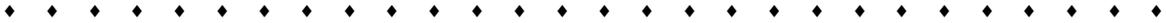




*6540 Stationary Terminal*  
**GETTING STARTED**  
**GUIDE**



**PN: 961-047-127**  
*Revision B*  
*June 1999*

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Revision B

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## Introduction

---

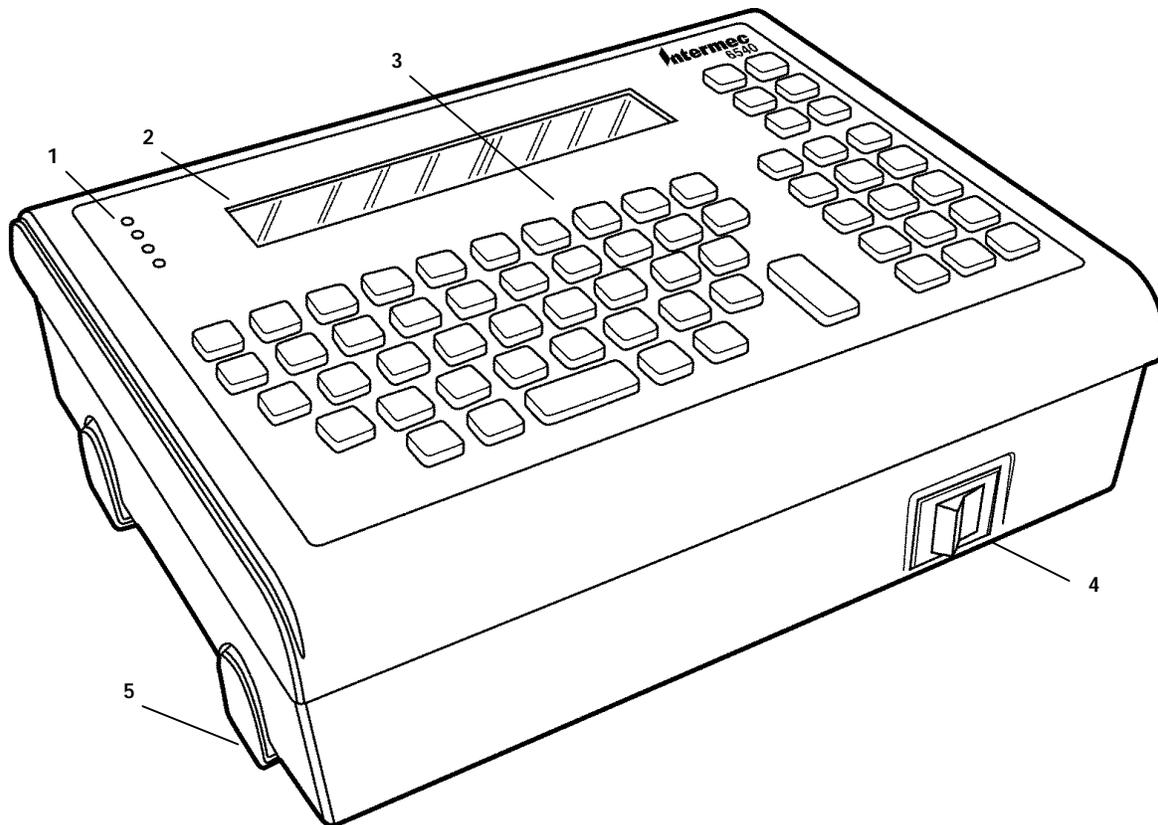
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## Introduction to the 6540 Terminal

The 6540 Terminal is a rugged PC-based data collection terminal. In most respects it is like a DOS PC. Application developers can easily write custom applications for this terminal. Its Ethernet interface makes it easy for network administrators to manage.



1. Status indicators
2. Display
3. Keypad
4. Power switch
5. Rubber nonskid feet

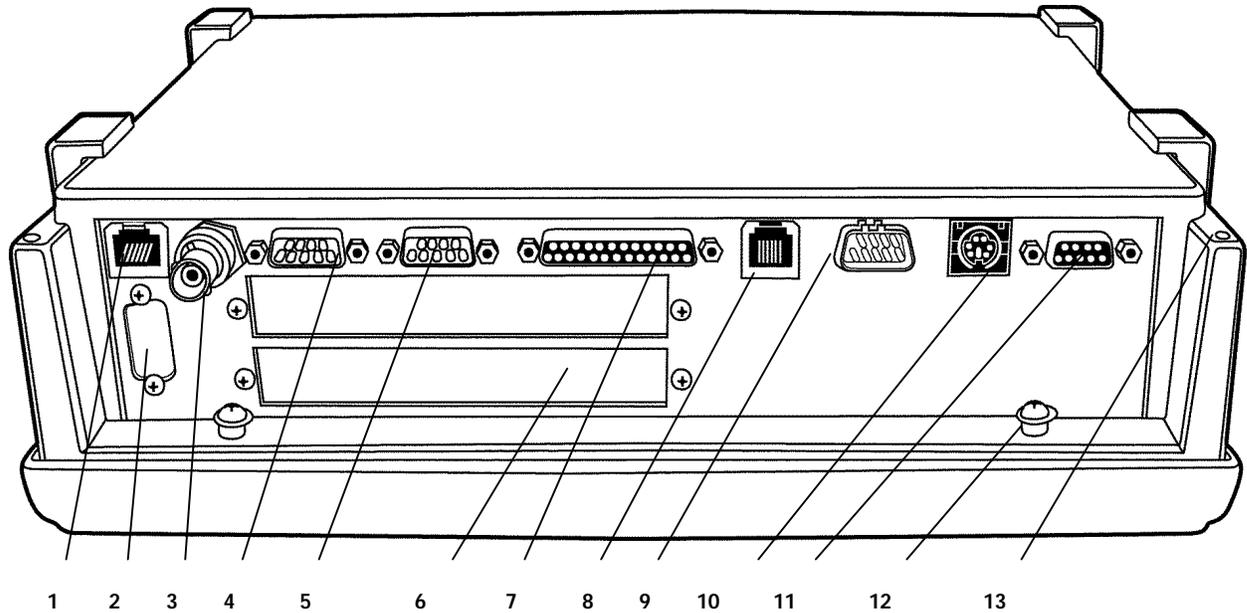
*Figure 1-1  
Desktop Configuration*

In other respects, however, it is different from a standard desktop PC. In particular, the terminal's display is smaller than a standard PC. You must adapt applications for the display.

In addition, the solid state disk and data storage devices of Models DFB and DSB are different from a desktop PC that typically uses a hard drive. The DFB Model has a flash drive instead of the standard disk drive. Flash is a different type of stable storage with faster access than a disk drive because it has no moving parts. The DSB Model has an SRAM (Static Random Access

Memory) drive. The SRAM drive is faster than the other models, but contents of its memory are lost if power fails. The DHB Model has a standard disk drive.

In addition, its enclosure is specialized for the requirements of industrial environments. It is designed for permanent mounting to a desktop or wall.



1. 10BASE-T jack
2. VGA port (optional)
3. 10BASE2 connector
4. COM 2 port
5. COM 1 port
6. Wireless ethernet slot (optional)
7. LPT 1 printer port
8. CCD wand scanner or magnetic stripe reader jack
9. CCD wand or laser scanner port
10. Wedge scanner or external keyboard (P/S2 type)
11. Power supply
12. Spacer post for cable cover
13. Mounting hole for cable cover

Figure 1-2  
Connector Panel

## Section 2

# Set Up

### ***Unpacking***

Several different models are available, and each can be ordered with a range of options and accessories. When unpacking, check the packing list against your order, and ensure that all of the listed options and accessories are present.

Accessories are all visible, and their presence is easy to verify. The connectors for optional add-on cards should be visible through the rear panel. The CPU type and speed, and the memory configuration are reported on the display when the unit goes through its self-test upon power up.

### ***Powering on for the First Time***

All units are thoroughly tested at the factory. Nonetheless we recommend you power up each unit upon receipt to verify that it is operating normally. Powering up the unit requires connecting the power supply to the proper port on the unit's rear panel and positioning the power switch in the "on" position (marked I). The unit runs a power-up self-test that reports the status of its main systems and terminates at a DOS prompt. Scanners connected to the scanner ports work normally. The unit is ready to connect to an Ethernet network.



## Section 3

# Mounting and Adjusting

The terminal rests on desktop or is permanently mounted to a desktop or wall using its adjustable mounting bracket accessory. Its protective cable cover accessory attaches to the top panel of the unit, to provide environmental protection.

### ***Desktop Configuration without Mounting Bracket***

In the desktop configuration without the adjustable mounting bracket, the supplied feet should be attached as shown in Figure 3-1. When an adjustable mounting bracket is ordered with the unit the rubber feet are not supplied.

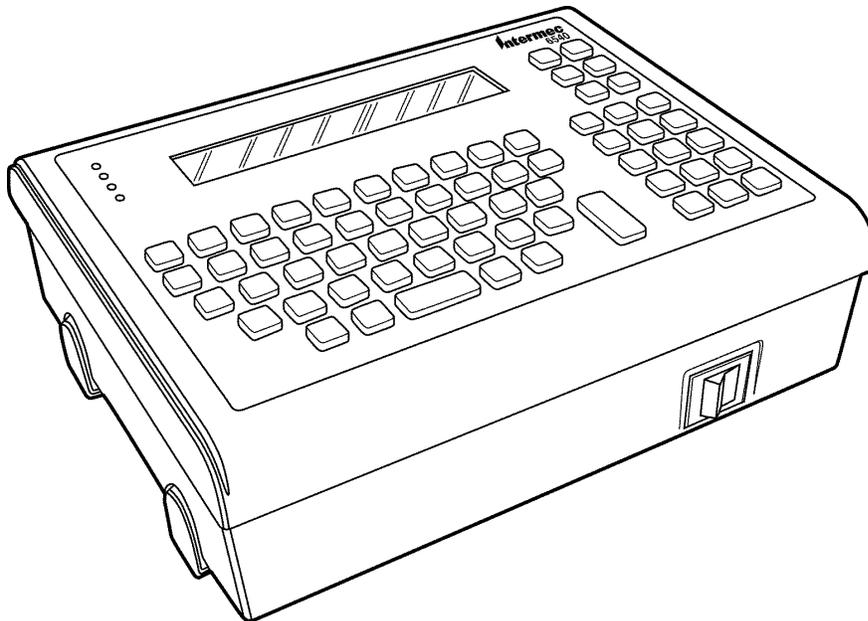
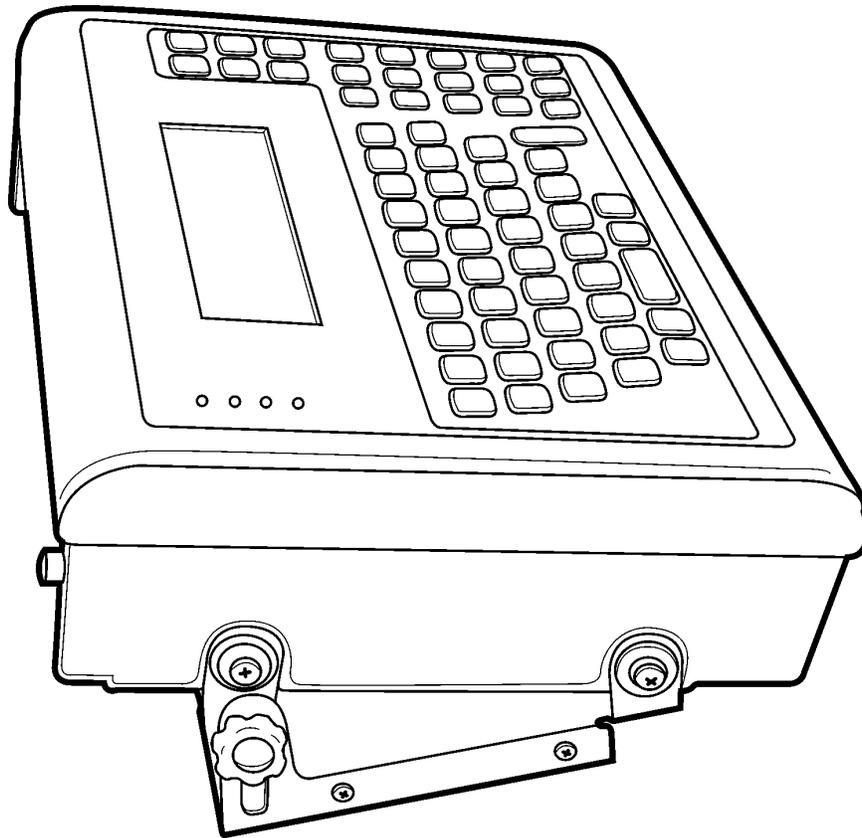


Figure 3-1  
*Desktop Configuration without Adjustable Mounting Bracket*

The following illustrations show how you can permanently attach the terminal to a desk or wall with the optional mounting bracket.



*Figure 3-2  
Desktop Configuration with Adjustable Mounting Bracket*

Use the adjustable mounting bracket (part number 2-486015-20) for either surface. Once the bracket is installed, you can tilt the terminal from 0 to 15 degrees, by loosening the thumbscrews, tilting the unit, then retightening the screws.

You can permanently mount the terminal to a wall using the adjustable mounting bracket. Note that the recommended orientation of the bracket depends on the position of the unit with respect to the operator.

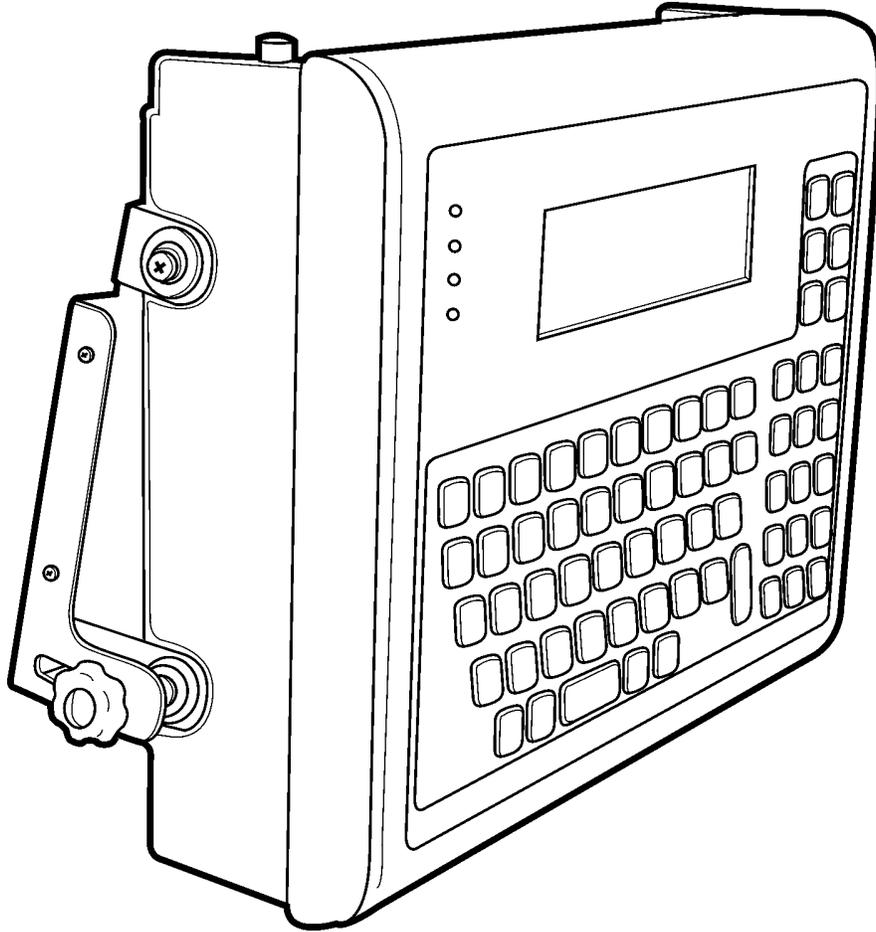


Figure 3-3  
Wall Mount Orientation Below Shoulder Level

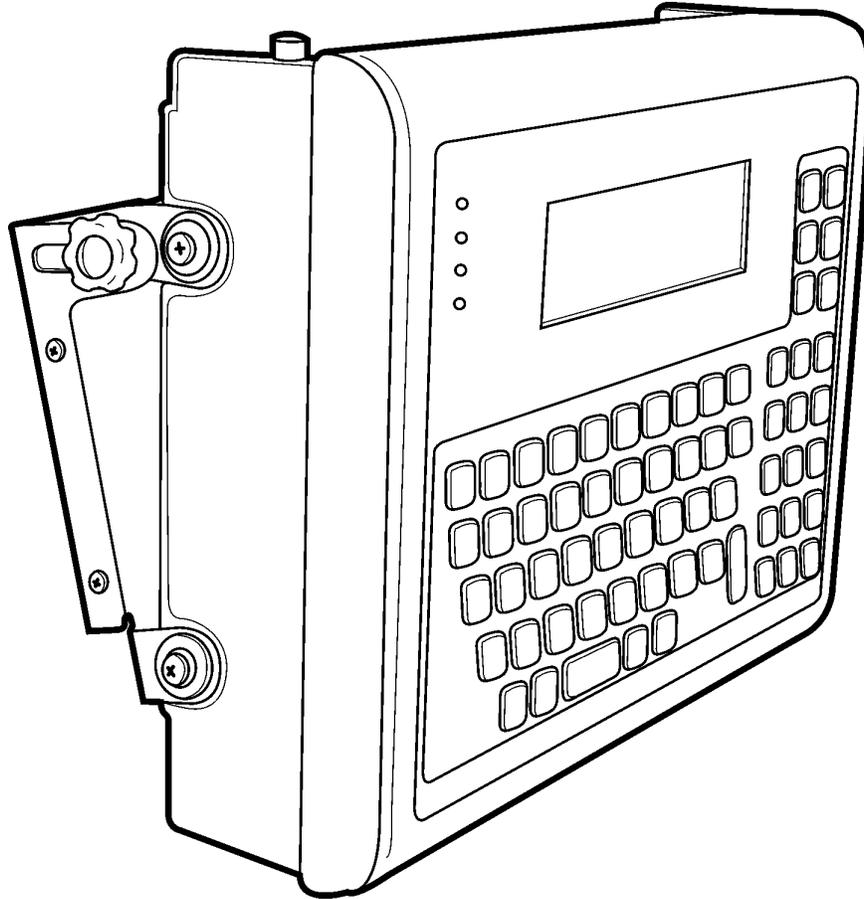


Figure 3-4  
Wall Mount Orientation Above Shoulder Level

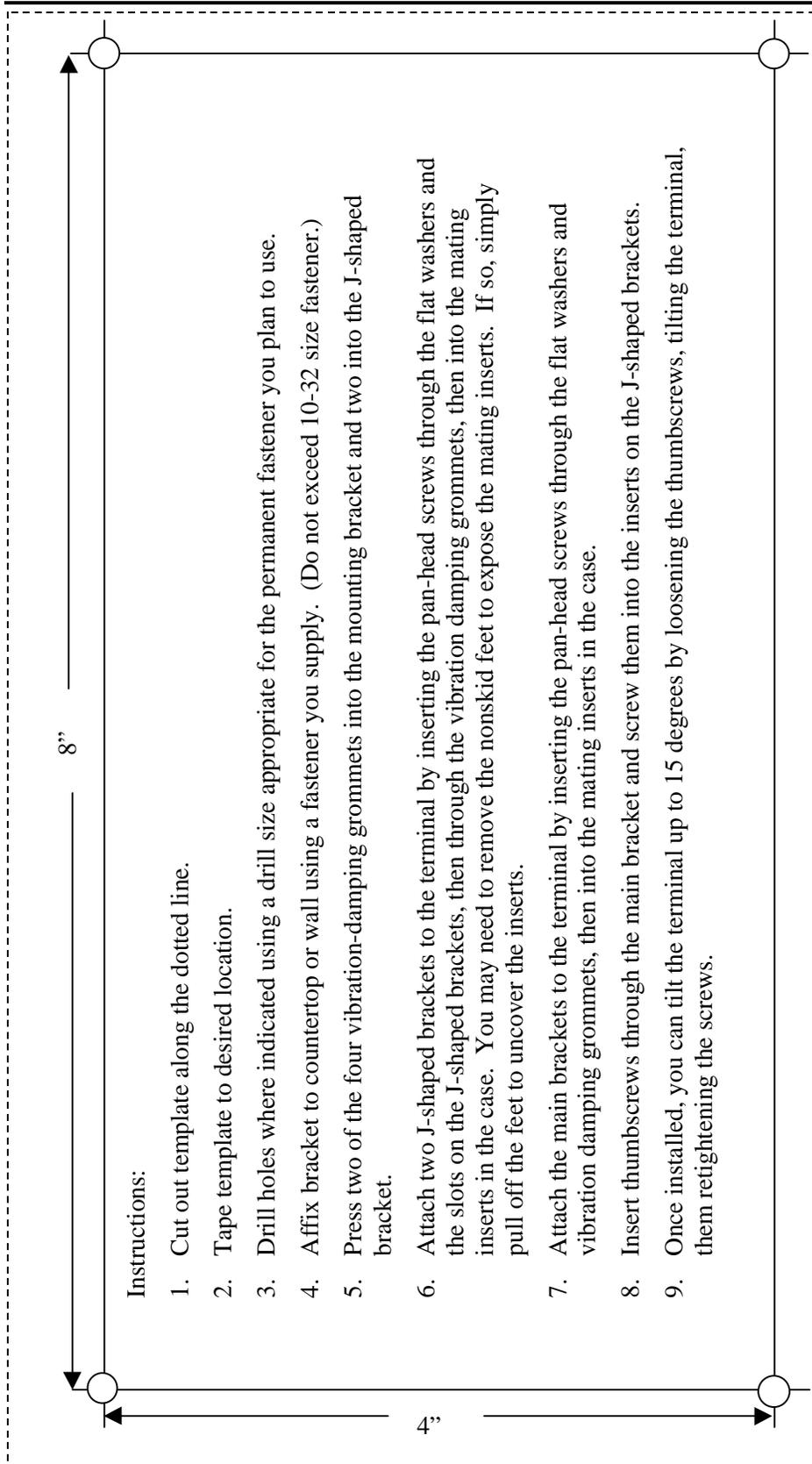


Figure 3-5  
Template for Drilling Bracket Holes

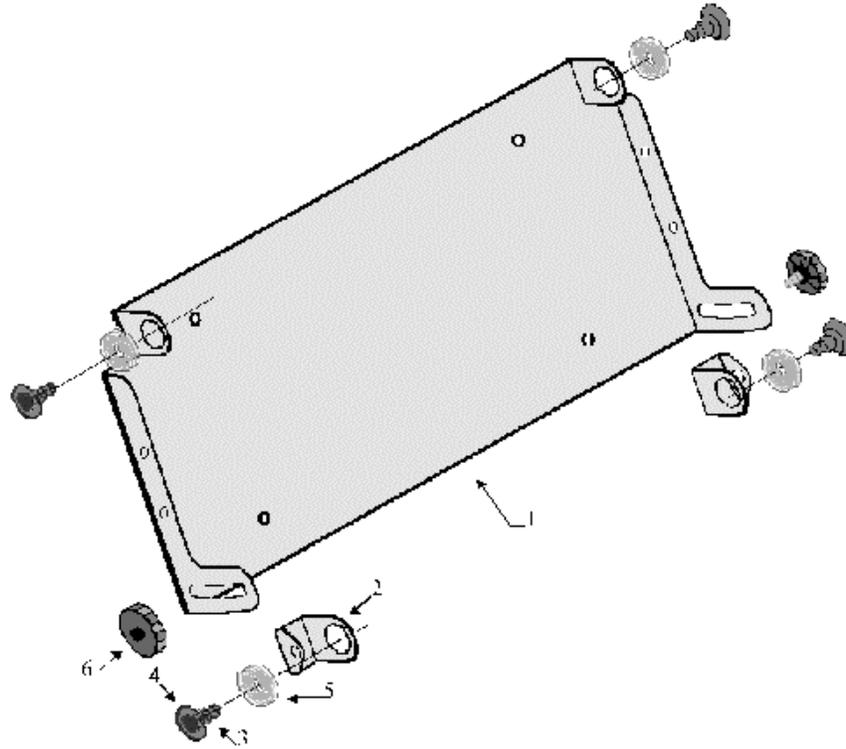


Figure 3-6  
Mounting Bracket Hardware

### Supplied Hardware

| Item  | Quantity |
|---|----------|
| 1. Mounting Bracket 12" x 6" x 2.5" (30 x 15 x 6 cm)    | 1        |
| 2. J-Shaped Bracket 0.75" x 0.50" x 2.0" (2 x 1 x 5 cm) | 2        |
| 3. Pan Head Screw #10 - 32 x 0.375" Phillips            | 4        |
| 4. Flat Washer #10                                      | 4        |
| 5. Vibration Damping Grommet                            | 4        |
| 6. Thumb Screw #10 - 32 x .0375"                        | 2        |

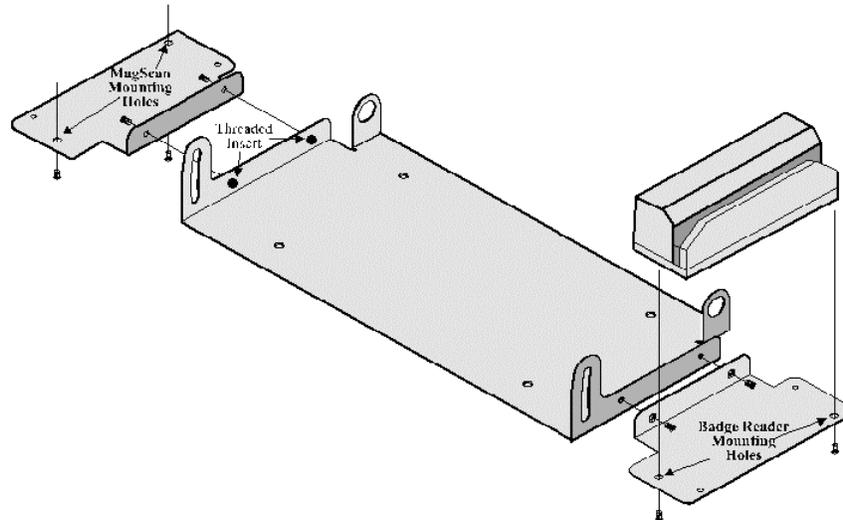
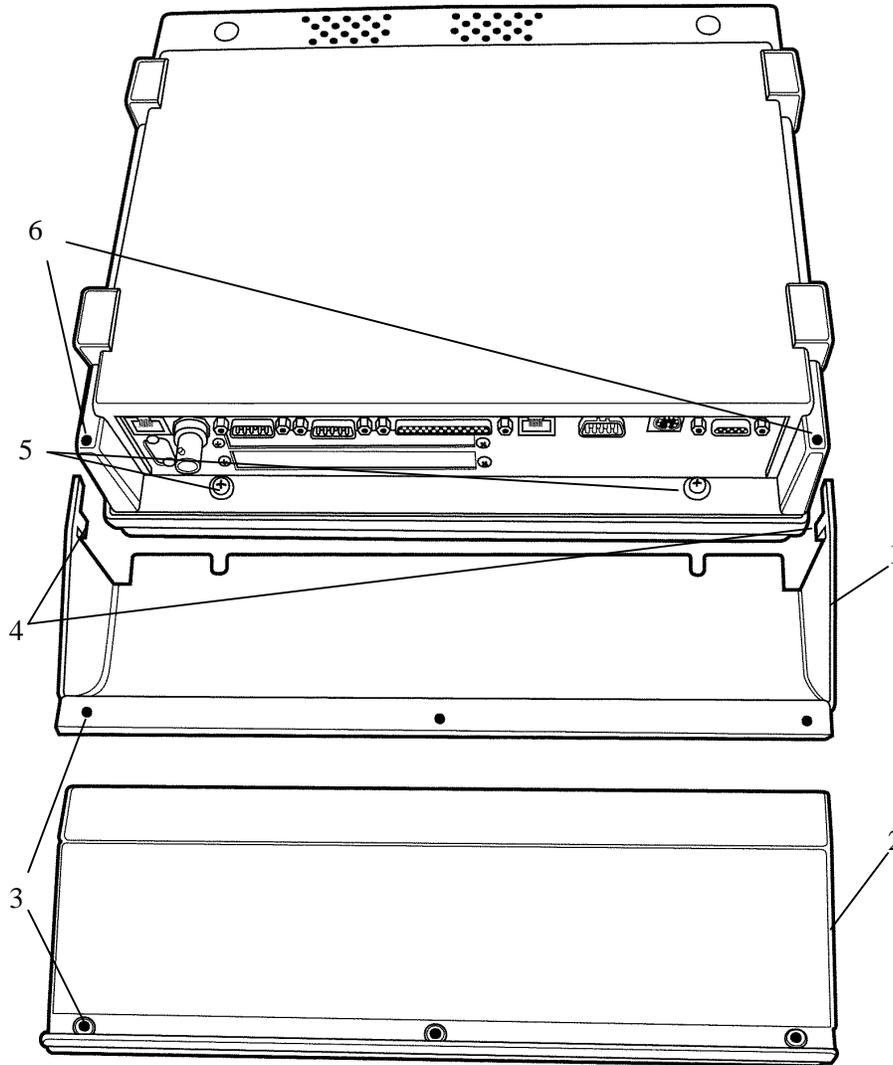


Figure 3-7  
Badge Reader Attachment to Mounting Bracket

The badge reader bracket can be installed on either side of the mounting bracket as shown. The badge reader includes two supplied screws (#4.40 x 0.250" L). Insert them as shown through the bracket and into the threaded inserts in the adjustable mounting bracket. Attach the badge reader to the badge reader bracket using screws supplied with that product.

### ***Protective Cable Cover Assembly***

1. Place unit face down on its keyboard.
2. Position tabs on the protective cover into the matching holes on the case of the unit.
3. Rotate the cover so that the notches align with the spacers on the two screws in front of the connector panel.
4. Press the cable cover into place against the screw spacers until firmly seated.
5. Attach all desired cables to appropriate ports.
6. Lay cables across the edge of the cover with the screw holes.
7. Lay platform on cable cover.
8. Turn the terminal over, so its keyboard is facing up. Secure the cover with the supplied screws. The foam liner on the inside edge of the cover protects the cables.



1. Cable cover
2. Platform
3. Screw holes for securing front to back
4. Notch to put in hole on terminal
5. Mounting screws with spacers
6. Hole for cover tab

Figure 3-8  
Protective Cable Cover Assembly

### Supplied Hardware

| Item  | Quantity |
|---|----------|
| 1. Protective Cover                           | 1        |
| 2. Platform                                   | 1        |
| 3. #6-32 Phillips Head Screw (see Figure 3-9) | 3        |

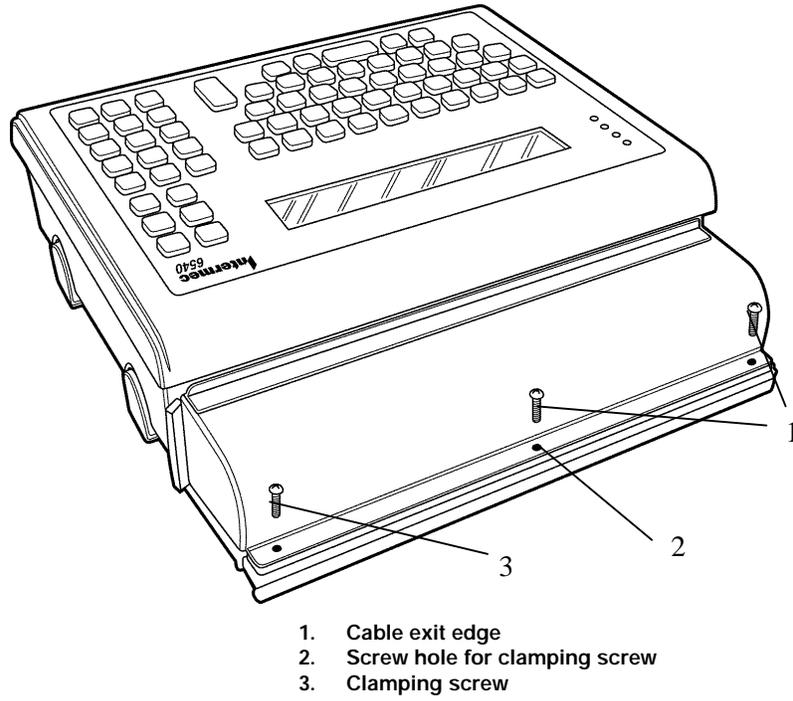


Figure 3-9  
Final Assembly for Protective Cable Cover



# Connecting to the Network

The terminal includes drivers that let you connect it to all popular networks. In Models DFB and DSB, they are located on the FLASH (B:) drive of the terminal. In Model DHB they are located on the hard disk drive (C:). The network drivers are loaded on the terminal based on your order.

All of the network configurations require adding, deleting, or modifying files on the B: or C: drives. In the Model DFB and DSB, since the B: drive is a flash drive, and it is shipped in its write-protected mode, these operations require you remove the write protection. For information on using the flash drive, see Section 5. In the Model DHB these files are not protected, but can be by using the standard DOS ATTRIB.EXE command.

The following sections show you what files are loaded, and what files need to be modified for your particular configuration.

**NOTE:** On initial boot the unit reports errors. You must configure it for your network to remove these errors.

## Wired Network Connection for the Terminal

This section applies to the terminal with the standard onboard Crystal Ethernet connection.. Within this section are two subsections – one for ODI networks and the other for TCPIP networks. If your terminal connects to a Novell network, follow the ODI instructions. If connecting to a TCPIP network, follow the TCPIP instructions.

### ODI (Novell) Network Locate the network driver files in the following directories:

| Model | Network File Location |
|-------|-----------------------|
| DFB   | B:\NET                |
| DSB   | B:\NET                |
| DHB   | C:\NET                |

The network files follow with a brief description of their function.

LSL.COM – Link Support Layer

EODIISA.COM – ODI Driver for terminal Onboard Crystal Ethernet chip set

IPXODI.COM – IPX driver for ODI protocol

NETX.EXE – Novell Netware communicator

STARTNET.BAT – The batch file that loads the network drivers

NET.CFG – Novell Network configuration file

The terminal is configured so the following network drivers execute upon boot: **USER.BAT** and **STARTNET.BAT**. The contents of the **USER.BAT** and **STARTNET.BAT** files follow.

**USER.BAT (DFB AND DSB)**

```
SET PATH=B:\net;%PATH%
```

```
b:
```

```
cd net
```

```
startnet.bat
```

**USER.BAT (DHB)**

```
SET PATH=C:\net;%path%
```

```
c:
```

```
cd net
```

```
startnet.bat
```

**STARTNET.BAT (DSB AND DFB)**

```
b:\net\lsl
```

```
b:\net\odiisa
```

```
b:\net\ipxodi
```

```
b:\net\netx
```

```
set name=guest
```

```
set nwlanguage=english
```

**STARTNET.BAT (DHB)**

```
c:\net\lsl
```

```
c:\net\odiisa
```

```
c:\net\ipxodi
```

```
c:\net\netx
```

```
set name=guest
```

```
set nwlanguage=English
```

You must modify certain files for use with your network. One is the **NET.CFG** file. An example of this file follows.

**NET.CFG**

LINK SUPPORT [Do not modify]

    BUFFERS 8 1500 [Modify if needed]

    MEMPOOL 4096 [Modify if needed]

    MAX BOARDS 4 [Modify if needed]

    MAX STACKS 4 [Modify if needed]

Link Driver EODIISA [Do not modify]

    port 300 [Do not modify]

    frame ethernet\_II [Modify to Match your system]

    frame ethernet\_802.2 [Modify to Match your system]

    protocol ipx e0 ethernet\_802.2 [Modify to Match your system]

**USERCONF.SYS (DSB)**

SHELL=b:\COMMAND.COM /P

**USERCONF.SYS (DFB AND DHB)**

(Not Required)

**TCPIP Network**

Locate the network drivers in the following directories:

| Model | Network File Location                      |
|-------|--|
| DFB   | Not Applicable                             |
| DSB   | B:\PCTCP and C:\ for the rloginvt.exe file |
| DHB   | C:\PCTCP                                   |

The network files are shown along with a brief description of their function.

EPKTISA.COM – Onboard Crystal Ethernet packet driver

ETHDRV.EXE – PCTCP’s TCPIP kernel

PCTCP.INI – Network configuration file for kernel

PING.EXE – Signals specific devices to confirm their connection

RLOGINVT.EXE – Remote login capabilities

TN.EXE – Telnet terminal emulation

TFTP.EXE – Telnet file transfers between different computers on the network

The terminal is configured so that the following network drivers execute upon boot: **USER.BAT** and **STARTNET.BAT**. The contents of the **USER.BAT** and **STARTNET.BAT** are shown.

**USER.BAT (DFB AND DSB)**

```
SET PATH=B:\PCTCP;%PATH%
b:\pctcp\epktisa.com 0x60 0x300
SET PCTCP=b:\pctcp\pctcp.ini
b:\pctcp\ethdrv
```

**USER.BAT (DHB)**

```
SET PATH=C:\pctcp;%PATH%
c:\pctcp\epktisa.com 0x60 0x300
SET PCTCP=c:\pctcp\pctcp.ini
C:\pctcp\ethdrv
```

**USERCONF.SYS (DSB)**

```
shell=b:\command.com /p
```

**USERCONF.SYS (DFB AND DHB)**

(Not required)

You must modify certain files to configure them for use with your network. One is **PCTCP.INI** file. An example of this file follows.

**PCTCP.INI**

```
[pctcp ifcust 0]
ip-address = [Place Units IP address here]
subnet-mask = [Place Units Subnet Mask here]
router = [Place router's IP address here or remove line]
router = [Place router's IP address here or remove line]
router = [Place router's IP address here or remove line]
interface-type = PKTDRV [Do not change]
frame-type = Token-Ring [Change if you are on a different frame-type]

[pctcp addresses]
domain-name-server = [Place DNS IP Address here, else remove entire section]
```

[pctcp general]

user = [Place user name of person using this unit, else remove line]

host-name = [Place name of machine on this line]

domain = [List the name of the domain the unit is in, else remove the line]

name-resolution = nis

[pctcp kernel]

interface = ifcust 0 [Do not change]

kernel-does-dns = yes

mtu-discovery = yes

multicast = no

pktdrv-loopback = yes

router-discovery = no

large-packets = 5

small-packets = 5

### ***Wireless Proxim Connection for the Terminal***

This section applies to the terminal with the wireless 2.4 GHz Ethernet connection. Within this section are two subsections – one for ODI networks and the other for TCPIP networks. If your terminal connects to a Novell network, follow the ODI subsection. If connecting to a TCPIP network, follow the TCPIP subsection.

#### **ODI (Novell) Network**

The network driver files that have been installed on the terminal can be found at the following directories:

| <b>Model</b> | <b>Network File Location</b> |
|--------------|------------------------------|
| DFB          | B:\NET                       |
| DSB          | B:\NET                       |
| DHB          | C:\NET                       |

The network files are shown below along with a brief description of their function.

LSL.COM – Link Support Layer

RL2ISA.COM – ODI Driver for wireless 2.4GHz Proxim Ethernet card

IPXODI.COM – IPX driver for ODI protocol

NETX.EXE – Novell Netware communicator

STARTNET.BAT – The batch file that loads the network drivers

NET.CFG – Novell Network configuration file

The terminal loads and executes the following network driver files upon boot up: **USER.BAT** and **STARTNET.BAT**. The contents of the **USER.BAT** and **STARTNET.BAT** follow.

**USER.BAT (DFB AND DSB)**

```
SET PATH=B:\net;%PATH%
```

```
b:
```

```
cd net
```

```
startnet.bat
```

**USER.BAT (DHB)**

```
SET PATH=C:\net;%path%
```

```
c:
```

```
cd net
```

```
startnet.bat
```

**STARTNET.BAT (DSB AND DFB)**

```
b:\net\lsl
```

```
b:\net\rl2isa
```

```
b:\net\ipxodi
```

```
b:\net\netx
```

```
set name=guest
```

```
set nwlanguage=english
```

**STARTNET.BAT (DHB)**

```
c:\net\lsl
```

```
c:\net\rl2isa
```

```
c:\net\ipxodi
```

```
c:\net\netx
```

```
set name=guest
```

```
set nwlanguage=English
```

**USERCONF.SYS (DSB)**

shell=b:\command.com /p

**USERCONF.SYS (DHB AND DFB)**

(not required)

You must modify certain files to configure them for use with your network. To do this, edit the **NET.CFG** file. An example of this file follows.

**NET.CFG**

LINK SUPPORT [Do not modify]

BUFFERS 8 1500 [Modify if needed]

MEMPOOL 4096 [Modify if needed]

MAX BOARDS 4 [Modify if needed]

MAX STACKS 4 [Modify if needed]

LINK DRIVER RL2ISA [Do not modify]

INT 15 [Do not modify]

PORT 270 [Do not modify]

DOMAIN 0 [Modify for domain currently being used]

STATION\_TYPE 0 [Modify for your network]

FRAME ethernet\_802.2 [Modify for your network]

ROAM\_CONFIG 1 [Modify for your network]

MAC\_OPTIMIZE 1 [Modify for your network]

PEER\_TO\_PEER Y [Modify for your network]

protocol ipx e0 ethernet\_802.2 [Modify for your network]

The wireless 2.4GHz Proxim card requires specific jumper settings. The following shows how the switches must be set.

Jumper Settings:

- 1 – closed
- 2 – open
- 3 – open
- 4 – open
- 5 – closed
- 6 – closed
- 7 – open

Where open is away from the number, and closed is toward the number.

## TCPIP Network

The network driver files installed on the terminal can be found at the following directories:

| Model | Network File Location                      |
|-------|--|
| DFB   | Not Applicable                             |
| DSB   | B:\TCPIP and C:\ for the rloginvt.exe file |
| DHB   | C:\TCPIP                                   |

The network files follow along with a brief description of their function.

RL2ISA.DOS – Onboard Crystal Ethernet NDIS driver

ETHDRV.EXE – PCTCP's TCPIP kernel

PCTCP.INI – Network configuration file for the kernel

PING.EXE – Signals specific devices to confirm their connection

RLOGINVT.EXE – Remote login capabilities

TN.EXE – Telnet terminal emulation

TFTP.EXE – Transfers files from different computers on the network

PROTMAN.DOS – NDIS drivers

DIS\_PKT.GUP – NDIS driver to a Packet driver converter

PROTMAN.EXE – NDIS drivers to Packet driver converter

NETBIND.EXE – Binds the driver to the network

PROTOCOL.INI – Configuration file to get information about the network card.

The terminal is configured so the following network driver files load and execute upon boot:

**USER.BAT** and **USERCONF.SYS**. The contents of the **USER.BAT** and **USERCONF.SYS** follow.

### **USERCONF.SYS (DSB)**

shell=b:\command.com /p

device=b:\pctcp\protman.dos /I:b:\pctcp

device=b:\pctcp\RL2ISA.dos

device=b:\pctcp\dis\_pkt.gup

### **USERCONF.SYS (DHB)**

device=c:\pctcp\protman.dos /I:c:\pctcp

device=c:\pctcp\RL2ISA.dos

```
device=c:\pctcp\dis_pkt.gup
```

**USER.BAT (DSB)**

```
set path=b:\pctcp;c:\;b:\;a\  
b:\pctcp\protman.exe  
b:\pctcp\netbind.com  
SET PCTCP=b:\pctcp\pctcp.ini  
b:\pctcp\ethdrv
```

**USER.BAT (DHB)**

```
set path=c:\pctcp;c:\;b:\;a\  
c:\pctcp\protman.exe  
c:\pctcp\netbind.com  
SET PCTCP=c:\pctcp\pctcp.ini  
c:\pctcp\ethdrv
```

**Network Configuration**

You must modify certain files to configure them for use with your network. You must edit the **PROTOCOL.INI** and **PCTCP.INI** files. An example of these files follows.

**PROTOCOL.INI**

```
[protman]  
DriverName=PROTMAN$ [Do not modify]  
  
[RL2ISA]  
DriverName=RL2ISA$ [Do not modify]  
PORT=0x270 [Do not modify]  
INT=15 [Do not modify]  
CHANNEL=1 [Modify for your network]  
SUBCHANNEL=1 [Modify for your network]  
DOMAIN=0 [Modify for your network]  
STATION_TYPE=0 [Modify for your network]  
MASTER_NAME=MASTER [Modify for your network]  
ROAM_CONFIG=1 [Modify for your network]  
MAC_OPTIMIZE=1 [Modify for your network]
```

PEER\_TO\_PEER=Y [Modify for your network]

[PKTDRV]

DriverName=PKTDRV\$ [Do not modify]

intvec=0x60 [Do not modify]

chainvec=0x62 [Do not modify]

BINDINGS=RL2ISA [Do not modify]

senddelay=0 [Modify if needed]

### **PCTCP.INI**

[pctcp ifcust 0]

ip-address = [Place unit's IP address here]

subnet-mask = [Place unit's subnet mask here]

router = [Place router's IP address here or remove line]

router = [Place router's IP address here or remove line]

router = [Place router's IP address here or remove line]

interface-type = PKTDRV [Do not change]

frame-type = DIX-Ethernet

[pctcp addresses]

domain-name-server = [Place DNS IP address here, else remove entire section]

[pctcp general]

etc-dir = c:\pctcp\etc [Place path to "etc" directory. Stores routing port information and other specifics]

user = [Place user name, else remove line]

host-name = [Place name of machine on this line]

domain = [List the name of the unit's domain, else remove the line]

name-resolution = dns

[pctcp kernel]

interface = ifcust 0 [Do not modify]

You must set some jumpers for the wireless 2.4GHz Proxim card. The following shows settings.

**Jumper Settings:**

- 1 – closed
- 2 – open
- 3 – open
- 4 – open
- 5 – closed
- 6 – closed
- 7 – open

Where open is away from the number, and closed is toward the number.

### ***Token Ring Network Connection***

This section applies to the terminal with the Token Ring network connection. Within this section are two subsections – one for ODI networks and the other for TCPIP networks. If connecting to a Novell network, follow the ODI subsection. If connecting to a TCPIP network, follow the TCPIP subsection.

#### **ODI (Novell) Network**

The network driver files that have been installed on the terminal can be found at the following directories:

| <b>Model</b> | <b>Network File Location</b> |
|--------------|------------------------------|
| DFB          | B:\NET                       |
| DSB          | B:\NET                       |
| DHB          | C:\NET                       |

The network files follow along with a brief description of their function.

LSL.COM – Link Support Layer

TOKEN.COM – ODI Driver for the TOKEN RING Network Card

IPXODI.COM – IPX driver for ODI protocol

NETX.EXE – Novell Netware communicator

STARTNET.BAT – Batch file that loads the network drivers

NET.CFG – Novell Network configuration file

LANAIDC.EXE – Configures Token Ring Card

LANAIDC.MSG – File used by the LANAIDC.EXE file

The terminal has been configured so the following network drivers load and execute upon boot.

**USER.BAT** and **STARTNET.BAT** do this. The contents of the **USER.BAT** and **STARTNET.BAT** follow.

**USER.BAT (DFB AND DSB)**

```
SET PATH=B:\net;%PATH%
```

```
b:
```

```
cd net
```

```
startnet.bat
```

**USER.BAT (DHB)**

```
SET PATH=C:\net;%path%
```

```
c:
```

```
cd net
```

```
startnet.bat
```

**STARTNET.BAT (DSB AND DFB)**

```
b:\net\lsl
```

```
b:\net\token
```

```
b:\net\ipxodi
```

```
b:\net\netx
```

```
f:
```

```
login
```

**STARTNET.BAT (DHB)**

```
c:\net\lsl
```

```
c:\net\token
```

```
c:\net\ipxodi
```

```
c:\net\netx
```

```
f:
```

```
login.
```

You must modify certain files to configure them for use with your network. For this configuration of the terminal, you must edit the **net.cfg** file. An example of this file follows.

**NET.CFG**

```
LINK SUPPORT [Do not modify]
```

```
    BUFFERS 8 1500 [Do not modify]
```

```
    MEMPOOL 4096 [Do not modify]
```

```
    MAX BOARDS 4 [Do not modify]
```

```
    MAX STACKS 4 [Do not modify]
```

LINK DRIVER TOKEN [Do not modify]

Frame Token-Ring [Do not modify]

MAX FRAME SIZE 4296 [Modify if needed]

The wireless 900MHz Aeronet card requires some jumper settings and file manipulation. The following shows what the switches must be set at and what files need to be created

### Configuration of the Token Card

You must modify the Token card. Use these files **LANAIDC.EXE** and **LANAIDC.MSG**.

Plug the card into a PC and type the following:

```
lanaidc /view
```

This gives you a listing of the important information about the card. You must modify it so it looks like the following:

```
IBM Turbo 16/4 Token-Ring ISA Adapter
PnP Support:           None Detected
Adapter number:       1
Adapter MAC Address:  00 06 29 10 0C BD
MicroCode Level:     000400 P3F3A4
Serial Number:       IBM1080-00C40000
Adapter Mode:        ISA16
Configuration:       LEGACY
Adapter State:       Active
I/O Address:         A20-A23
Interrupt:           9
RAM Address:         D0000-D3FFF
ROM Address:         D4000-D5FFF
Remote IPL:          Enabled
Token-Ring data rate: 16
Auto Sense data rate: Enabled
Adapter bus width:   16
```

Use the following command lines to make the modifications:

```
lanaidc /fast=isa16
```

```
lanaidc /io=a20 /config=legacy /int=9 /rom=d4000 /ram=d0000
```

## ***TCPIP Network***

The network driver files that have been installed on the terminal can be found at the following directories:

| <b>Model</b> | <b>Network File Location</b>               |
|--------------|--|
| DFB          | Not Applicable                             |
| DSB          | B:\TCPIP and C:\ for the rloginvt.exe file |
| DHB          | C:\TCPIP                                   |

The network files are shown below along with a brief description of their function.

IBMTOK.DOS – Token Ring NDIS driver

TOKDRV.EXE – PCTCP's TCPIP kernel for Token Rings

PCTCP.INI – The network configuration file for the kernel

PING.EXE – Signals specific devices to confirm their connection

RLOGINVT.EXE – Remote login

TELNET.EXE – Terminal emulation

TFTP.EXE – Transfer files from different computers on the network

LANAIDC.EXE – Configures Token Ring card

LANAIDC.MSG – Used by LANAIDC.EXE

PROTMAN.DOS – Internal file

DIS\_PKT.GUP – Converts NDIS driver to a packet driver

PROTMAN.EXE – Internal file

NETBIND.EXE – Binds the driver to the network

PROTOCOL.INI – Configures the Network.

The terminal has been configured so that the following network drivers load and execute upon boot. These files are **USER.BAT** and **STARTNET.BAT**. The contents of the **USER.BAT** and **STARTNET.BAT** follow.

### **USERCONF.SYS (DSB)**

```
SHELL=B:\COMMAND.COM /P
```

```
dos=high,umb
```

```
DEVICE=b:\PCTCP\PROTMAN.DOS /I:b:\PCTCP
```

```
DEVICE=b:\PCTCP\IBMTOK.DOS
```

```
DEVICE=b:\PCTCP\DIS_PKT.GUP
```

**USER.BAT (DSB)**

```
SET PATH=b:\PCTCP;%PATH%
SET PCTCP=b:\PCTCP\PCTCP.INI
b:\pctcp\protman.exe
b:\PCTCP\NETBIND.COM
b:\PCTCP\TOKDRV.EXE -p 3
```

**CONFIG.SYS (DHB)**

```
SHELL=c:\COMMAND.COM /P
DEVICE=c:\PCTCP\PROTMAN.DOS /I:c:\PCTCP
DEVICE=c:\PCTCP\IBMTOK.DOS
DEVICE=c:\PCTCP\DIS_PKT.GUP
```

**AUTOEXEC.BAT (DHB)**

```
SET PATH=c:\;c:\PCTCP;c:\DOS;c:\config;
SET PCTCP=c:\PCTCP\PCTCP.INI
c:\pctcp\protman.exe
c:\PCTCP\NETBIND.COM
c:\PCTCP\TOKDRV.EXE -p 2
```

You must modify certain files to configure them for use with your network. For this configuration of the terminal, you must edit the **PROTOCOL.INI** and **PCTCP.INI** files. An example of these follows.

**PROTOCOL.INI**

```
[protman]
DriverName=PROTMAN$

[TurboISA]
DriverName=IBMTOK$
RelativeUAA=1

[PKTDRV]
DriverName=PKTDRV$
intvec=0x60
```

chainvec=0x62

BINDINGS=TurboISA

class=17

### **PCTCP.INI**

[pctcp ifcust 0] [Do not modify]

ip-address = [Enter the IP address of the unit]

subnet-mask = [Enter the subnet mask of the unit]

router = interface-type = PKTDRV [Do not modify]

frame-type = Token-Ring [Do not modify]

[pctcp general]

host-name = [Enter a host name or remove]

domain = [Enter a domain or remove]

name-resolution = nis [Change if necessary for your network]

[pctcp kernel] [Do not modify]

interface = ifcust 0 [Do not modify]

kernel-does-dns = yes [Modify as necessary]

mtu-discovery = yes [Modify as necessary]

multicast = no [Modify as necessary]

pktdrv-loopback = yes [Modify as necessary]

router-discovery = no [Modify as necessary]

large-packets = 5 [Modify as necessary]

small-packets = 5 [Modify as necessary]

## Storing Programs and Data

### Copying Files to the Terminal

Your method for copying files to the terminal depends on its BIOS revision level. BIOS older than revision 3.0 requires one method. Newer BIOS requires another. Reboot the terminal to find its BIOS version. Watch the upper left corner of the display to see the revision number during the reboot. Follow the procedure for your version of BIOS.

#### BIOS Version 3.0 or Newer

These instructions also work when connected to a PC that is not a network terminal.

1. Use a “null modem” cable to connect the COM1 serial port on the terminal to the COM1 port on the PC with the files to be transferred. Intermec supplies a “null modem” cable, part number 2-653860-00.

2. On the PC type:  
REMDISK

REMDISK reports to which PC drive COM1 has been mapped.

3. On the 6540 Terminal type:

*REMSERV* <drive letter>:

Supply the drive letter where you want to add or modify files on the 6540 Terminal.

4. On the PC you should see the drive of the 6540 Terminal as the drive reported by REMDISK. You can edit and copy files to this drive as you would a normal drive. For example,

COPY C:\INTERMEC\6540\\*. \* D:\RAMDISK\UTILITY

Where “C” represents the PC drive and “D” represents the drive reported by REMDISK.

5. Copy the files from the PC to the 6540 Terminal using the DOS copy command and the drive letters from the previous steps

#### BIOS Older than Version 3.0

Use the *TRANSFER* utility to transfer data through a serial port link. Follow this procedure:

1. Use a “null modem” cable to connect the COM1 serial port on the terminal to the COM1 port on the PC with the file to be transferred. Intermec supplies a “null modem” cable, part number 999.
2. On the terminal type:

```
TRANSFER<space>/COM1<space>/R<space>/B19200<space>[6540 destination
drive][path]filename<enter>
```

Example: TRANSFER /COM1 /R /B19200 B:\FILENAME.EXT <enter>

This command starts the transfer program on the terminal allowing it to receive a file from your PC. You can specify a different name for the file on the terminal.

**Note:** Compress .INI and .CFG files before transferring. Use a common file compression and extraction program to do this.

3. On the PC, type:

```
TRANSFER<space>/COM1<space>/S<space>/B19200<space>[6540
destination drive][path]filename<enter>
```

Repeat these steps for each file to be transferred.

## Disk Drives

### Solid State Disks—Models DFB and DSB

Models DFB and DSB use solid state devices to fill the role of conventional hard drives. They are highly reliable and extremely fast, making them well suited for typical data collection applications. For storage of large programs or files, or for use of conventional operating systems, including DOS, Model DHB is available with a standard hard drive.

### ROM Disk (Drive A:)

Models DFB and DSB come with a ROM disk (A: drive). It contains the core operating system commands, the *AUTOEXEC.BAT* and *CONFIG.SYS* files, and certain drivers. Programs can be executed normally from the A drive, but files on the drive cannot be modified or erased, and new programs cannot be added.

### Flash Disk (Drive B:)

Models DFB and DSB come with a 512K FLASH disk (B: drive), which has the advantage of providing permanent nonvolatile storage (without requiring the use of a backup battery). Programs contained in the flash disk execute normally. The disk can also be write protected, and the terminal defaults to the write-protected condition on power-up. Once the write protection is removed, files can be copied to the FLASH drive using the standard DOS **COPY** commands, and files can be deleted using the standard DOS **DELETE** command.

Following are the applicable commands:

|                               |                          |
|-------------------------------|--------------------------|
| SSDRIVE <space> B: <space> -U | Remove write protection. |
| SSDRIVE <space> B: <space> -W | Add write protection.    |
| SSDRIVE <space> B: <space> -F | Format the drive.        |

### SRAM Disk–Model DSB Only (Drive C:)

The Model DSB can be configured with a 512KB or 1.5 MB SRAM disk (the C: drive, if present). It operates exactly as a conventional hard disk, with the exception that permanent data storage requires a battery backup.

Following are the applicable commands:

|                               |                         |
|-------------------------------|-------------------------|
| SSDRIVE <space> C: <space> -U | Remove write protection |
| SSDRIVE <space> C: <space> -W | Add write protection.   |
| SSDRIVE <space> C: <space> -F | Format the drive        |

### Hard Drive–Model DHB (Drive C:)

The Model DHB can be equipped with a 1 GB+ hard drive, configured as the C: drive, which functions exactly as a hard drive in a standard PC. A hard drive is mutually exclusive with a SRAM drive, as described above. When a terminal is equipped with a hard drive, the SRAM and flash are not included, however the hard drive includes a standard operating system, MS-DOS version 6.22. The *AUTOEXEC.BAT* and *CONFIG.SYS* files are on the hard drive's root directory.

### Virtual Disk (D:)

You may create a virtual disk on any model. A virtual disk is a drive that uses standard memory for data storage. It is volatile. If the unit loses power, you lose all data on this drive. The file *VDISK.SYS* creates a virtual drive. Declare a virtual drive to be the D drive.

To create a virtual drive, add the following line to your *USERCONF.SYS*.

```
device=b:\vdisk.sys /E 3072
```

Then copy the *VDISK.SYS* file from the utilities disk to the root directory of the B drive on the terminal.

### *CONFIG and AUTOEXEC Files*

The Model DHB has standard *AUTOEXEC.BAT* and *CONFIG.SYS* files as with a standard PC. The Models DFB and DSB have the same files, but they are "read-only."

In most desktop PC's the *CONFIG.SYS* and *AUTOEXEC.BAT* files are preinstalled (or installed as part of the process of loading DOS). They may be accessed and modified by you. In the Models DFB and DSB these files are preinstalled on the A drive. They may not be modified by you; however each calls a file on the B drive that functions as a continuation of the *CONFIG.SYS* and *AUTOEXEC.BAT* files, and can be modified.

The terminal boots as follows:

|    | <u>File</u>         | <u>Drive</u> | <u>Access</u>                                |
|----|---------------------|--------------|--|
| 1. | <i>CONFIG.SYS</i>   | A:           | Cannot be modified                           |
| 2. | <i>USERCONF.SYS</i> | B:           | Called by <i>CONFIG.SYS</i> , you can modify |
| 3. | <i>AUTOEXEC.BAT</i> | A:           | Cannot be modified                           |

4. *USER.BAT*                      B:                      Called by *AUTOEXEC.BAT*, you can modify

### **CONFIG.SYS**

The *CONFIG.SYS* file sets the necessary hardware device drivers for the system and contains the following statements:

```
DEVICE=SSDRVE . SYS /f
DEVICE=SSDRVE . SYS /s
FILES=20
BUFFERS=5
NEWFILE=B:\USERCONF . SYS
```

### **USERCONF.SYS**

You may edit the *USERCONF.SYS* file on the B: drive, incorporating additional lines of the main *CONFIG.SYS* file used to override *CONFIG.SYS*, e.g. Buffers = 10, can be added to override Buffers = 5 as stated in *CONFIG.SYS*.

Note that when commands are added, the full path must be specified, e.g. DEVICE = B:\PROTMAN.DOS

For Model DSB only, the *USERCONF.SYS* file must contain the SHELL = B:\COMMAND.COM /P line to be able to reboot into a full ROM-DOS mode. Also, *COMMAND.COM* must be copied to B drive.

### **AUTOEXEC.BAT**

It contains the following statements:

```
PATH A:\;B:\;C:\;
PROMPT $P $G
USER.BAT
```

The commands do not display as they load.

### **USER.BAT**

You may edit the *USER.BAT* file on the B: drive, incorporating additional lines of the main *AUTOEXEC.BAT* file.

### **Mini ROM DOS**

The Model DSB uses a mini ROM DOS function. This frees hexadecimal addresses C800–DFFF for use with ISA cards. This reduced operating system makes running programs more difficult. If you have problems running programs, follow this procedure to load the full ROM DOS.

### **Full ROM DOS**

Reboot the terminal and press the [Caps Lock] key repeatedly. If you see the introductory screen reboot and try again.

If you see the menu, select full ROM-DOS. This gives you the full operating system.

If this solved the problems, make the change permanent by inserting the following line in the *USERCONF.SYS* file:

```
SHELL=B:\COMMAND.COM /P
```

While still in full ROM DOS, copy the *COMMAND.COM* file from A to B drive.



# ***Display and Keyboard***

The terminal features a 4-line by 40-character "advanced supertwist" display that provides large, bright characters viewable from a wide angle, without requiring contrast or brightness adjustment. We offer an optional 8-line by 40-character display.

The display can be described as a 4x40 or 8x40 window on a standard 25x80 monochrome PC display. Programmers can use the standard, nongraphics print commands of any normal DOS programming language to write to the display. Writing for the smaller size may take some adjustment, but the display driver makes this easier by positioning the screen and cursor wherever the program sends it.

Existing custom applications written for full screen PCs can generally be rewritten to run on the terminal, provided they do not make use of graphics. Off-the-shelf office automation applications generally cannot be modified and are not usable.

### ***Principle of Operation***

The BIOS operates differently before version 3.0 and after. In newer versions the display driver is loaded in the BIOS. In older BIOS versions, the terminal runs a TSR program, *LTDSPY.COM*, included in the *AUTOEXEC.BAT* file, that redirects video output to LPT2, the display. Table 6-3 Display Character Set, shows the characters that can be displayed by the terminal.

### ***Configuring the Display***

In its standard configuration, the terminal emulates a monochrome monitor. Programs that support a monochrome monitor run normally on it. If your program is set for a VGA monochrome, you have two options:

1. You can reconfigure your program to run on a monochrome monitor.
2. You can reconfigure the terminal to emulate a color monitor. (Most programs run fine with the default, monochrome configuration; a few programs, including CA-Clipper require reconfiguration of the terminal.) Simply type **COLOR** at the DOS prompt to launch the program. To run the color program whenever the terminal boots, add the command **COLOR** to the *USER.BAT* or *AUTOEXEC.BAT* file.

## ***Writing to the Display***

When writing to the display, the first 40 characters of any line are displayed as typed. The 41st to 80th characters cause the screen to "shift" one position to the right—as each additional character is displayed in the 40th position. When the 81st character is typed the cursor shifts down a line and starts from the first position on the second line of the display.

To move the entire 4x40 on the full PC screen from the keyboard, use the following key combinations. Pressing the <Esc> key always returns you to the current cursor position. Note that when you reach the end of the full PC screen, the message `BOTTOM OF SCREEN` appears.

The standard <Ctrl>+<PgDn> or <Ctrl>+<PgUp> keys cause the application to send the full 25x80 screen above or below the current screen, as on a standard PC.

## ***Simulating a Large Block Cursor***

The cursor's default is an underline. To change to a block cursor, simply run the program **CURSOR** by typing `A:\CURSOR`. The cursor becomes a block. To change the cursor back to an underline, simply run the program **MONO**, if the terminal is in its default configuration, or "color" if emulating a color monitor. To run the program whenever you turn on the terminal, add the command **CURSOR** to the `AUTOEXEC.BAT` or `USER.BAT` file.

## ***Writing Applications for the Display***

Generally, the display is easy to write to. With the exception of graphic commands, all normal display commands such as cursor positioning, line control, and page control work as expected. As you move around the screen, the window follows the cursor.

If a program attempts to display a graphics image, the terminal displays the message `GRAPHICS MODE NOT SUPPORTED`. Under certain circumstances, if a program attempts to force the terminal into a graphics mode, it could lock up. If this occurs, you should either exit the program or reboot the terminal by turning it off and then back on, then reinstalling the software for use with a monochrome monitor.

Table 6-1  
4x40 Display Windows

| Row/<br>Column | 1                | 40 | 41               | 80 |
|----------------|------------------|----|------------------|----|
| 1              | Screen #1 (Home) |    | Screen #2        |    |
| 2              |                  |    |                  |    |
| 3              |                  |    |                  |    |
| 4              |                  |    |                  |    |
| 5              | Screen #3        |    | Screen #4        |    |
| 6              |                  |    |                  |    |
| 7              |                  |    |                  |    |
| 8              |                  |    |                  |    |
| 9              | Screen #5        |    | Screen #6        |    |
| 10             |                  |    |                  |    |
| 11             |                  |    |                  |    |
| 12             |                  |    |                  |    |
| 13             | Screen #7        |    | Screen #8        |    |
| 14             |                  |    |                  |    |
| 15             |                  |    |                  |    |
| 16             |                  |    |                  |    |
| 17             | Screen #9        |    | Screen #10       |    |
| 18             |                  |    |                  |    |
| 19             |                  |    |                  |    |
| 20             |                  |    |                  |    |
| 21             | Screen #11       |    | Screen #12       |    |
| 22             |                  |    |                  |    |
| 23             |                  |    |                  |    |
| 24             |                  |    |                  |    |
| 25             | Screen #13       |    | Screen #14 (End) |    |

[Bottom of Screen]

[Bottom of Screen]

|                 |                                    |
|-----------------|------------------------------------|
| <Ctrl><←>:      | Moves to the left screen           |
| <Ctrl><→>:      | Moves to the right screen          |
| <Ctrl><↑>:      | Moves up a screen                  |
| <Ctrl><↓>:      | Moves down a screen                |
| <Ctrl><Tab>:    | Go to HOME                         |
| <Ctrl><Delete>: | Go to END                          |
| <Esc>:          | Returns to current cursor position |

For example, when at:

| Screen | Key Pressed     | Go to Screen |
|--------|-----------------|--------------|
| 3      | <Ctrl> <↑>      | 1            |
| 1      | <Ctrl> <↑>      | 13           |
| 13     | <Ctrl> <↓>      | 1            |
| 1      | <Ctrl> <←>      | 2            |
| 10     | <Ctrl> <Tab>    | 1            |
| 10     | <Ctrl> <Delete> | 14           |

Table 6-2  
8x40 Display Windows

| Row/<br>Column | 1                | 40 | 41              | 80 |
|----------------|------------------|----|-----------------|----|
| 1              | Screen #1 (Home) |    | Screen #2       |    |
| 2              |                  |    |                 |    |
| 3              |                  |    |                 |    |
| 4              |                  |    |                 |    |
| 5              |                  |    |                 |    |
| 6              |                  |    |                 |    |
| 7              |                  |    |                 |    |
| 8              |                  |    |                 |    |
| 9              | Screen #3        |    | Screen #4       |    |
| 10             |                  |    |                 |    |
| 11             |                  |    |                 |    |
| 12             |                  |    |                 |    |
| 13             |                  |    |                 |    |
| 14             |                  |    |                 |    |
| 15             |                  |    |                 |    |
| 16             |                  |    |                 |    |
| 17             | Screen #5        |    | Screen #6       |    |
| 18             |                  |    |                 |    |
| 19             |                  |    |                 |    |
| 20             |                  |    |                 |    |
| 21             |                  |    |                 |    |
| 22             |                  |    |                 |    |
| 23             |                  |    |                 |    |
| 24             |                  |    |                 |    |
| 25             | Screen #7        |    | Screen #8 (End) |    |

[Bottom of Screen]

[Bottom of Screen]

|                 |                                    |
|-----------------|------------------------------------|
| <Ctrl><←>:      | Moves to the left screen           |
| <Ctrl><→>:      | Moves to the right screen          |
| <Ctrl><↑>:      | Moves up a screen                  |
| <Ctrl><↓>:      | Moves down a screen                |
| <Ctrl><Tab>:    | Go to HOME                         |
| <Ctrl><Delete>: | Go to END                          |
| <Esc>:          | Returns to current cursor position |

For example, when at:

| Screen | Key Pressed     | Go to Screen |
|--------|-----------------|--------------|
| 3      | <Ctrl> <↑>      | 1            |
| 1      | <Ctrl> <↑>      | 7            |
| 7      | <Ctrl> <↓>      | 1            |
| 1      | <Ctrl> <→>      | 2            |
| 6      | <Ctrl> <Tab>    | 1            |
| 4      | <Ctrl> <Delete> | 8            |

Table 6-3  
Display Character Set

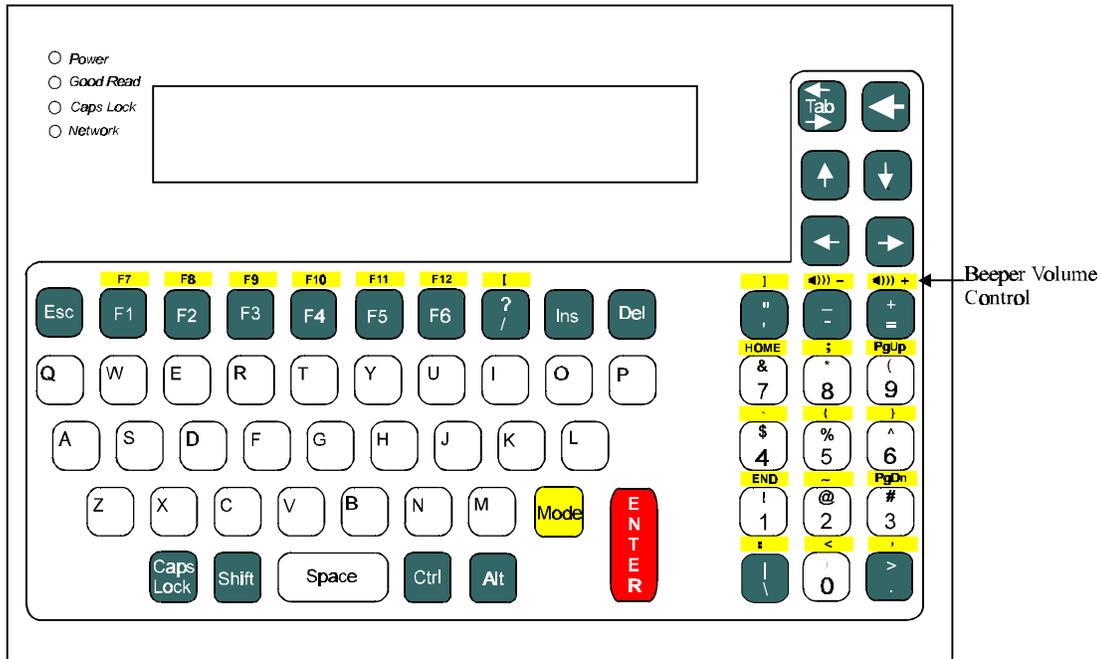
The characters in this table are supported by the display.

| Upper 4-bits<br>Lower 4-bits | 0000 | 0010 | 0011 | 0100 | 0101 | 0110 | 0111 |
|------------------------------|------|------|------|------|------|------|------|
| X X X X 0000                 |      |      | 0    | @    | P    | `    | p    |
| X X X X 0001                 | N    | !    | 1    | A    | Q    | a    | q    |
| X X X X 0010                 | O    | "    | 2    | B    | R    | b    | r    |
| X X X X 0011                 | T    | #    | 3    | C    | S    | c    | s    |
| X X X X 0100                 |      | \$   | 4    | D    | T    | d    | t    |
| X X X X 0101                 |      | %    | 5    | E    | U    | e    | u    |
| X X X X 0110                 | A    | &    | 6    | F    | V    | f    | v    |
| X X X X 0111                 | V    | '    | 7    | G    | W    | g    | w    |
| X X X X 1000                 | A    | (    | 8    | H    | X    | h    | x    |
| X X X X 1001                 | I    | )    | 9    | I    | Y    | i    | y    |
| X X X X 1010                 | L    | *    | :    | J    | Z    | j    | z    |
| X X X X 1011                 | A    | +    | ;    | K    | [    | k    | {    |
| X X X X 1100                 | B    | ,    | <    | L    | \    | l    |      |
| X X X X 1101                 | L    | -    | =    | M    | ]    | m    | }    |
| X X X X 1110                 | E    | .    | >    | N    | ^    | n    |      |
| X X X X 1111                 |      | /    | ?    | O    | _    | o    | ←    |

## Keyboard

The keyboard is designed for data entry applications. Its 64 keys provide excellent tactile feedback. The elastomer provides excellent resistance to contaminants and electrostatic shock.

The <Shift>, <Ctrl>, and <Alt> keys have the same effect as on a standard PC. The number keys and some of the function keys have a third position, activated in conjunction with the <Mode> key. These keys can control the volume of the speaker and produce some important, but infrequently used symbols. These functions and characters are printed on the overlay above the keys. Produce them by holding down <Mode> and pressing the desired key, for example <Mode>1=:



Note 1: Volume can be adjusted by pressing "mode" and  for higher or by pressing "mode" and  for lower.

Figure 6-1  
QWERTY Keyboard Layout

## Using an External Keyboard

In addition to the built-in keyboard, you can connect any external keyboard with an AT-style interface. Both the internal and external keyboards are active. When programmers or system administrators want to work directly with the terminal, they may find this method more convenient. Bar code scanners and other devices with keyboard "wedge" format output can also be connected to the external keyboard port, as discussed in Section 7.

Note that the 6-pin mini-DIN keyboard connector is of the PS/2 type commonly found on laptop computers and most desktop PCs. If your external keyboard has a larger, 5-pin DIN connector, you can use an adapter, readily available in computer and electronics stores.

## Special Keyboard Versions

### Reduced Keys

For applications where the operator needs few keys or no keys, the terminal is available in versions with reduced keyboard and no keyboard. These are pictured in Figure 6-2 and Figure 6-3. Reduced keyboards still support a standard external keyboard attached to the rear panel.

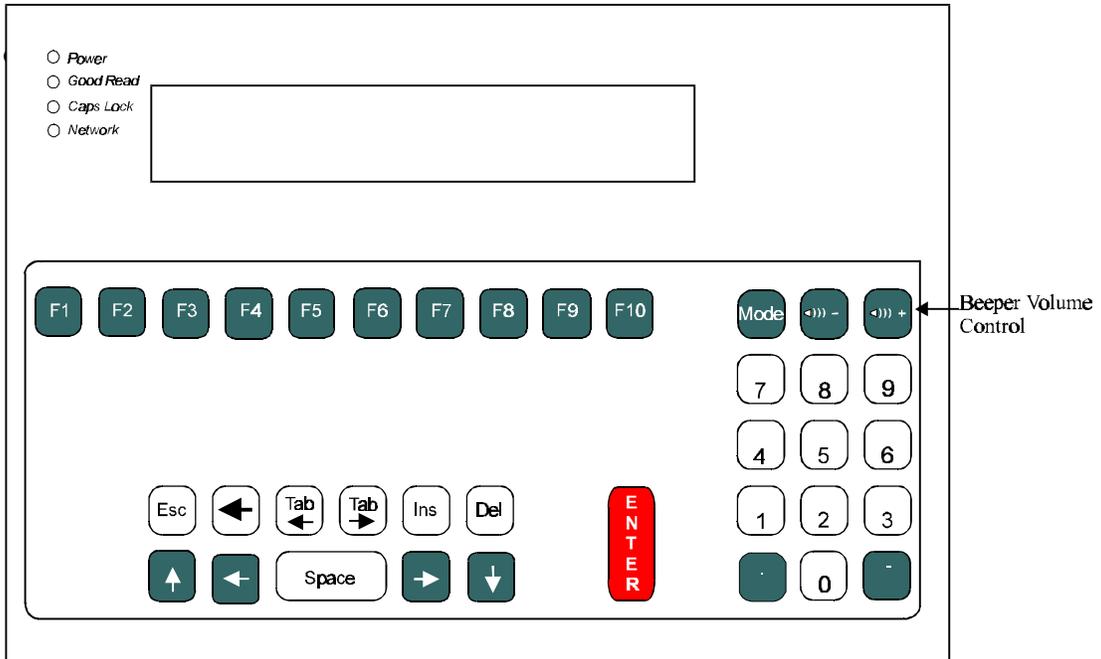


Figure 6-2  
Reduced-Key Keyboard Layout

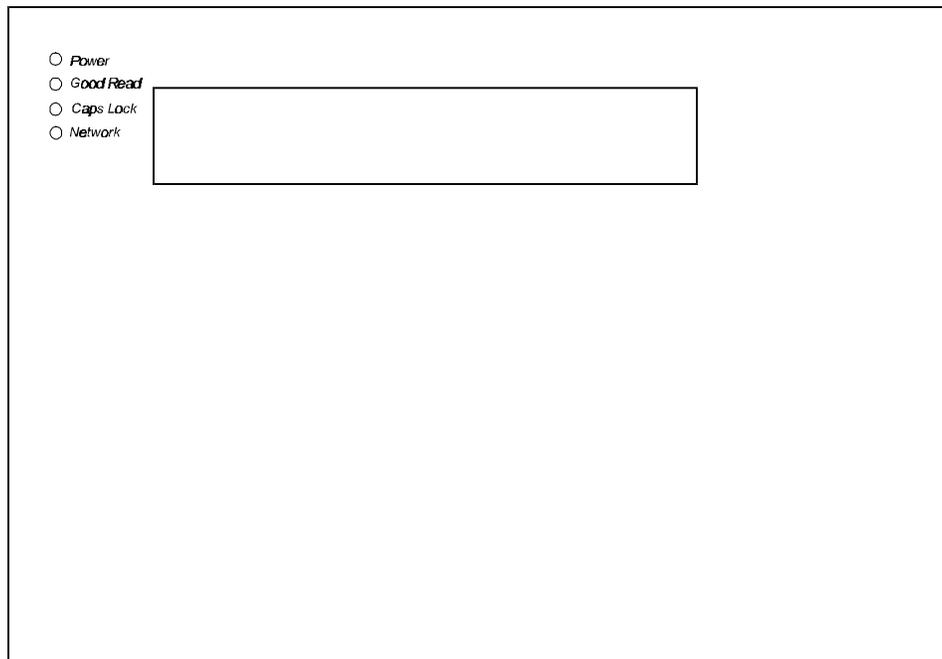


Figure 6-3  
No-Key Keyboard Layout

## European Layout

Special keypads are available for European countries. An AZERTY version, used in France, is pictured in Figure 6-4. Please contact us for information on special keyboards for other countries.

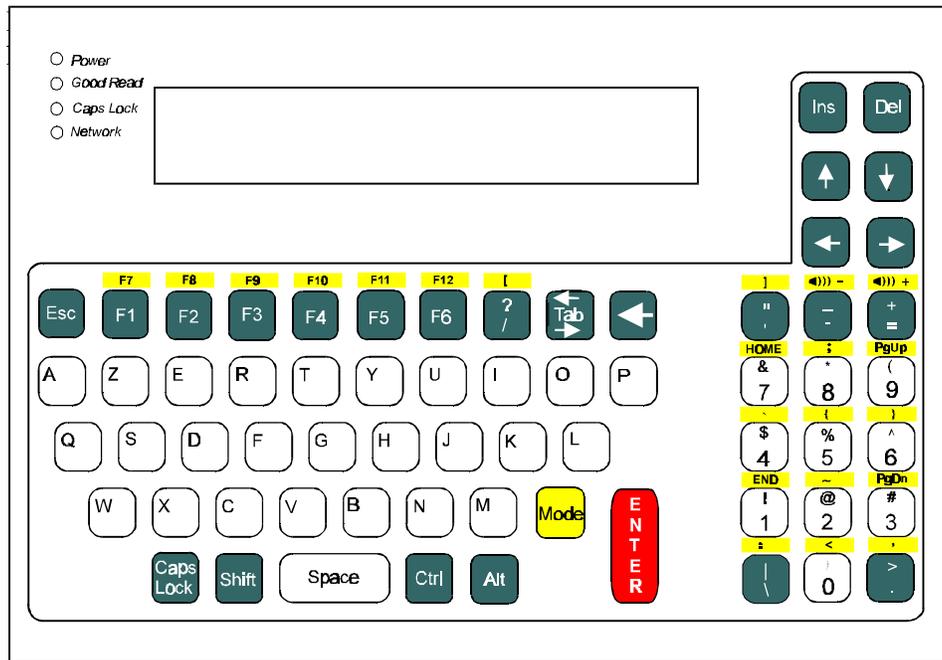


Figure 6-4  
AZERTY Keyboard Layout

## Section 7

# Inputs and Interfaces

### Connecting Bar Code Scanners and Magnetic Stripe Readers

The terminal can accept input from up to three bar code scanners as shown in the following table.

| <b>SCANNERS</b>  | <b>PART NUMBER</b>                  |  |                           |
|--|-------------------------------------|--|---------------------------|
|  | 6-PIN MODULAR<br>PORT               | 9-PIN D PORT   | EXTERNAL<br>KEYBOARD PORT |
|  | J4                                  | J3   | J2                        |
|  | Wands or Wand<br>Emulation Scanners | Undecoded Lasers or<br>Wands or Wand<br>Emulation Scanners | Wedge Scanners            |
| ScanImage Hand-<br>Held Laser Scanner                            | 0-00X911-00<br>(Decoded)            | 0-001910-00*<br>(Undecoded)                                | 0-001917-03<br>(Decoded)  |
| ScanPlus Hand-Held<br>CCD Scanner                                | 0-3X0311-00*<br>(Decoded)           | 0-300311-02<br>(Decoded)                                   | 0-350311-03<br>(Decoded)  |
| BarPen 40 Stainless<br>Steel Pen - Medium<br>Density Visible Red | 0-492201-00*<br>(Undecoded)         | 0-492201-02<br>(Undecoded)                                 | N/A                       |
| Bar Code Swipe<br>Reader**                                       | 0-410101-00<br>(Undecoded)          | 0-410101-01*<br>(Undecoded)                                | N/A                       |
| MagScan Swipe<br>Reader**  | 0-155002-00*<br>(Decoded)           | N/A  | 0-155002-03<br>(Decoded)  |

\* Preferred Port: Use this port for the scanner if available.

\*\* Requires the accessory mounting bracket (part number 2-486015-20) to attach reader to the terminal.

***Parallel Port***

The standard LPT1 parallel port supports any PC-compatible printer.

# **ROM-DOS for Models DFB and DSB**

The terminal contains ROM-DOS, an on-board MS-DOS 6.X-compatible operating system developed by Datalight, Inc. Although most desktop or laptop PCs store DOS on their disk drives, this terminal stores DOS in its read-only memory (ROM). To preserve space in ROM, which is more limited, only a subset of ROM-DOS is included in ROM. The remainder is included in the 6540 utility disk. You can load what you need.(see Section 5). The large majority of programs, however, run with the DOS-subset loaded in the terminal. Appendix A contains a summary of the ROM-DOS commands. For more information on using the ROM-DOS commands, see any DOS manual.

## **Internal ROM-DOS Commands**

The following commands are internal ROM-DOS commands included as part of **COMMAND.COM**, which is installed on the A: drive.

| <u>COMMAND</u> | <u>BRIEF DESCRIPTION</u>   |
|----------------|--|
| @              | Suppresses display of a single batch file command line.                            |
| ;              | Same as REMark. A batch subcommand for identifying nonexecuting lines.             |
| BREAK          | Turns on or off the ability to stop execution at a non-I/O point.                  |
| BUFFERS        | Sets the number of internal data buffers.  |
| CALL           | Batch command. Invokes execution of a secondary batch file.                        |
| CHDIR          | CHange DIRectory (also CD). Changes the default directory.                         |
| CLS            | CLear Screen. Clears all information from the monitor.                             |
| COMMAND        | Spawn a second DOS command processor.  |
| CTTY           | Change TeleTYpe. Changes the default terminal interacting with ROM-DOS.            |
| DATE           | Displays the date from the system's internal calendar. Allows revision.            |
| DEL            | DELeTe. Deletes specified files.   |
| DEVICE         | Installs a device driver into ROM-DOS.   |
| DEVICEHIGH     | <i>CONFIG.SYS</i> command. Loads a device into the upper memory area if available. |
| DIR            | DIRectory. Lists contents of a specified directory.                                |
| DOS            | Installs ROM-DOS into High Memory Area (HMA).                                      |

|             |   |
|-------------|---|
| ECHO        | Batch command. Turns on or off display of batch execution on the monitor.   |
| EXIT        | Exit "nested" running of ROM-DOS within another program.  |
| FCBS        | Sets the number of File Control Blocks (FCBS) open at one time.   |
| FILES       | Sets the maximum number of files that can be open at one time.  |
| FOR         | Batch command. Performs one DOS command on a set of files.  |
| GOTO        | Batch command. Moves control to a specified line in the batch file.   |
| HELP        | Lists all available ROM-DOS commands with brief descriptions.   |
| IF          | Batch command. Performs a command based on a specified condition.   |
| INCLUDE     | <i>CONFIG.SYS</i> menu configuration command. Allows instructions in one configuration block to be included with instructions in another configuration block. |
| INSTALL     | Loads terminate and Stay Resident (TSR) programs during <i>CONFIG.SYS</i> processing.   |
| LASTDRIVE   | Sets the maximum number of drives.  |
| LOADHIGH    | Batch command or command line command. Loads a program into the upper memory area if available.   |
| MENUCOLOR   | <i>CONFIG.SYS</i> menu configuration command. Allows setting text and background colors for the startup menu.   |
| MENUDEFAULT | <i>CONFIG.SYS</i> menu configuration command. Sets the default menu item choice and timeout value for making a selection.                                     |
| MENUITEM    | <i>CONFIG.SYS</i> menu configuration command. Specifies an item to be placed on the startup menu displayed during system boot.                                |
| MKDIR       | MaKe DIRectory (also MD). Creates a new directory.  |
| NEWFILE     | Allows continuation of <i>CONFIG.SYS</i> processing from a new file.  |
| NUMLOCK     | Sets the NUMLOCK keyboard key to on or off when your computer starts.   |
| PATH        | Displays current command search path(s). A new path line can be specified.  |
| PAUSE       | Batch command. Causes execution to halt until a key is pressed.   |
| PROMPT      | Resets the appearance of the system prompt line.  |
| REM         | REMark. A batch command for identifying nonexecuting lines.   |
| REN         | REName. Renames files.  |
| RMDIR       | ReMove DIRectory (also RM). Deletes a specified directory.  |
| SET         | Sets environment variables and command processor strings.   |

|          |  |
|----------|--|
| SHELL    | Allows selections of an alternate boot program other than the default COMMAND.COM command processor. |
| SHIFT    | Batch subcommand. Shifts replaceable parameters one position "to the left."                          |
| STACKS   | Allows dynamic data stacks to handle interrupts. Note: ROM-DOS does not utilize this command.        |
| SUBMENU  | <i>CONFIG.SYS</i> menu configuration command. Defines a menu item that represents a secondary menu.  |
| SWITCHES | Allows special <i>CONFIG.SYS</i> file options.   |
| TIME     | Displays current time from the system's internal clock. Allows revision.                             |
| TYPE     | Displays the contents of a text file on the monitor.   |
| VER      | Displays current version of ROM-DOS on the monitor.  |
| VERIFY   | Displays the current VERIFY state or sets the VERIFY state to on or off.                             |
| VOL      | Displays the VOLUME label on a disk.   |

## External ROM-DOS Commands

The following commands are on the utility disk. You can copy them as described in Section 5.

| <u>COMMAND</u> | <u>BRIEF DESCRIPTION</u>  |
|----------------|---|
| ATTRIB         | Display or modify the attributes associated with a file.                        |
| CHKDSK         | CHecK DiSK. Checks integrity of data on a disk. Displays information.           |
| COPY           | Copies files from one storage location to another.                              |
| DISKCOPY       | Copy the contents of one floppy disk to another of the same type.               |
| ERASE          | Erases specified files (same as DEL).   |
| FDISK          | Initialize and partition a hard disk for DOS.                                   |
| FIND           | Works as a filter to display only lines that contain a specified string.        |
| FORMAT         | Initializes a disk so that ROM-DOS can access files on that disk.               |
| KEYB           | Allows altering of the keyboard layout for a different language or nationality. |
| LABEL          | Create, change or delete a disk volume label.                                   |
| MODE           | Modifies the operation of the printer, serial port and active video display.    |
| MORE           | Displays a text file one screen at a time.                                      |
| PRINT          | Prints a list of up to ten files.   |
| SHARE          | Installs the capabilities for file sharing and file locking on your hard disk.  |
| SORT           | Sorts a text file and displays the output to the standard device.               |
| SYS            | Transfers the hidden system files to a specified drive.                         |
| TREE           | Displays the path of each directory on a specified drive.                       |
| XCOPY          | Copy multiple files and optionally subdirectories.                              |
| XDEL           | Deletes files and subdirectories including empty subdirectories.                |

# Configuring the Bar Code Decoder

You can configure the integrated bar code decoder with *MAXICONF2*, a menu-driven program on the utility diskette. *MAXICONF2* runs on a PC and generates a file with a custom configuration that you load in the terminal. When you run the *MAXILOAD* program on the terminal, it loads the configuration file into the decoder, via a dedicated, internal COM3 connection.

The default configuration suits many applications, but you can modify the reader's operation, such as:

- Activate or deactivate bar code formats
- Use optional features of the code formats
- Add preambles or postambles to the decoded messages
- Raise or lower speaker volume

**Note:** These instructions apply for parameters of *undecoded* scanners. *Decoded* scanners are configured using their own manuals. To determine which scanners are undecoded, see Section 7 for assistance. To configure a decoded scanner, consult its user's manual.

## Installing the Configuration Software on a PC

Install the configuration program *MAXICONF2* on a full screen PC. Copy all files from the **\CONFIG** directory on the utility disk to the desired directory on your PC or network. Follow this prototype, replacing the variable information with your drives and path.

```
Prototype Copy [drive]\CONFIG\*. * [drive][path] <enter>
```

```
Example Copy a:\CONFIG\*. * c:\barcode\ <enter>
```

## Creating a Configuration File

To run the configuration program, change to its directory and type:

```
MAXICONF2 <enter>
```

If you have not created a custom configuration file, simply select **MODIFY PARAMETERS** to modify the terminal's decoder parameters. If you have already created a custom configuration that you want to change, select **FILE** and then select **LOAD**. The program prompts:

```
ENTER THE CONFIGURATION FILENAME
```

Enter the drive and path if the file is not in the current directory. Do not enter a file extension since the program assigns *.CFG* as an extension. If you use a valid file name, the program displays:

```
CONFIGURATION LOADED  
PRESS ANY KEY TO CONTINUE
```

If you use an invalid file name, the program displays:

```
CONFIGURATION FILE NOT FOUND  
PRESS ANY KEY TO CONTINUE
```

You can maintain an unlimited number of configurations for individual terminals.

## Modify Parameters

Selecting **MODIFY\_PARAMETERS** from the program's command line, displays the Parameters menu.

Select the parameter and options to modify by moving the cursor with the up and down arrow keys within the options to highlight your choice. Press <enter> to select the option. In some cases, you see additional options. Repeat these steps until you make all your changes.

The default options are indicated by an asterisk. Selected options are indicated by a highlight.

## Saving the File

To save the file press the <Esc> key to return to the command line, highlight the **FILE** option, and press <enter>. Then select the **SAVE** option and press <enter>. The terminal prompts:

```
ENTER CONFIGURATION FILENAME
```

You can specify a drive and path outside the current directory; otherwise the file saves to the current directory. Do not specify a file extension, since the program assigns an extension of *.CFG*.

If you specify a file name that already exists the program prompts:

```
FILE EXISTS DO YOU WANT TO OVERWRITE (Y/N)?
```

A **Y** (Yes) response overwrites the existing file.

A **N** (No) response lets you to supply a different file name.

## Quitting the Program

Select **QUIT** to exit the program. If you try to quit without saving a file the program checks:

```
CHANGES WILL BE LOST IF NOT SAVED!  
DO YOU WISH TO QUIT WITHOUT SAVING CHANGES (Y/N)?
```

A **Y** (Yes) response quits the program.

A **N** (No) response returns to the **SAVE** option.

## Loading a Configuration File into the Bar Code Decoder

Transfer the *MAXILOAD* program and your *.CFG* file to the terminal with a serial connection (see Section 5). The program is in the \CONFIG directory on the Utility disk, while the *.CFG* file must be created with the **MAXICONF2** program and saved to your PC.

To load the terminal's built-in bar code decoder with a custom configuration file, type *MAXILOAD* at the DOS prompt on the terminal. The *MAXILOAD* menu is displayed:

```
1: CONFIGURE MAXILAN
2: RETURN TO DEFAULT
3: QUIT                ENTER CHOICE_
```

Option 1 prompts for file name:

```
ENTER THE FILE NAME:
```

Do not enter a file extension as the program appends a *CFG* extension.

The program finds the file, programs the bar code decoder, executes a beep sequence and returns to the DOS prompt. If the file cannot be found, the terminal displays `CAN'T OPEN THE "FILENAME" FILE`, and returns to the DOS prompt. If the file cannot be found, make sure that you have specified the proper path.

Selecting option 2 reprograms the bar code decoder to the factory default setting.

Selecting option 3 exits the program without reprogramming the bar code decoder.

*MAXILOAD* can be automated to load a configuration each time the unit is powered on by typing **MAXILOAD <CONFIG**. The terminal must have two files on the drive. The first file called *CONFIG* must have a number on the first line which represents the options in the *MAXILOAD* program; for example 1 for configure terminal, 2 for return to default. If option 1 was stored, the second line of the *CONFIG* program should contain the file name, without extension, for configuring the terminal's bar code reader. The second file is the file name and extension for configuring the bar code reader.



## Section 10

# Troubleshooting

The following questions or problems and the suggested actions help you resolve some common problems.

### ***Unit does not boot***

Is the power light lit? Is the unit plugged in?

If yes, call help desk.

If no, plug unit in.

Is the switch turned to the “off” position?

If no, call help desk.

If yes, switch unit on.

### ***Do you hear tones when you boot the unit?***

If no, send unit for repair.

### ***Do you see characters on the display?***

If no, call the help desk.

### ***Does the unit hang on a command?***

Does the command follow?

If yes, reboot the unit. As soon as the tones end, press F8 (Mode F2).

You should see it prompt you to run the first line of the CONFIG.SYS file.

Press <Enter> until you see the unit display the command it hangs on.

Press <No> at this command.

Continue to press <No> until you get to the DOS prompt.

### ***Is the following line causing the problem?***

```
Shell=b:\command.com /p
```

If yes, COMMAND.COM was not copied over from the B drive.

If no, either the file is being called for incorrectly or corrupt.

If you still have problems, please call the help desk.

### ***Mini-Command appears at boot***

This problem only shows up on the model DSB 6540 Terminals. To fix it, press the <Shift> key and the <Caps Lock> key repeatedly as soon as you turn the unit on. This should bring up a boot up option menu. If you get a DOS prompt you began pressing the keys too late. You need to press the keys before any tones sound.

Press 1 for a full ROM-DOS boot up.

After reaching the DOS prompt, unlock the B drive, and copy the COMMAND.COM file to the B drive.

In the USERCONF.SYS file add the following line as the first line:

```
Shell=b:\command.com /p
```

### ***Cannot copy files to A or B drives***

#### **Are you trying to copy files to the A drive?**

The A drive is a ROM drive, and cannot be written to. So there is not a way to copy files onto this drive.

#### **Are you trying to copy files to the B drive?**

The B drive is a flash drive. Every time the unit is booted, it comes up in the locked position. To unlock the drive, enter the following command:

```
ssdrive -u b:
```

This should make it so you can write and delete from the B drive.

### ***Scanner is not working***

#### **Does the scanner appear to be registering good reads?**

If no, check the connections to make sure it is connected properly.

If yes, the scanner is probably misconfigured. Follow Section 9 for instructions as to how to reprogram the scanner.

### ***I cannot get a post or preamble configured***

Follow the instructions on Section 9 for instructions as to configuring a post or preamble.

### ***I cannot get files to the 6540 Terminal***

Since this unit does not have a floppy drive, the only ways to load files to the unit are either through serial transfer or the network. Section 5 describes how to transfer files using serial transfer.

***I cannot connect to the network***

The unit is sent with either Novell or PCTCP files already installed. But the terminal must be configured for your particular network. Section 4 helps you configure the 6540 Terminal for your own network.



# Appendix A

## Network Drivers

Each 3.5 inch diskette contains the network driver files for wired connections:

| DIRECTORY                               | FILENAME            | COMMENTS   |
|---|---------------------|--|
| ROOT DIRECTORY                          | <i>!CS89XX.CFG</i>  | EISA configuration file.                         |
|   | <i>DISK1</i>        | Installation file.                               |
|   | <i>ENDS3ISA.VXD</i> | NDIS 3.0 driver for Windows 95.                  |
|   | <i>ENDS3ISA.SYS</i> | NDIS 3.0 driver for Windows NT.                  |
|   | <i>ENDS3ISA.386</i> | NDIS 3.0 driver for Win for Workgroups.          |
|   | <i>NETCSC.INF</i>   | Driver installation file for Windows 95.         |
|   | <i>OEMSETNT.INF</i> | Driver installation file for Windows NT.         |
|   | <i>OEMSETUP.INF</i> | Driver installation file for Win for Workgroups. |
|   | <i>README.EXE</i>   | This application.                                |
|   | <i>REL250</i>       | RELease control document number.                 |
|   | <i>SETUP.EXE</i>    | CS89XX setup and diagnostic utility.             |
| \BOOTPROM                               | <i>RBOOT.ROM</i>    | BootPROM image for RIPL.                         |
| \DMI                                    | <i>CS89DMI.DLL</i>  | DMI component interface for OS/2.                |
|   | <i>CS89DMI.MIF</i>  | CS89XX MIF file.                                 |
|   | <i>CS89DMI.OVL</i>  | DMI component interface for DOS.                 |
| \DOS                                    | <i>ENDS2ISA.DOS</i> | NDIS 2.0.1 DOS driver.                           |
|   | <i>ENDS2ISA.NIF</i> | NDIS 2.0.1 installation file.                    |
|   | <i>EODIISA.COM</i>  | NetWare ODI DOS client server.                   |
|   | <i>EODIISA.INS</i>  | NetWare DOS client installation file             |
|   | <i>PROTOCOL.INI</i> | NDIS 2.0.1 configuration file.                   |
| \MSLANMAN.DOS\DRIVERS\ETHERNET\ENDS2ISA |                     |  |
|   | <i>ENDS2ISA.DOS</i> | NDIS 2.0.1 DOS driver.                           |
|   | <i>PROTOCOL.INI</i> | Sample PROTOCOL.INI file.                        |
| \MSLANMAN.DOS\DRIVERS\NIF               |                     |  |
|   | <i>ENDS2ISA.NIF</i> | Used by LAN Manager setup utility.               |
| \MSLANMAN.OS2\DRIVERS\ETHERNET\ENDS2ISA |                     |  |
|   | <i>ENDS2ISA.OS2</i> | NDIS 2.0.1 OS/2 driver.                          |

| <b>DIRECTORY</b>          | <b>FILENAME</b>     | <b>COMMENTS</b>                     |
|---------------------------|---------------------|-------------------------------------|
|                           | <i>NDS.MSG</i>      |                                     |
|                           | <i>PROTOCOL.INI</i> | Sample PROTOCOL.INI file.           |
| \MSLANMAN.OS2\DRIVERS\NIF |                     |                                     |
|                           | <i>ENDS2ISA.NIF</i> | Used by LAN Manager setup utility.  |
| \NETWARE                  | <i>EODIISA.LAN</i>  | Novell server driver.               |
|                           | <i>EODIISA.LDI</i>  | Server driver installation file.    |
| \OS2                      | <i>ENDS2ISA.OS2</i> | NDIS 2.0.1 OS/2 driver.             |
|                           | <i>ENDS2ISA.NIF</i> | NDIS 2.0.1 installation file.       |
|                           | <i>EODIISA.SYS</i>  | NetWare OS/2 ODI client server.     |
|                           | <i>NDS.MSG</i>      |                                     |
|                           | <i>PROTOCOL.INI</i> | NDIS 2.0.1 configuration file       |
| \PCKTDRVR                 | <i>EPKTISA.COM</i>  | Packet driver for DOS workstations. |
|                           | <i>SOURCE.ZIP</i>   | Source files for packet driver.     |

# Appendix B

## Utility Disk

Each 3.5 inch disk contains the following utility files:

| <b>DIRECTORY</b> | <b>FILENAME</b>                          | <b>COMMENTS</b>   |  |
|------------------|--|---|--|
| ROOT             | <i>COMMAND.COM</i>                       | Allows utility diskette to boot.  |  |
| DIRECTORY        | <i>ROM-DOS.SYS</i><br><i>SYS.COM</i>     | Allows ROM-DOS system files to be transferred to hard drive or floppy.                          |  |
| \CONFIG          | <i>MAXICONF.EXE</i>                      | This full screen menu program builds a configuration file that is downloaded to the terminal.   |  |
|                  | <i>CONF2.DOC</i><br><i>TRANSFER.EXE</i>  |   |  |
|                  | <i>MAXILOAD.EXE</i>                      | Installed on the terminal's C: drive, this utility software helps program the bar code decoder. |  |
|                  | <i>DEFAULT.DFG</i>                       | Default configuration file for <i>MAXICONF</i>  |  |
|                  | <i>DEFAULT.CFG</i>                       | Default configuration file for <i>MAXILOAD</i>  |  |
| \6540            | <i>AUTOEXEC.BAT</i><br><i>CONFIG.SYS</i> | System boot file.   |  |
|                  | <i>COLOR.COM</i><br><i>MONO.COM</i>      | Utility program to change the mode of display emulation.  |  |
|                  | <i>COMMAND.COM</i>                       | Command interpreter.  |  |
|                  | <i>CURSOR.EXE</i><br><i>LTDSPLY.COM</i>  | Utility program to change the cursor to a block<br>Display driver utility.                      |  |
|                  | <i>RESET.COM</i>                         | Software program to reset the terminal from an application.                                     |  |
|                  | <i>SSDRIVE.EXE</i>                       | Solid-State Disk and flash driver utility.  |  |
|                  | <i>SSDRV.SYS</i>                         | Solid-State Disk and flash for <i>CONFIG.SYS</i> .  |  |
|                  | <i>TRANSFER.EXE</i>                      | Utility to move files from one PC to another.   |  |
|                  | \ROM-DOS                                 | All ROM-DOS Commands  | External ROM-DOS commands described in Section 8. You can install the commands on the terminal at your discretion. |



## Appendix C

# Rear Panel Connector Pin Assignments

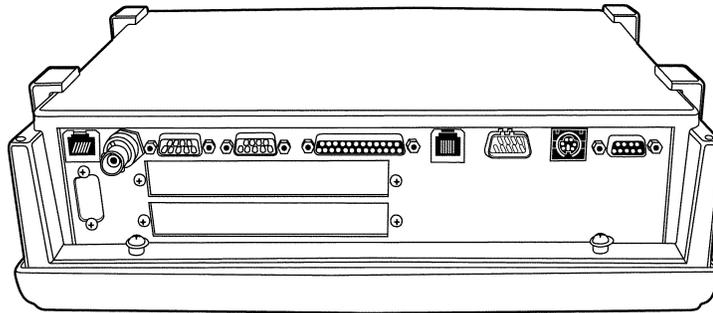


Figure C-1

See Figure 2-1 on page 2-1 to identify individual connectors.

### Power Supply

Connector Style 9-Pin Socket



| Pin # | Signal |
|-------|--------|
| 1     | N/C    |
| 2     | N/C    |
| 3     | N/C    |
| 4     | N/C    |
| 5     | N/C    |
| 6     | +5V    |
| 7     | GND    |
| 8     | GND    |
| 9     | +5 v   |

## Laser Scanner Port

Connector Style 9-Pin Plug



| Pin # | Laser Scanner | Used As Wand |
|-------|---------------|--------------|
| 1     | Laser SOS     | N/C          |
| 2     | Laser Data    | N/C          |
| 3     | Laser LED     | N/C          |
| 4     | N/C           | Wand Data    |
| 5     | Laser Trigger | N/C          |
| 6     | Laser On      | N/C          |
| 7     | GND           | GND          |
| 8     | GND           | GND          |
| 9     | +5 v          | +5 v         |

## Bar Code Wand Port

Connector PS/2 Style 6-Pin Modular Port



| Pin # | Wand | Used As Auxiliary RS-232 or Magnetic Stripe Reader |
|-------|------|--|
| 1     | Data | Data   |
| 2     | N/C  | CTS  |
| 3     | N/C  | RTS  |
| 4     | N/C  | N/C  |
| 5     | +5 v | +5 v   |
| 6     | GND  | GND  |

## External Keyboard Port

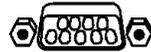
Connector Style 6-Pin Mini-DIN Socket



| Pin # | Keyboard       | Used As I/O Signals       |
|-------|----------------|---------------------------|
| 1     | Keyboard Clock | Output 2                  |
| 2     | GND            | GND                       |
| 3     | Keyboard Data  | Input 2                   |
| 4     | N/C            | Good Read/External Beeper |
| 5     | +5 v           | +5 v                      |
| 6     | N/C            | Input 1                   |

## COM1 and COM2 Ports

Connector Style 9-Pin Plug



| Pin # | Signals |
|-------|---------|
| 1     | DCD     |
| 2     | RXD     |
| 3     | TXD     |
| 4     | DTR     |
| 5     | GND     |
| 6     | DSR     |
| 7     | RTS     |
| 8     | CTS     |
| 9     | RI      |

## LPT1 Port

Connector Style 25-Pin Socket



| Pin # | Signal      |
|-------|-------------|
| 1     | STROBE      |
| 2     | DATA 0      |
| 3     | DATA 1      |
| 4     | DATA 2      |
| 5     | DATA 3      |
| 6     | DATA 4      |
| 7     | DATA 5      |
| 8     | DATA 6      |
| 9     | DATA 7      |
| 10    | ACK         |
| 11    | BUSY        |
| 12    | PAPER EMPTY |
| 13    | SLCT        |
| 14    | AUTO FEED   |
| 15    | ERROR       |
| 16    | INIT        |
| 17    | SLCT IN     |
| 18-25 | GND         |

## 10BASE-T Port

Connector Style RJ-45 8-Pin Modular Male



| Pin # | Signal |
|-------|--------|
| 1     | TXP    |
| 2     | TXN    |
| 3     | RXP    |
| 4     | N/C    |
| 5     | N/C    |
| 6     | RXN    |
| 7     | N/C    |
| 8     | N/C    |

## 10BASE2 Port

Connector Style BNC Connector



| Pin    | Signal |
|--------|--------|
| Center | Data   |
| Shield | GND    |

## Configuration Bar Codes

You can configure the built-in bar code decoder in two ways:

1. Using *MAXICONF2*, a menu driven program; refer to Section 9 for more information, or
2. Using the configuration bar codes; use the following procedure for configuration.
  - a) The terminal must be powered on to perform the configuration.
  - b) From the Configuration Commands chart scan the command **CONFIGURATION** (if you intend to save your selections in the terminal's permanent memory) or **MODIFY PARAMETERS** (if you are testing your selections).
  - c) Select one of the families of parameters by turning to the appropriate page and scanning the **SELECT FAMILY** bar code.
  - d) Within the family, scan the bar code of the parameter to change, then the option to select. Repeat this step for other parameters within the same family.
  - e) When you have changed all the parameters you wish within a family, scan the **END SELECTION** label.
  - f) Repeat steps c, d, and e for each family that you wish to change.
  - g) When you have finished changing all families of parameters, scan the **END CONFIGURATION** or **END MODIFICATION** command label from the Configuration Command menu.

Note: The terminal is shipped with all parameters set to their default values. These are marked with an asterisk (\*) in the bar code setup menus.

## **Configuration Commands**

Configuration



End Configuration



Modify Parameters



End Modification



Store in Memory



Recall Stored Parameters



Return to Default Parameters



## ***Family A: Audio Management and Data Transmission***

Select Family A



End Selection



## ***Audio Management***

Bar Code Reader Speaker Tone



Pitch Higher



Pitch Lower



Seven different levels are available; the default level is 4. By scanning “Pitch Higher” or “Pitch Lower” successively, the pitch is raised or lowered one level until you reach the maximum or minimum level.

Speaker Volume



Louder



Softer



Seven different levels are available; the default level is 4. By scanning “louder” or “softer” successively, the volume is raised or lowered until you reach the maximum or minimum level.

Beeper Port Identification



\* All Ports



RJ-12 Port Wand



DB-9 Port (Wand)



DB-9 Port (Undecoded Laser)



Speaker Tones

1 Beep - high



1 Beep - low



2 Beeps - high-low



2 Beeps - low-high



To assign a two-beep tone sequence to a scanner port, first scan the bar code corresponding to the port to be identified, then the desired tone sequence for that port.

Preamble



\* All Ports



RJ-12 Port



DB-9 Port (Wand)



DB-9 Port (Undecoded Laser)



Postamble



\* All Ports



RJ-12 Port



DB-9 Port (Wand)



DB-9 Port (Undecoded Laser)



After Scanning each port selection for the preamble or postamble, scan one or more characters from the full ASCII chart on page D-18, then scan End Selection.

Note: To leave Family A after setting a preamble or postamble, you must scan the End Selection label a second time.

## Family B: Bar Code Formats

Select Family B



End Selection



Read the bar code(s) corresponding to the code formats to be activated.

Code 39



Interleaved 2 of 5



Standard 2 of 5



Codabar/Ames



UPC/EAN



Code 128



Code 93



MSI/Plessey



\*Code39 + Codabar

+ UPC/EAN

+ Interleaved 2 of 5

+ Code 128



**Family C: Code 39 Parameters**

Select Family C



End Selection



Character Set



\* Full ASCII



Standard 43 Characters



Start/Stop



Transmitted



\* Not Transmitted



Check Digit



Mod 43 calculated and transmitted



Mod 43 calculated but not transmitted



CIP transmitted



CIP not transmitted



|                          |  |   |
|--------------------------|--|---|
|                          | Italian transmitted  |    |
|                          | Italian not transmitted  |    |
|                          | * Not used   |    |
| HIBC Format              |  |    |
|                          | Active   |    |
|                          | * Not Active   |    |
| Multiread                |  |    |
|                          | Activated by leading space   |    |
|                          | Activated by user selected character   |   |
|                          | Scan a character from the full ASCII test chart on page D-18.                  |   |
|                          | * Not Active   |  |
| Full ASCII Control Codes |  |  |
|                          | Active in separate label of two characters, and embedded in a code             |  |
|                          | * Active in separate label, and embedded in a code if preceded by a hyphen (-) |  |
|                          | Active in separate label of two characters only                                |  |
|                          | Not Active   |  |

## Family D: Interleaved 2 of 5 Parameters

Select Family D



End Selection



Number of Characters



\* Even Number



Odd Number



Odd Number Suppressed Character



\* First character suppressed



Last character suppressed



Code Length



\* Fixed for a single length; first read fixes length



Fixed for two lengths; first two different lengths read fix lengths



Fixed for 3 lengths; first three different lengths read fix lengths



Variable length



Fixed for 1 length, user fixes length



Fixed for 2 lengths, user fixes lengths



Fixed for 3 lengths, user fixes lengths



If you selected one of the last three choices for code length, you must enter the length by scanning digits using the bar codes in the full ASCII chart on page D-18. Scan End Selection after each length.

Length 1



Compose the desired length

Length 2



Compose the desired length

Length 3



Compose the desired length

Check Digit



Calculated and transmitted



Calculated but not transmitted



\* Not Calculated



**Family F: UPC/EAN Parameters**

Select Family G



End Selection



Select Formats



UPC A



Scan the bar code(s)  
for each format  
to be activated.

UPC E



Scan *End Selection*  
when all desired formats  
are specified.

EAN 8



EAN 13



\* All Formats



Add-on Digits



\* Not required, but transmitted if present



Required and transmitted



Not required and not transmitted



Leading Digit UPC A



\* Transmitted



Not Transmitted



Check Digit UPC A



\* Transmitted



Not transmitted



Leading Digit UPC E



\* Transmitted



Not transmitted



Check Digit UPC E



Transmitted



\* Not Transmitted



UPC E = UPC A



Active



\* Not Active



UPC A = EAN 13



Active



\* Not Active



## Family G: UPC/EAN Parameters

Select Family G



End Selection



Select Formats



UPC A



Scan the bar code(s)  
for each format to activate.

UPC E



Scan *End Selection*  
when all desired formats  
are specified.

EAN 8



EAN 13



\* All Formats



Add-on Digits



\* Not required, but transmitted if present



Required and transmitted



Not required and not transmitted



Leading Digit UPC A



\* Transmitted



Not Transmitted



Check Digit UPC A



\* Transmitted



Not transmitted



Leading Digit UPC E



\* Transmitted



Not transmitted



Check Digit UPC E



Transmitted



\* Not Transmitted



UPC E = UPC A



Active



\* Not Active



UPC A = EAN 13



Active



\* Not Active



**Family H: Parameters for Code 128, MSI, Plessey and Code 93**

Select Family H



End Selection



**Code 128**

Append Function (FNC 2)



Active



\* Not Active



**MSI**

Check Digit



\* Modulo 10



Double Modulo 10



Modulo 11



Not Calculated



Transmission of Check Digit



\* Transmitted



Not transmitted



## Plessey

Check Digit



Transmitted



\* Not Transmitted



## Code 93

Multiread



Activated by leading space



Activated by user selected character-- scan a character from the full ASCII test chart on page D-18.



\* Not Active



**Family I: Advanced Features**

Select Family I



End Selection



Code Type Identifier



Active-- Follow procedure below



\* Not Active

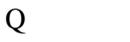
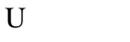


Scan a code format in Family B, then scan a single character from the full ASCII chart. The valid characters are A through O. Repeat this sequence for each code to be assigned an identifier. Scan End Selection after entering all desired code type identifiers. Scan End Selection a second time to exit this family.

## Full ASCII Bar Code Chart (HEX 00 - 2F)

|   |   |   |   |  |
|---|---|---|---|--|
| NUL   |   | DC3   |   | &  |
|    | LF  |    | GS  |                           |
|   |    |   |                           |  |
| SOH   |   | DC4   |   | '  |
|    | VT  |    | RS  |                           |
|   |    |   |                           |  |
| STX   |   | NAK   |   | (  |
|    | FF  |    | US  |                           |
|   |    |   |                           |  |
| ETX   |   | SYN   |   | )  |
|    | CR  |    | SP  |                           |
|   |    |   |                           |  |
| EOT   |   | ETB   |   | *  |
|    | SO  |    | !   |                           |
|   |   |   |                          |  |
| ENQ   |   | CAN   |   | +  |
|  | SI  |  | "   |  |
|   |  |   |  |  |
| ACK   |   | EM  |   | ,  |
|  | DLE   |  | #   |                         |
|   |  |   |                         |  |
| BEL   |   | SUB   |   | -  |
|  | DC1   |  | \$  |                         |
|   |  |   |                         |  |
| BS  |   | ESC   |   | .  |
|  | DC2   |  | %   |                         |
|   |  |   |                         |  |
| HT  |   | FS  |   | /  |
|  |   |  |   |                         |
|   |   |   |   |  |

**Full ASCII Bar Code Chart****(HEX 30-5F)**

|   |   |   |   |   |  |   |   |   |
|---|---|---|---|---|--|---|---|---|
| 0 |    | : |    | C |    | M |    | V |
|   |   |   |   |   |  |   |   |   |
| 1 |    | ; |    | D |    | N |    | W |
|   |   |   |   |   |  |   |   |   |
| 2 |    | < |    | E |    | O |    | X |
|   |   |   |   |   |  |   |   |   |
| 3 |    | = |    | F |    | P |    | Y |
|   |   |   |   |   |  |   |   |   |
| 4 |    | > |    | G |    | Q |    | Z |
|   |   |   |   |   |  |   |   |   |
| 5 |  | ? |  | H |  | R |  | [ |
|   |   |   |   |   |  |   |   |   |
| 6 |  | @ |  | I |  | S |  | \ |
|   |   |   |   |   |  |   |   |   |
| 7 |  | A |  | J |  | T |  | ] |
|   |   |   |   |   |  |   |   |   |
| 8 |  | B |  | K |  | U |  | ^ |
|   |   |   |   |   |  |   |   |   |
| 9 |  | _ |  | L |  | - |  | - |

**Full ASCII Bar Code Chart****(HEX 60-7F)**

|   |   |   |  |   |
|---|---|---|--|---|
| `   |   | m   |  | z   |
|    | g   |    | t  |    |
|   |    |   |    |   |
| a   |   | n   |  | {   |
|    | h   |    | u  |    |
|   |    |   |    |   |
| b   |   | o   |  |   |
|    | i   |    | v  |    |
|   |    |   |    |   |
| c   |   | p   |  | }   |
|    | j   |    | w  |    |
|   |    |   |    |   |
| d   |   | q   |  | ~   |
|    | k   |    | x  |    |
|   |   |   |   |   |
| e   |   | r   |  | DEL   |
|  | l   |  | y  |  |
|   |  |   |  |   |
| f   |   | s   |  |   |
|  |   |  |  |   |

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