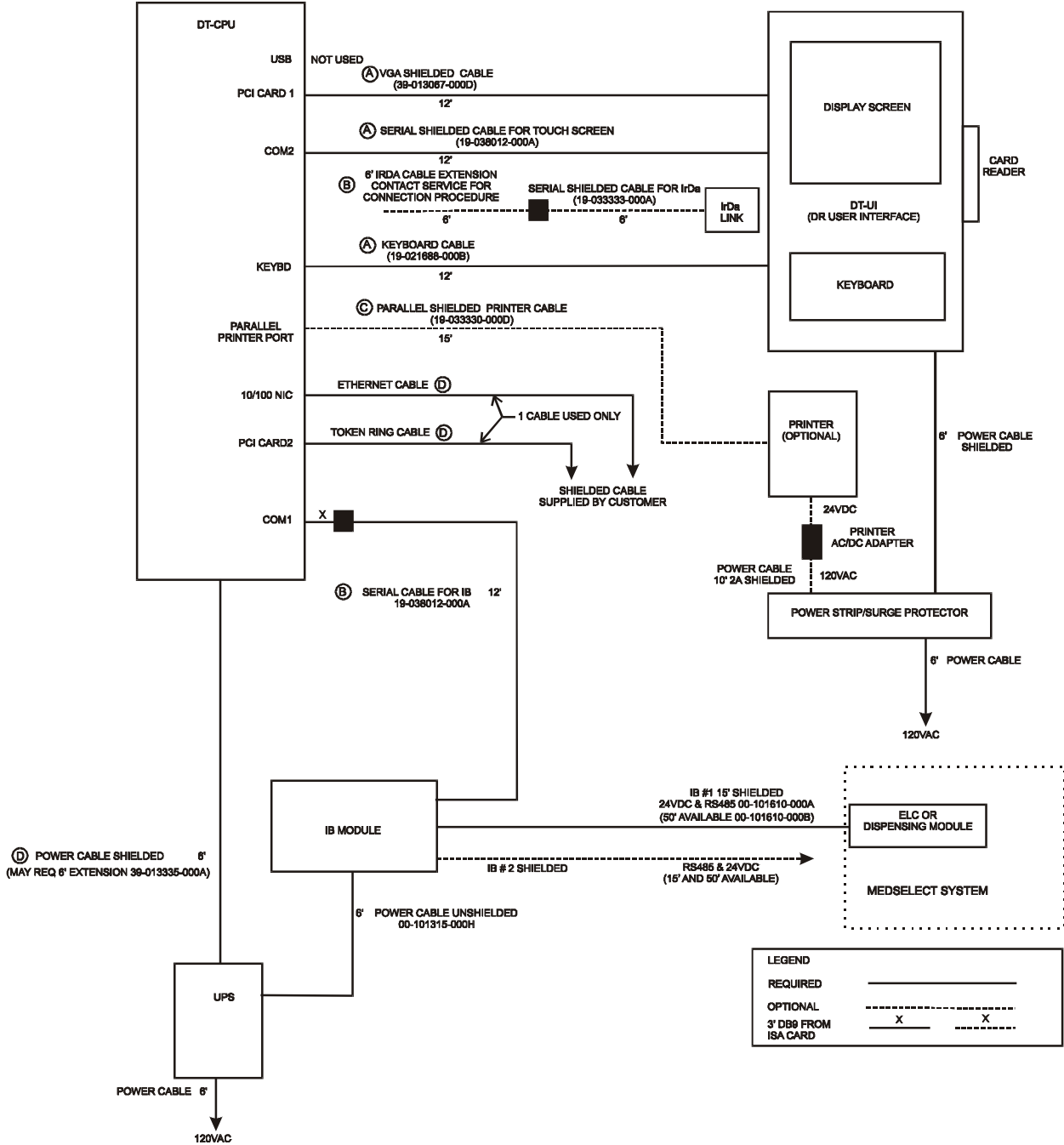


Figure 3 Current DT CPU Configuration and Cable Connections