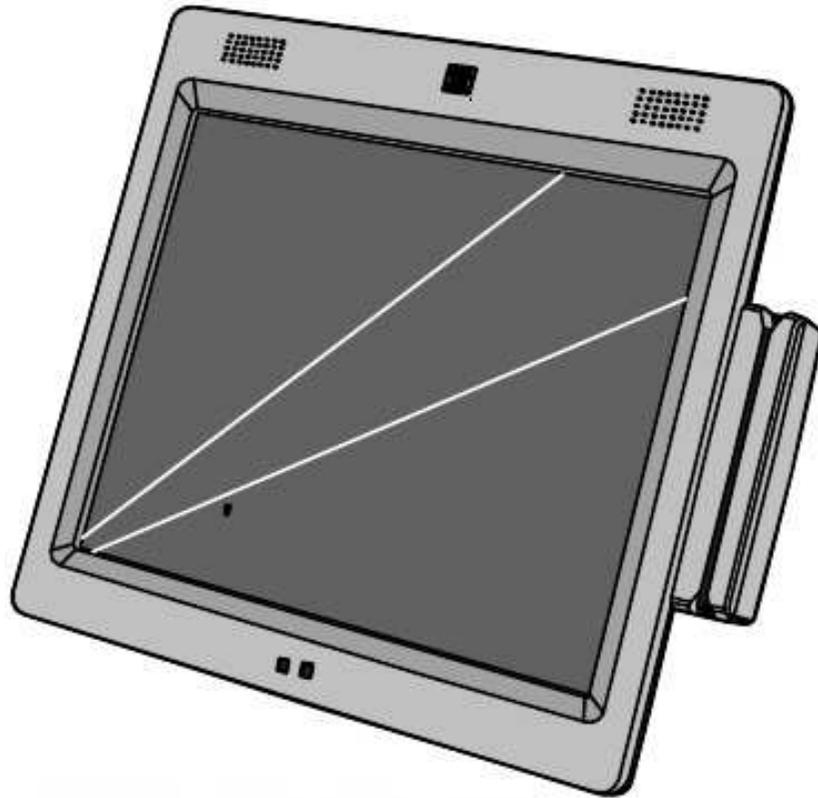


NCR Self Serv 60™ Kiosk (7409)

Release 1.2

User Guide



B005-0000-1889

Issue C

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To maintain the quality of our publications, we need your comments on the accuracy, clarity, organization, and value of this book.

Address correspondence to:

Manager, Information Solutions
NCR Corporation
Discovery Centre
3 Fulton Road
DD2 4SW

Internet Address:

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Preface

Audience

This book is written for hardware installer/service personnel, system integrators, and field engineers.

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Safety Requirements

The *NCR RealPOS 80XRT* conforms to all applicable legal requirements. To view the compliance statements see the *NCR RealPOS Terminals Safety and Regulatory Statements* (B005-0000-1589).

The on/off switch is a logic switch only. The AC line voltage primaries are live at all times when the power cord is connected. Therefore, disconnect the AC power cord before opening the unit to install features or service this terminal.

References

- *NCR SelfServ 60 Kiosk Site Preparation Guide (B005-0000-1890)*
- *NCR SelfServ 60 Kiosk Hardware Service Manual (B005-0000-1891)*
- *NCR SelfServ 60 Kiosk Parts Identification Manual (B005-0000-1892)*

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Revision Record

Issue	Date	Remarks
A	Jan 2009	First issue
B	July 2009	Release 1.1
C	Nov 2009	Release 1.2

Chapter 1: Product Overview

Introduction

The *NCR SelfServ 60 Kiosk* (also known as NCR 7409) is a light weight compact all-in-one kiosk that is designed to address the demanding hardware requirements for self-service kiosks. The NCR SelfServ 60 hardware can be used as the core component of a large multi-function kiosk or as a single compact device allowing for a point-of decision solution.

The NCR SelfServ 60 provides the latest in mobile PC technology with Intel® Mobile GM 45 Express chipset while maintaining the security, design and flexibility required for kiosk applications.

The base models offer a 17/19" Capacitive Touch or 17" Capacitive Touch with either a Celeron 575 or a Core 2 Duo T7500 processor and an 80GB SATA hard drive. The Celeron model comes standard with 1GB DDR2 memory and the Core2Duo model includes 2GB of DDR2 memory. A DVI-I port supports a secondary DVI or VGA display. A privacy filter model is available upon special request.

Optional MSR, wireless, and scanner kits can be included or integrated in the field.

Model Numbers

Product ID	Configuration Notes
7409-1700	17" LCD, Celeron 575, 1GB DDR2 Memory, Capacitive Touch, 80 GB HDD
7409-1701	17" LCD, Celeron 575, 1GB DDR2 Memory, Capacitive Touch, 80 GB HDD, Privacy Filter
7409-1705	17" LCD, Core2Duo T7500, 2GB DDR2 Memory, Capacitive Touch, 80 GB HDD
7409-1710	17" LCD, Celeron 575, 1GB DDR2 Memory, Resistive Touch, 80 GB HDD
7409-1900	19" LCD, Celeron 575, 1GB DDR2 Memory, Capacitive Touch, 80 GB HDD
7409-1905	19" LCD, Core2Duo T7500, 2GB DDR2 Memory, Capacitive Touch, 80 GB HDD

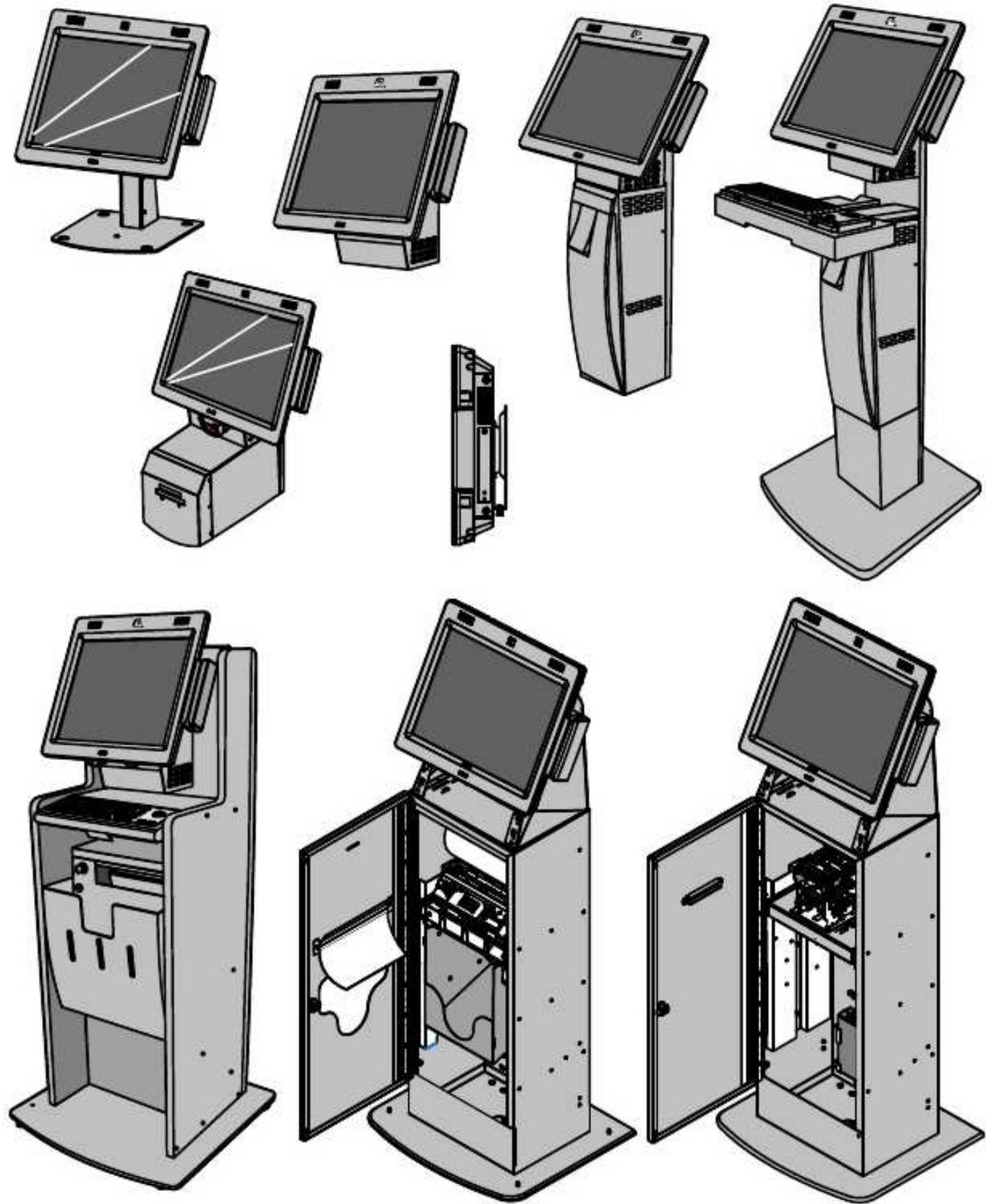
Note: The Black Bezel (7409-F100) must be ordered for front-mounted configurations. Front-mounted configurations include any of the standard NCR wall, table top, or pedestal mounts that use the VESA 75 or 100mm mounting holes on the back of the 7409.

Optional Mounting Configurations

VESA mounting (both 75mm and 100mm) capability is offered, which can accommodate mounts for wall, pole, table top, and pedestal configurations.

The NCR SelfServ 60 can also be mounted behind custom enclosures, countertops, or other cosmetic fascia plates.

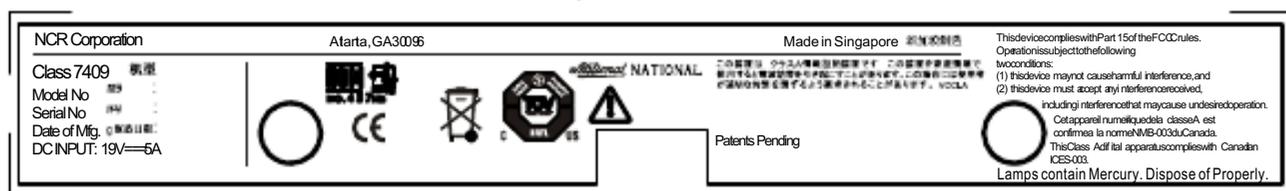
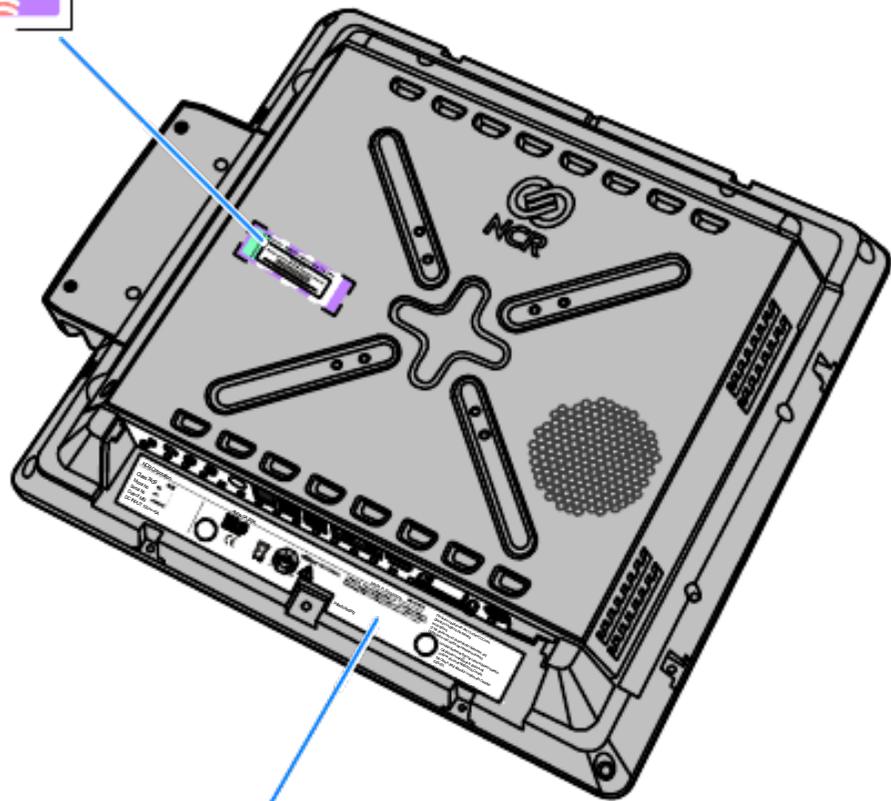
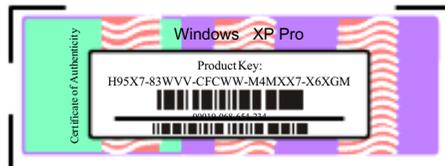
The NCR SelfServ 60 can be placed in virtually any kiosk environment.



Serial Number/Model Number Labels

The serial number and model number label is located under the Cable Cover. If the terminal was shipped with an Operating System pre-installed then there is also a Certificate of Authenticity label on the back of the Rear Cover.

Certificate of Authenticity Label



Product ID and Agency Certifications Label

Features

- Serial ATA (SATA) Hard Drive Interface
- High-speed Gigabit Ethernet
- Intel AMT 4.0 Remote Management
- Proven Capacitive Touch Technology
- High Brightness LCD (17/19")
- Stereo Speakers
- Motion Detection Sensor
- Dual Cash Drawer Support

Note: Connected through the cash drawer Kickout connector on the transaction printer. (No cash drawer port on the terminal). A second cash drawer can be connected using a 'Y' cable. A single *Open/Close* status signal is shared with both drawers. Therefore, it is not possible to determine which cash drawer is open.

- Two Powered RJ-45 Serial Ports (I/O Board)
- Six Type-A USB Connectors (I/O Board)
- Headphone Out (I/O Board)
- MIC Input (I/O Board)
- Line Out for Audio (ADA Connection for kiosk applications)
- Speed Controlled CPU Fan
- Integrated Signage System
- Power Supply
 - 19 V, 7.9 A External Power Brick
 - 150W Output Power
 - IEC 320 C6 Type AC inlet (3-prong mini IEC)

Motherboard

- Mobile Intel® GM 45 Express Chipset
- Scalable Mobile Processors
 - Intel® Core™2 Duo T7500
 - Intel® Celeron® 575
- Two SODIMM Sockets Supporting 667 – 800 MHz DDR2 Memory Modules
 - 1GB – 8GB
 - Dual Channel Support
- Intel Cantiga-GM Chipset
 - Intel Cantiga-GM Graphics Memory Controller Hub (GMCH)
 - Intel ICH9M I/O Controller Hub
- AMT
 - Full support for Intel AMT 4.0 including out of band functions
- LAN
 - Intel 82567 Platform LAN connect with 10/100/1000 Ethernet support LAN
- BIOS Hardware Support
 - BIOS resident in the 32MB SPI Flash device
 - Support for ACPI, SMBIOS
- Security
 - TPM 1.2 module integrated into ICH9M in chipset

Cabinet

- Major components are accessed by opening the Rear Cover.
- Motherboard is mounted on a sled.
- One tool free SATA hard drive
- Eight Visible LEDs
 - Lighted Logo
 - Power LED to Indicate Power On / Suspend Mode
 - Six diagnostic LEDs to indicate POST status and common failure modes (CPU temperature, Power Supply OK, CPU voltage OK)

Storage Media

- Primary 2.5" Hard Drive
- Solid State Drive – SATA interface (Optional)

Options

- 3-Track USB MSR (ISO)
- Flush Wall Mount
- Table Top Mount/Stand
- Fixed Angle Mount w/Power Supply Enclosure
- USB Wireless
- Omni-directional 1D/2D Bar Code Scanner

Remote Peripherals

- 7197 Thermal Receipt Printer
- 7402-K592 Self-Service Printer
- 7402-K596 Self-Service Printer
- 7404-K594 Wall-Mounted Receipt Printer w/Enclosure

Operating Systems

- Windows XP Professional
- Windows XP Embedded
- WePOS
- Server 3000

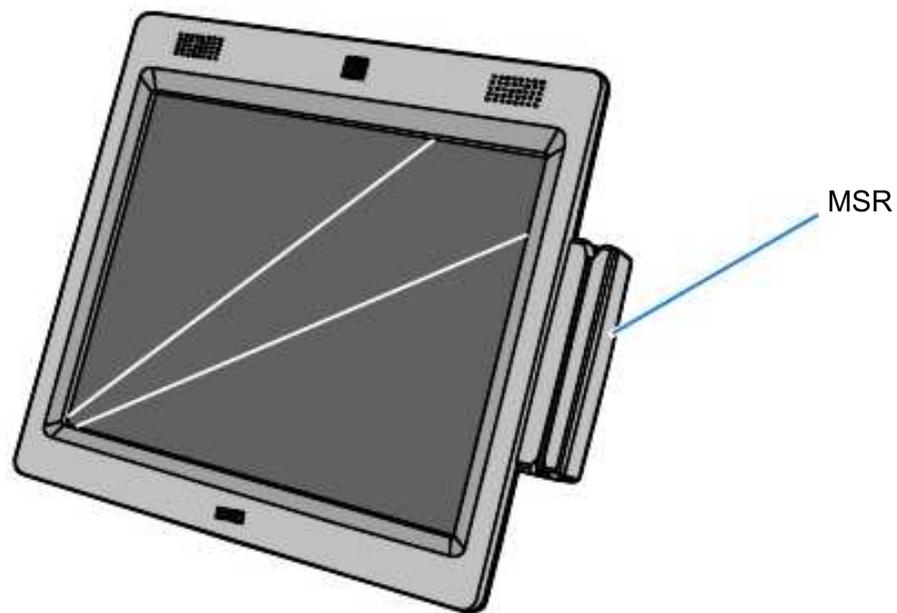
Note: Operating System images include Audio, Video, LAN, and USB Touch drivers.

Cash Drawer Support

The NCR SelfServ 60 controls the cash drawer through the cash drawer Kickout connector on the transaction printer. The terminal can be configured with 0, 1, or 2 cash drawers. The first drawer is attached to the terminal through a cable with an RJ-45 connector. A second drawer can be connected using a 'Y' cable.

Note: A single *Open/Close* status signal is shared with both drawers. Therefore, it is not possible to determine which cash drawer is open.

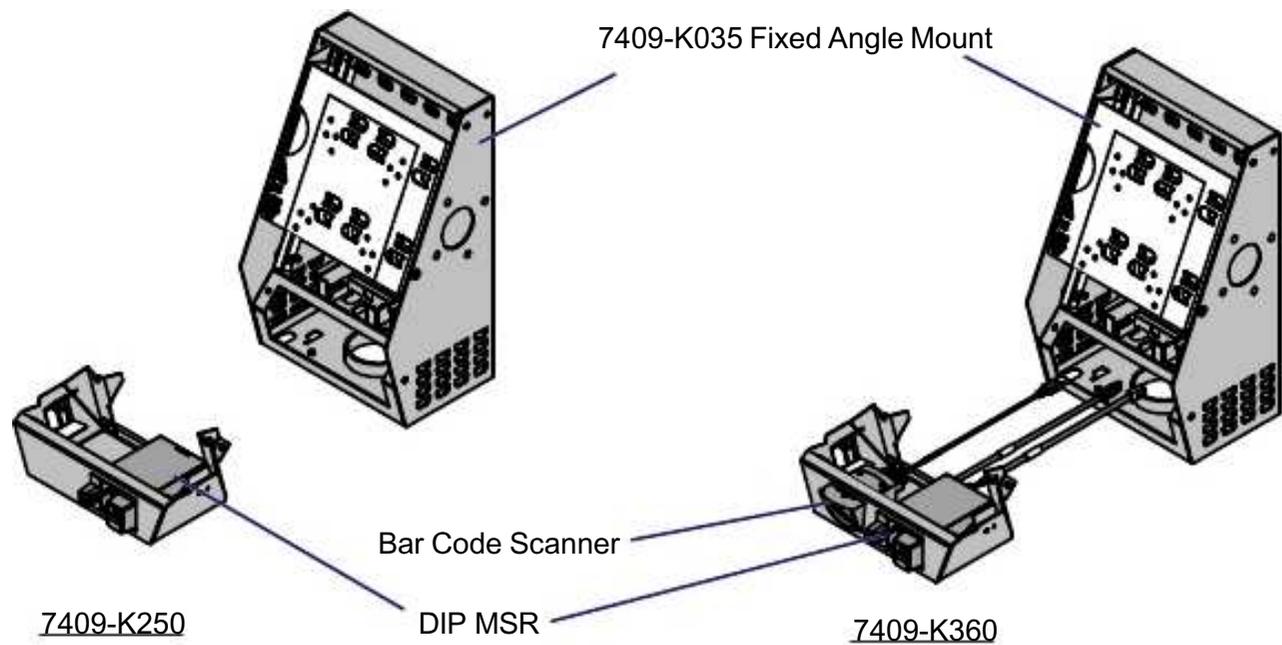
MSR



26640

The Magnetic Stripe Reader is a field installable kit. It can be installed on the side of the 7409 Bezel or on the front of the 7409-K035 Fixed Angle Mount. For installation instructions see the following.

- *7409-K223/224 MSR Kit Instructions.* Use these instructions when installing the scanner on the 7409 Bezel.
- *7409-K250 MSR Scanner Kit Instructions.* This kit provides a DIP Magnetic Stripe Reader for the 7409 terminal. The assembly installs on the front of the 7409-K035 Fixed Angle Mount.
- *7409-K360 MSR and Bar Code Scanner Kit Instructions.* This kit provides a DIP Magnetic Stripe Reader and Bar Code Scanner combination for the 7409 terminal. The assembly installs on the front of the 7409-K035 Fixed Angle Mount.



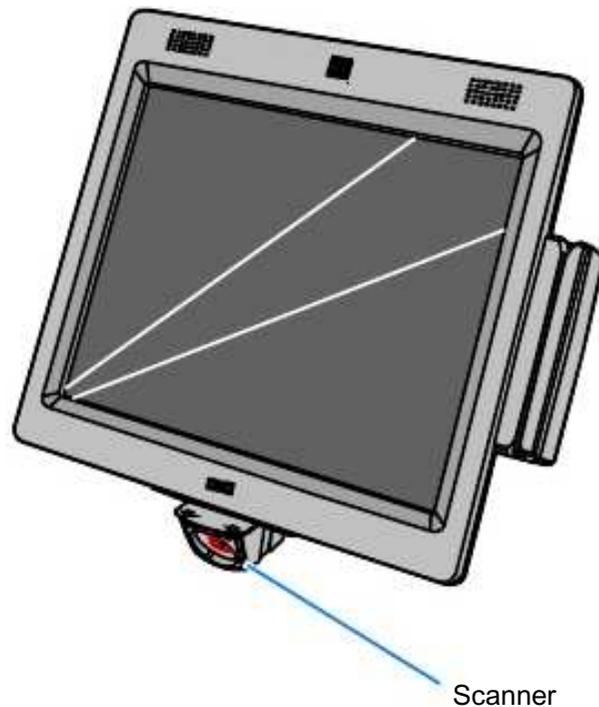
28017

For more information about using the scanner see the following:

- *NCR 7404/7409 Scanner Quick Reference Guide* (B005-0000-1792)
- *NCR 7404/7409 Scanner Implementation Guide* (B005-0000-1793)

The MSR interface supports a maximum of 3 tracks of magnetic stripe information for support of ISO format cards.

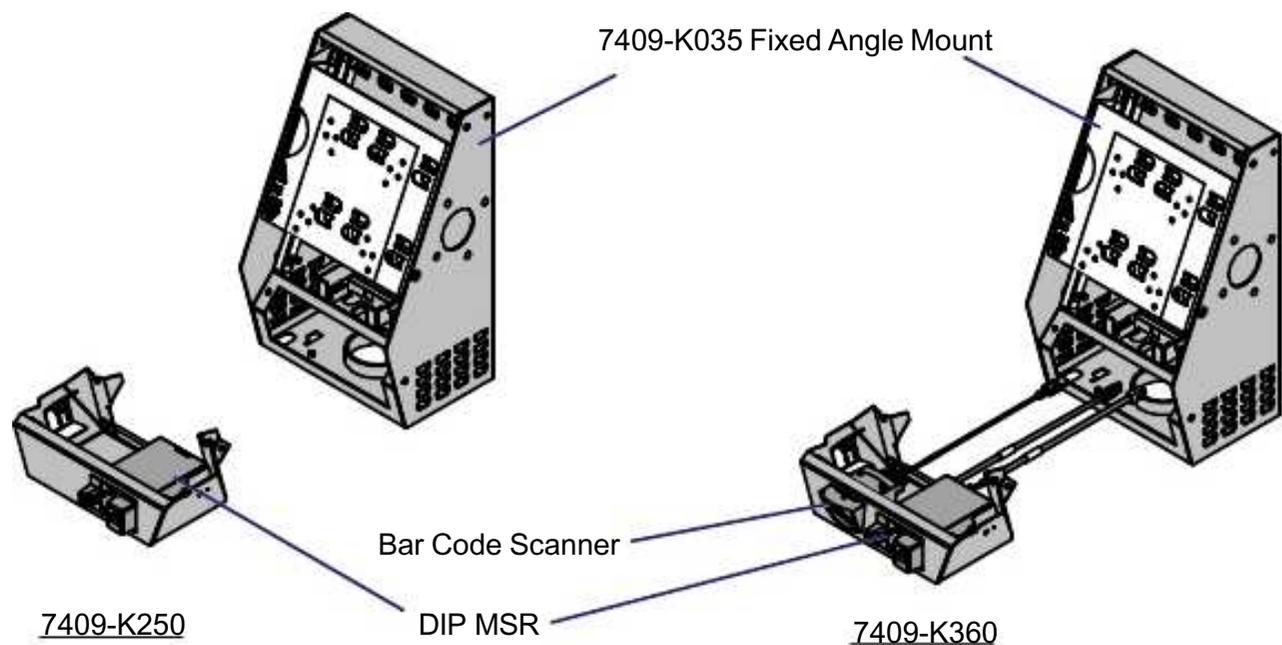
Bar Code Scanner



26641

The Bar Code Scanner is a field installable kit. It can be installed on the bottom center of the 7409 Bezel or on the front of the Fixed Angle Mount. For installation instructions see the following.

- *7409-K300 Bar Code Scanner Kit Instructions.* Use these instructions when installing the scanner on the 7409 Bezel.
- *2336-K638 Low Profile Wall Mount Kit Instructions.* These instructions show how to install the scanner on the 7409 and how to mount the unit on a wall using the Low Profile Wall Mount.
- *7409-K360 MSR and Bar Code Scanner Kit Instructions.* This kit provides a DIP Magnetic Stripe Reader and Bar Code Scanner combination for the 7409 terminal. The assembly installs on the front of the 7409-K035 Fixed Angle Mount.

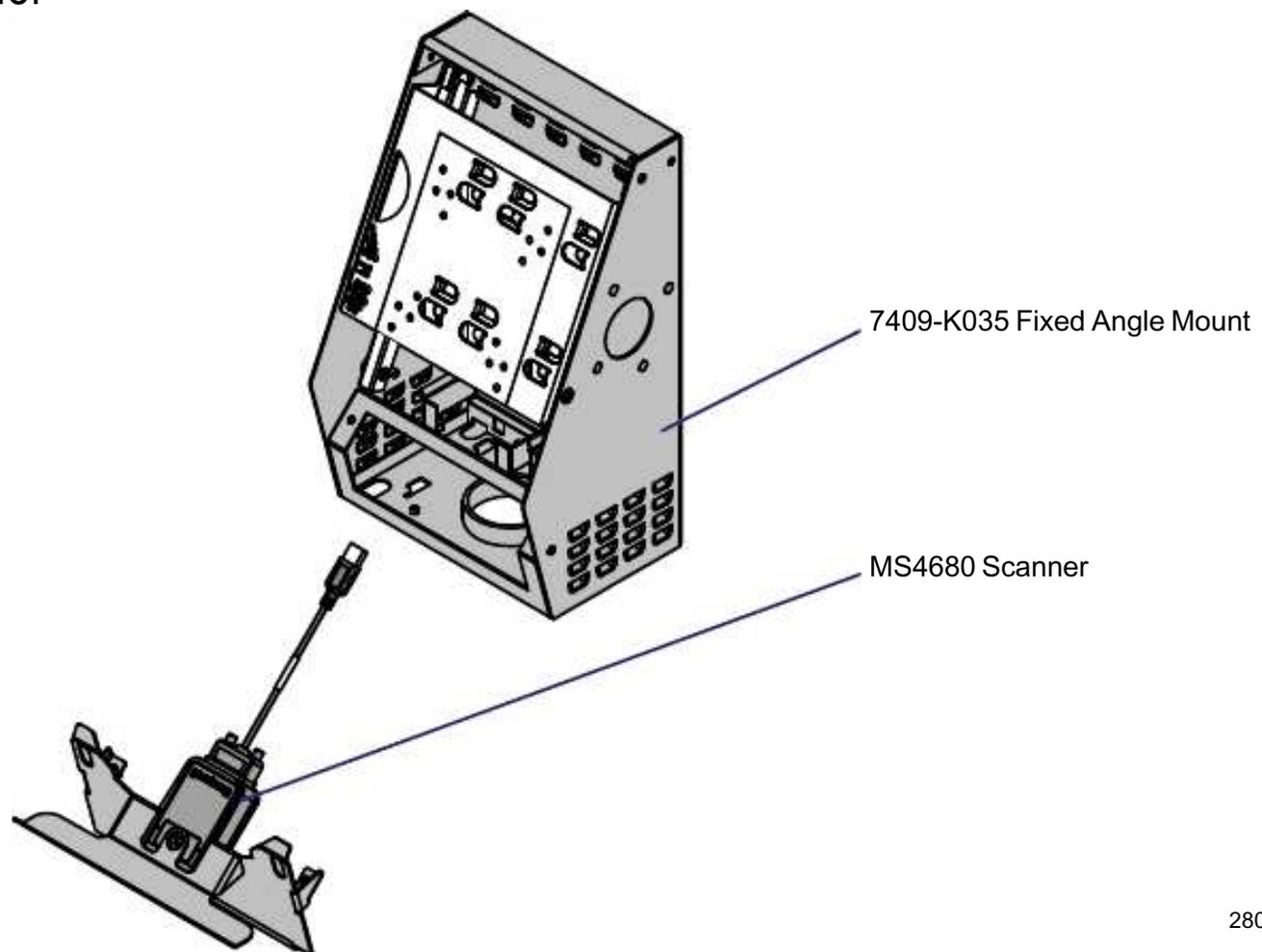


28017

For more information about using the scanner see the following:

- *NCR 7404/7409 Scanner Quick Reference Guide (B005-0000-1792)*
- *NCR 7404/7409 Scanner Implementation Guide (B005-0000-1793)*

Imaging Scanner



28014

This kit provides an Imaging Bar Code Scanner for the 7409. The assembly installs on the front of the 7409-K035 Fixed Angle Mount. For installation instructions see the *7409-K310 Bar Code Scanner Kit Instructions*.

For more information about using the scanner see the following:

- *Honeywell EasyID TotalFreedom Formatting Plug-In Guide (B005-0000-1942)*
- *MS4980 Imaging Scanner Illumination Configuration Guide (B005-0000-1971)*
- *MS4980 Imaging Scanner Installation and User's Guide (B005-0000-1972)*
- *MetroSelect Single Line Scanner Configuration Guide (B005-0000-1973)*

Scanner Configuration

You can configure the scanner using the *MetroSet2.exe* application tool or the configuration barcodes in the configuration guides.

The *MetroSet2.exe* tool is used to flash new firmware to the scanner or for printing bar codes that can be used to configure the scanner. When you use the tool select the model *MS4980* scanner under *Image Scanners*. The scanner interface is *USB*.

The *MetroSet2* tool can be downloaded from <http://www.ncr.com>.

- a. At this site, select the Support tab.
- b. Select Drivers and Patches → Retail Support Files → NCR RealPOS and SelfServ Peripherals (Firmware, Drivers, Utilities → Scanners/Scales
- c. Under *Handheld and Imbedded Scanners – Firmware and Tools* select Scan modules impeded in Kiosks.
- d. Select the *Honeywell MS4980* link.

Unattended Firmware Flashing

For unattended firmware flashing use the command line tool *AutoSet3.exe*. Contact the NCR Solution Manager of the kiosk for this tool.

Default Settings

The factory default settings for the MS4980 are listed below. The programming bar codes are located in the referenced documents.

MetroSelect Single Line Scanner Configuration Guide (B005-0000-1973)

Function	Bar Code Name
USB	Enable IBM OEM Scanner 4B00h Handheld – Full Speed USB
Standard Prefix Characters	Disable CR Suffix
	Disable LF Suffix

MS4980 Imaging Scanner Illumination Configuration Guide (B005-0000-1971)

Function	Bar Code Name
Illumination	Enable Idle Mode Illum
	Max Idle Illum Power

Honeywell EasyID TotalFreedom Formatting Plug-In Guide (B005-0000-1942)

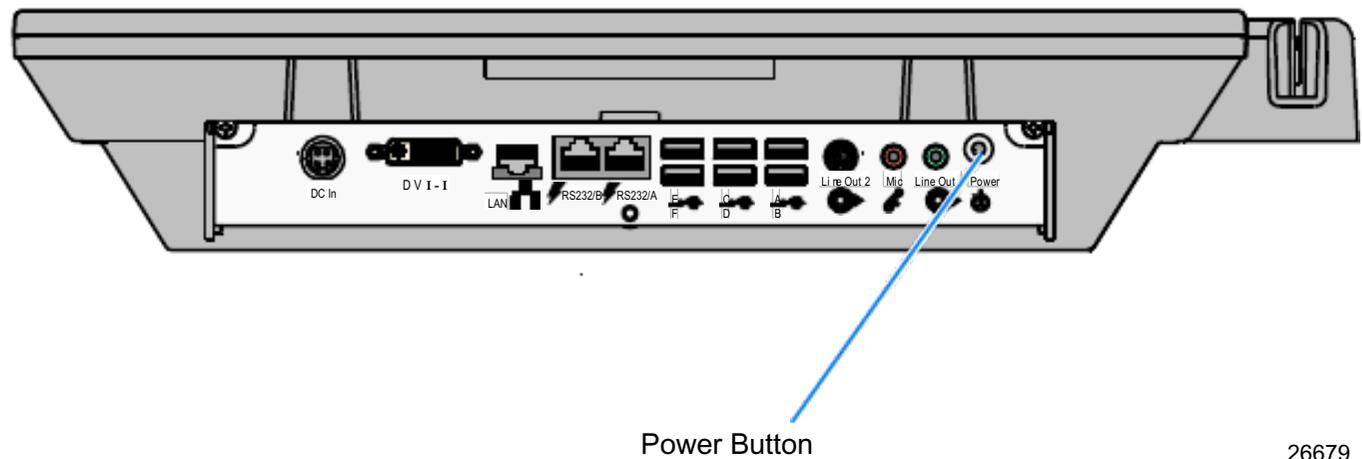
Function	Setting
EasyID Software	Enable EasyID
Standard Configuration	Start Standard Configuration
Data Field Options	First Name
	Last Name
	ID Number
	Street
	City
	State
	Postal Code
Date of Birth	

Operator Controls

Control Buttons

The only operator control is the On/Off Power Switch. It is located behind the Button Cover and can only be access by removing the cover.

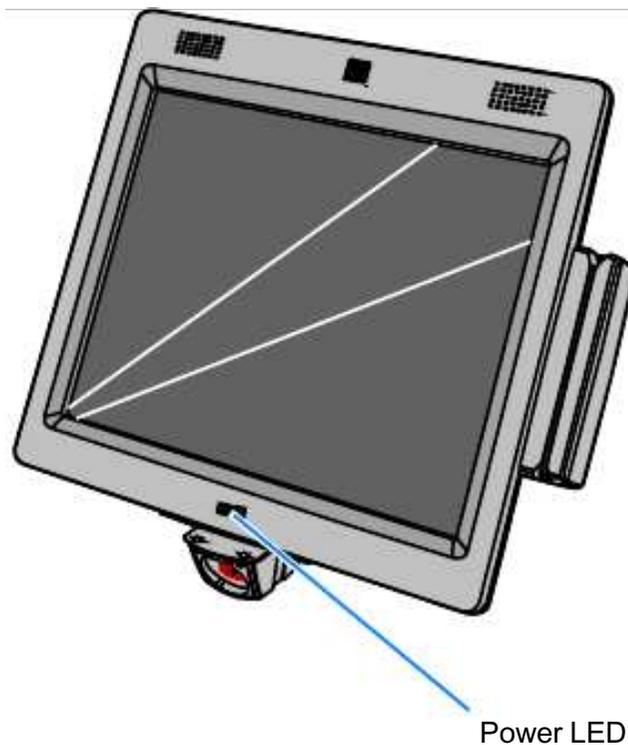
Note: The Power button may be set in the BIOS to turn the power off immediately or with a four second delay while pressing.



26679

LED Indicator

The LED on the front of the display indicates the terminal has power and is turned ON.



26642

Storage Options

Hard Disk Drive

A 2.5" notebook 80GB 5400 RPM hard disk drive is shipped with the 7409. The hard disk drive is easily accessed for service.

Disk Partitioning

All NCR SelfServ 60 Hard Disks with preloaded operating systems are created and released with a primary partition of a minimum 2GB, named C, which contains the specified operating system and files. A secondary partition may also be created utilizing various file systems based on the specific operating system ordered. These are outlined below:

Operating System	Primary Partition	Secondary Partition
Windows XP Embedded	Single NTFS	N/A
Windows XP Professional	Single NTFS	N/A

- Windows XP Embedded – A single NTFS without any partition is created that continues to grow as the physical size of the hard disk grows.
- Windows XP Professional – A single NTFS without any partition is created that continues to grow as the physical size of the hard drive grows.

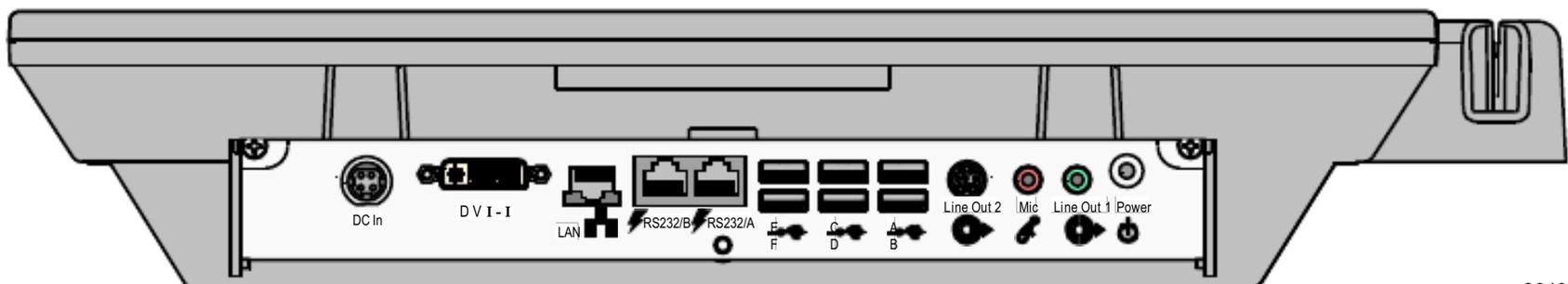
BIOS Memory

The system BIOS is based on Phoenix – AWARD Desktop BIOS v6.00PG.

- Supports PnP version 1.0a, APM version 1.2, PCI version 2.2, and ACPI version 1.0b. DMI (Desktop Management Interface) version 2.3 standard. SMBIOS (System Management BIOS) version 2.3.
- Supports Boot Block code, SMI code.
- Power on Self-Test – includes test of CPU, 8254 system timer, 8237 DMA controller, 8259 interrupt controller, video controller, video RAM, CRT interface lines, serial port, parallel port, keyboard controller, diskette drive and hard disk drive attached, and Audio configuration.
- Data constant initialization and interface of BIOS are compatible with IBM BIOS and MS-DOS.
- All BIOS routines can be used by user for controlling I/O device attached to subject product without caring for device address and operating features
- Supports device controller enable/disable control, device working mode control through the SETUP menu setting:
- Boot up device control
- Supports Multi-level system password security control. (System/Setup)
- Supports the multi-power on control by Power button, keyboard, mouse, PCI wake up, LAN wake up, Ring wake up, and RTC power on
- PnP/PCI Configuration
- Supports PC health monitor function for voltage, CPU internal temperature, system temperature detection and FAN speed control.

Connectivity

Peripherals are connected to the Peripheral I/O Panel, located behind the Cable Cover.



26434

RS-232

The RS-232 ports are RJ-45 connectors on the terminal. An adaptor cable is used to convert these ports to standard 9-pin “D” Shells. They can be configured for RI (Ring Indicator), +5V or +12V (All RS-232 terminal-powered NCR peripherals are 12V.)

The external 150 watt power supply supports multiple configured peripherals that are connected to the NCR SelfServ 60.

Example: An NCR SelfServ 60 configured with 1GB memory, MSR, DVD-ROM and MS-3207 Miniscan is easily supported by the power supply. However, it is possible to exceed the power capacity when multiple terminal-powered peripherals (that draw significant power) are configured. Please refer to the *NCR SelfServ 60 (7409) Power Budget Matrix* (B005-0000-1893) to make sure you do not exceed limitations.

Note: This file requires Microsoft Excel to run.

USB

The NCR SelfServ 60 includes 7 external USB 2.0 ports with the following characteristics:

- Plug and Play support
- USB V1.1 and 2.0 compatible
- Standard 5V USB

10/100/1000 Ethernet LAN

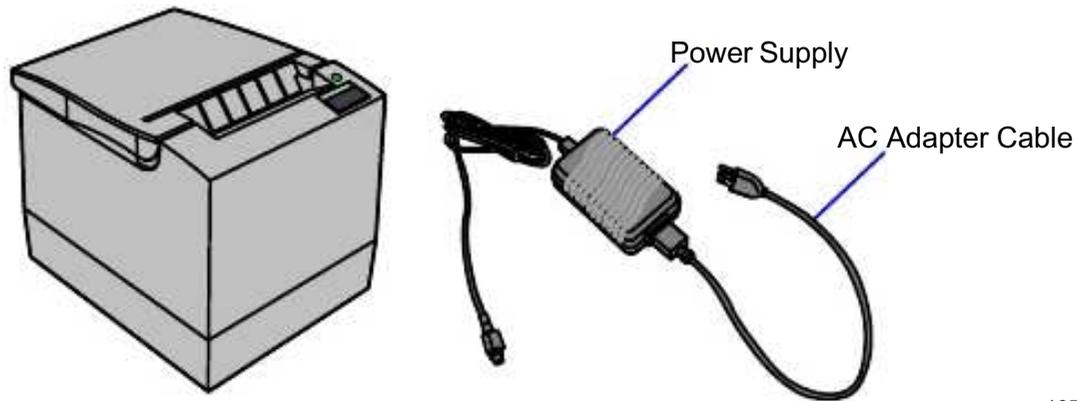
The NCR SelfServ 60 features an on-board Ethernet Controller and supports the following features:

- Auto sensing 10/100/1000 Base T Ethernet
- Wake On LAN
- PXE Boot

Printers

NCR 7197 Printer

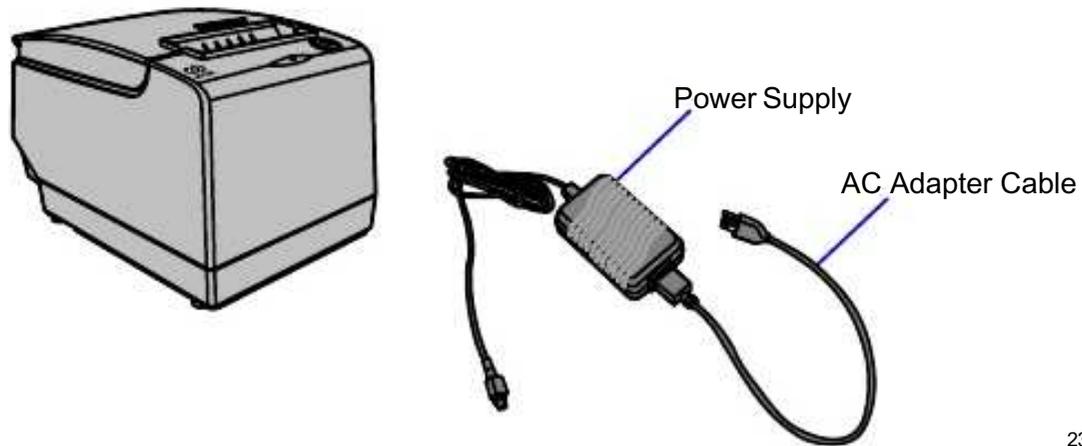
The NCR 7197 Printer is a fast, quiet, relatively small and very reliable receipt printer. It prints receipts and two-color printing. The printer communicates through an RS-232 or 7409 USB port and receives power from an external power supply.



19712b

NCR 7198 Printer

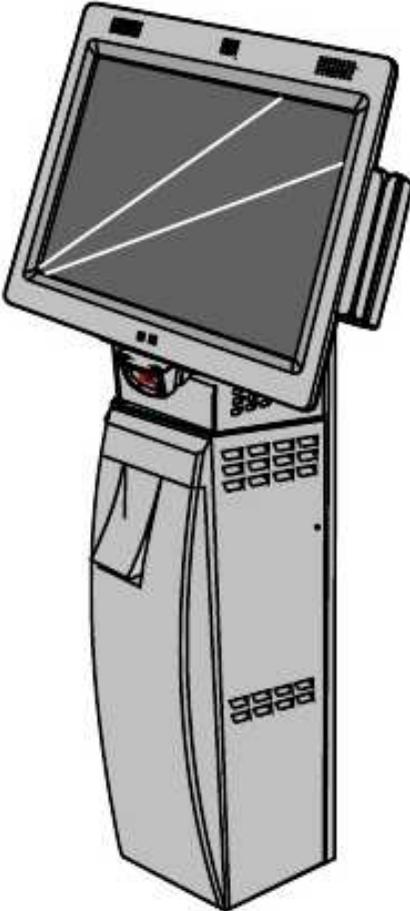
The 7198 printer is a fast, quiet, relatively small and very reliable printer capable of printing on the front and back of the receipt paper. The printer communicates through an RS-232 or 7409 USB port and receives power from an external power supply.



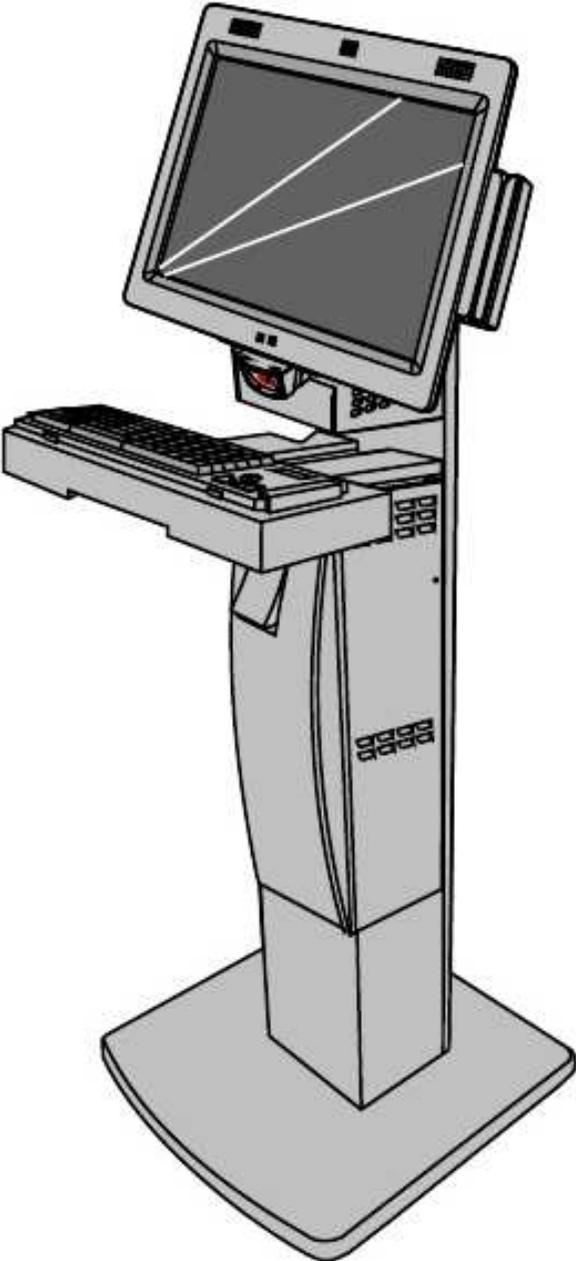
23833b

7402-K592 Self-Service Printer

The 7402-K592 can be mounted on a wall with the 7409 or installed in a pedestal. The printer communicates through an RS-232 or 7409 USB port and receives power from an external power supply.



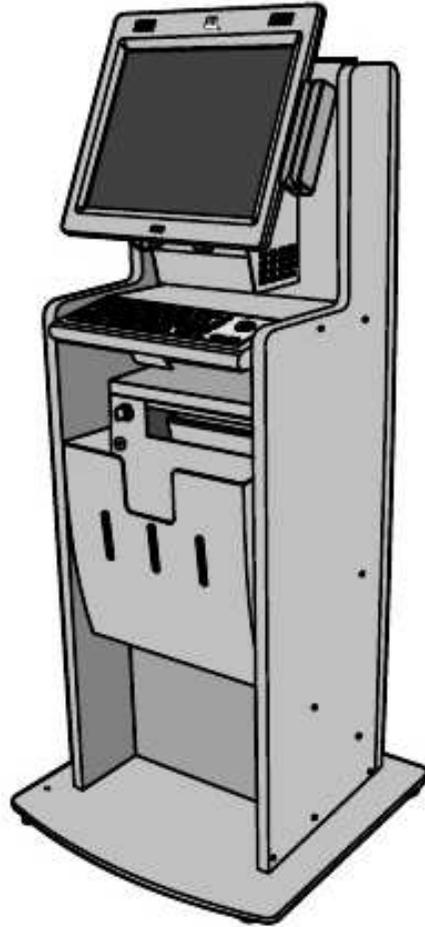
7402-K563 Wall Mount



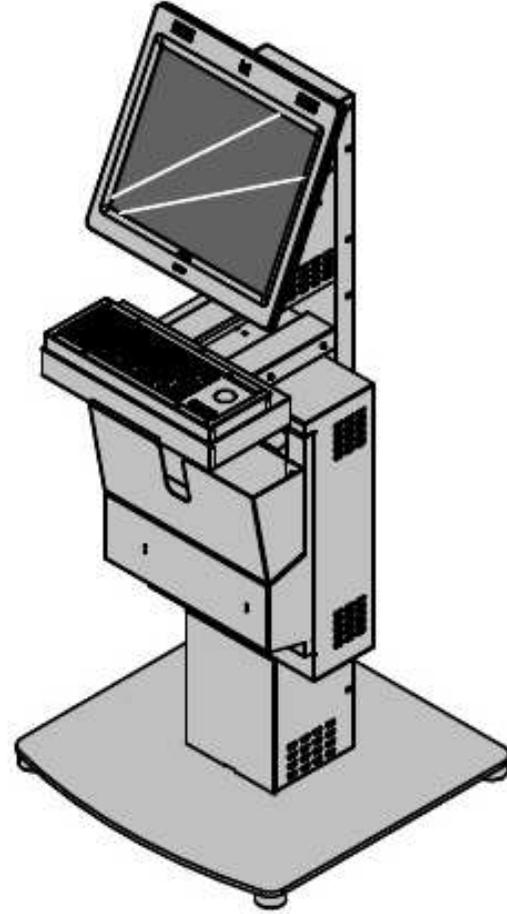
2336-K037 Pedestal
w/Wide Keyboard Shelf

7402-K596 Self-Service Printer

The 7402-K596 can be installed with the 7409 in a pedestal. The printer communicates through a 7409 USB port and receives power from an external power supply.



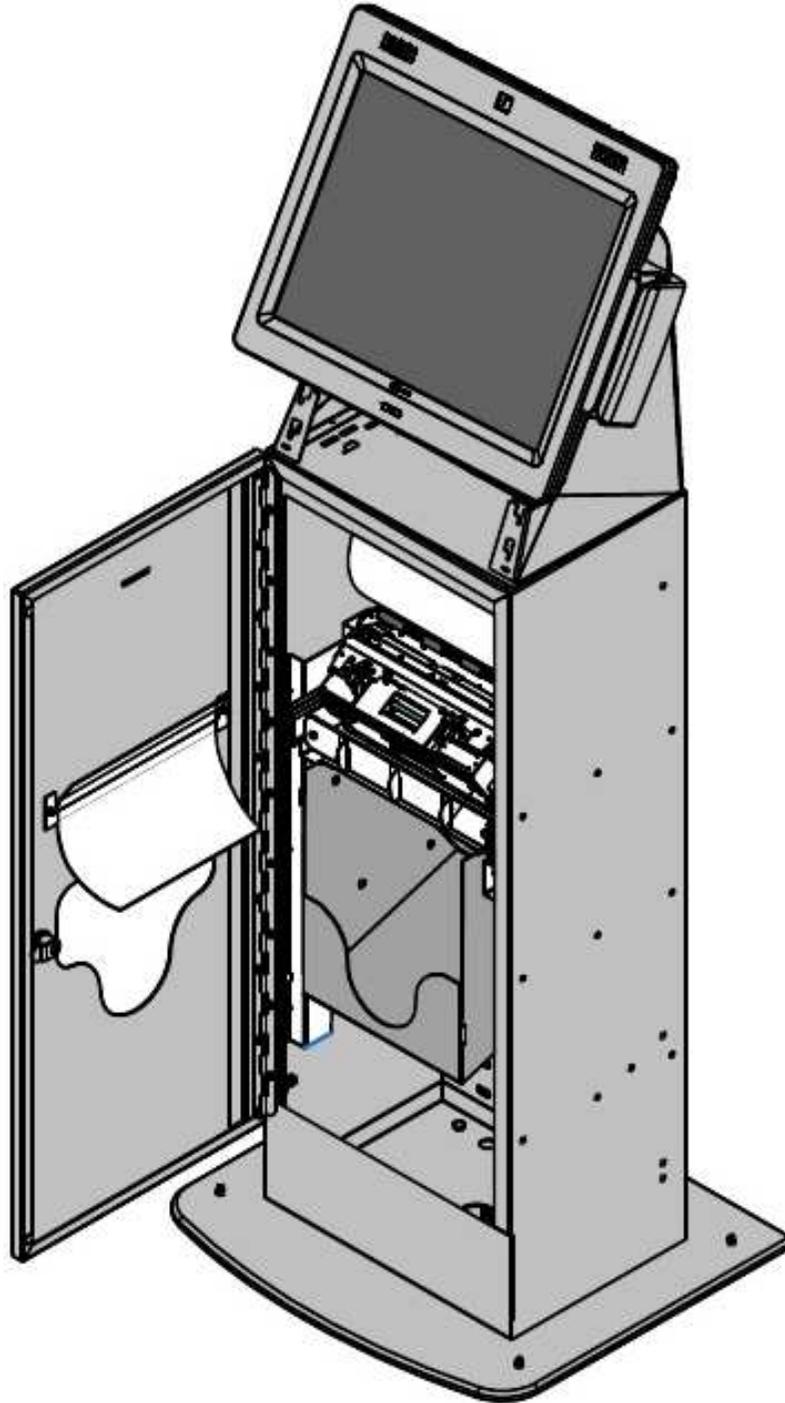
2336-K348 Pedestal
w/Wide Keyboard Shelf



2336-K037 Pedestal
w/Keyboard Shelf

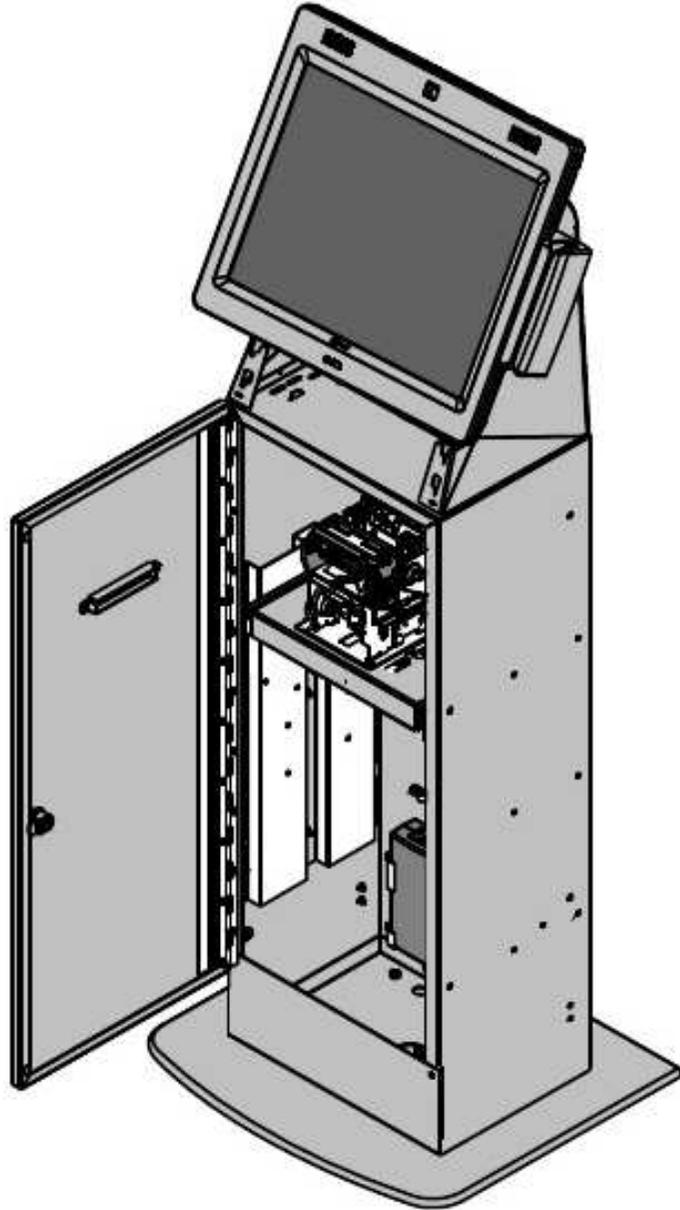
7409-K065 Full-Page Printer Pedestal

The 7409 can be installed on a 7409-K065 pedestal. The printer communicates through a 7409 USB port and receives power from an external power supply.



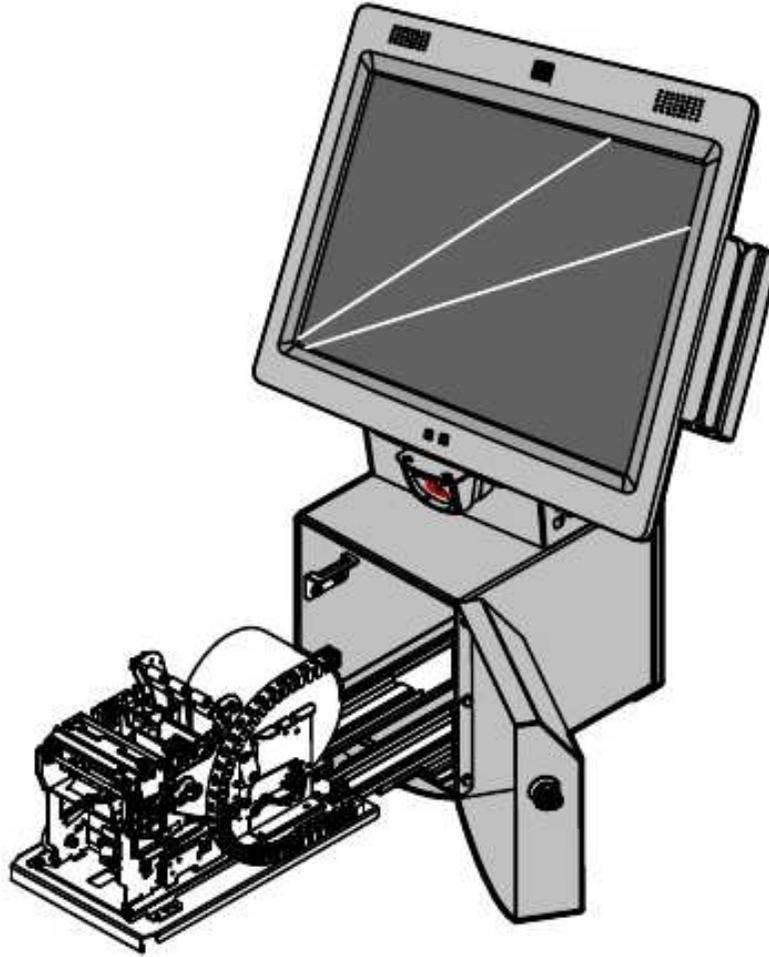
7409-K066 Receipt Printer Pedestal

The 7409 can be installed on a 7409-K066 pedestal. The printer communicates through a 7409 USB port and receives power from an external power supply.



7404-K594 Receipt Printer w/Enclosure

The 7404-K594 kit provides an enclosed receipt printer which mounts below the 7409 w/Fixed Angle Mount in a wall or pole mount configuration. The printer communicates through an RS-232 or 7409 USB port and receives power from an external power supply.



Power Management

The BIOS supports the supports the Advanced Configuration and Power Management Interface (ACPI) 3.0b specification. A key feature of ACPI is that the operating system, not the BIOS, configures and implements power management. The 7409 terminal supports the Global system power states defined by ACPI:

G3 Mechanical Off

A computer state that is entered and left by a mechanical means

Example: Turning off the system's power through the movement of a large red switch.

Various government agencies and countries require this operating mode. It is implied by the entry of this off state through a mechanical means that no electrical current is running through the circuitry and that it can be worked on without damaging the hardware or endangering service personnel. The OS must be restarted to return to the Working state. No hardware context is retained. Except for the real-time clock, power consumption is zero.

G2/S5 Soft Off

A computer state where the computer consumes a minimal amount of power. No user mode or system mode code is run. This state requires a large latency in order to return to the Working state. The system's context will not be preserved by the hardware. The system must be restarted to return to the Working state. It is not safe to disassemble the machine in this state.

G1 Sleeping

A computer state where the computer consumes a small amount of power, user mode threads are not being executed, and the system *appears* to be off (from an end user's perspective, the display is off, and so on). Latency for returning to the Working state varies on the wake environment selected prior to entry of this state (for example, whether the system should answer phone calls). Work can be resumed without rebooting the OS because large elements of system context are saved by the hardware and the rest by system software. It is not safe to disassemble the machine in this state.

G0 Working

A computer state where the system dispatches user mode (application) threads and they execute. In this state, peripheral devices (peripherals) are having their power state changed dynamically. The user can select, through some UI, various performance/power characteristics of the system to have the software optimize for performance or battery life. The system responds to external events in real time. It is not safe to disassemble the machine in this state.

ACPI Sleep States (S0 – S5)

Under the G1 sleeping state ACPI defines levels of system sleep state support. The 7409 supports the following sleeping states:

- S0: Normal Powered-On state
- S1 (Standby): The S1 sleeping state is a low wake latency sleeping state. In this state, no system context is lost (CPU or chip set) and hardware maintains all system contexts.

Note: The 7409 does not support S1 state. Turning off the backlight and hard drives provides the equivalent power savings (due to Intel's processor C-states feature) at nearly zero latency.

- S3 (Suspend to Ram): The S3 sleeping state is a low wake latency sleeping state. This state is similar to the S1 sleeping state except that the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor's reset vector after the wake event. In NCR systems, during S3, power is only provided to the on-board USB ports.

Note: When the terminal resumes from an S3 state, all the USB devices re-enumerate. This causes speaker tones as if they were disconnected and then reconnected. This does not present a problem and the USB devices will continue to operate correctly.

Requirements for S3 support:

- O/S must be built on a system with S3 enabled in the BIOS
- Some peripherals may not be S3 capable, which can prevent the system from entering S3 state.
- Currently, it is not recommended to use S3 on systems that are configured with a Celeron 575 CPU if Intel® Active Management Technology (AMT) is enabled. System lock ups can occur in this configuration.
- S4 (Suspend to Disk): The S4 state is the lowest power, longest wake latency sleeping state supported by ACPI. In order to reduce power to a minimum, it is assumed that the hardware platform has powered off all devices. Platform context is maintained.

Requirements for S4 support:

- O/S must be built on a system with S3 enabled in the BIOS
- Some peripherals may not be S4 capable, which can prevent the system from entering S4 state.

Reference the *ACPI Specification* for details.

Peripherals: ACPI defines power states for peripherals which are separate from the system power state. The device power states range from D0 (fully-on) to D3 (off) It is the responsibility of the driver developer for each peripheral to define and support the available power states.

Power State	S0 Working	S1 Standby	S2	S3 Suspend to RAM	S4 Hibernate	S5 Soft Off
Supported: Y / N	Y	N	N	Y	Y	Y
Description	Fully Functional	-Video back light off -HDD off -Cache Flush -CPU halted		-Video back light off -HDD off -Cache Flush -Memory in slow refresh -CPU halted	-Video back light off -HDD off -Cache flush -Memory data to HDD -CPU halted	OFF Note: Some devices remain powered by standby voltage (LAN, ME-AMT, USB) to allow wake-up
Power Consumption*	45 W	20 W		6 W	6 W	6 W
Power Circuits	On	On		Powered Down**	Powered Down**	Powered Down**
Wake Options:						
Power Switch	N/A	Y		Y	Y	Y
Touch	N/A	Y		Y	Y	N
Motion	N/A	Y		N	N	N
USB Keyboard	N/A	Y		Per O/S	Y	N
USB Mouse	N/A	Y		Per O/S	Y	N
LAN (magic packet)	N/A	Y		Y	Y	Y
RTC Alarm	N/A	Y		Y	Y	Y
Serial Port (RI)	N/A	Y		Y	Y	Y
* Power consumption based on the following configuration with mouse, keyboard, and LAN attached (17" LCD, Core2Duo T7500, one 2GB SODIMM). In S0, the unit is Idle at Windows Desktop.						
** Powered Down mode: Maintains small voltage to support wake circuits.						

Restrictions for USB Devices if Using S3 Standby

If S3 Standby state is desired, there are certain restrictions on connecting certain USB peripherals.

Restrictions on 7409 USB Ports:

If a Restricted Device is plugged into Port:	An S3 Wake Device can NOT be plugged into Port:
A	B
B	A
C	D
D	C
E	F
F	E

Note: The restrictions only apply if it is desired to put the unit in S3 standby state.

Restricted Devices

- Sankyo DIP MSR, ICM330-3R1395 (7409-K250, 7409-K360)
- Honeywell Imaging Scanner, MS4980 (7409-K310)
- Any USB device powered by an RS-232 port

USB Devices Capable of Waking the 7409 from an S3 State

- USB Keyboard
- USB Mouse

Reasons for the Restrictions

- USB ports share UHCI host controllers in the Southbridge.
- All external USB ports on the 7409 are powered by 5VSB and kept ON during S3 Standby.
- Some USB peripherals are powered by the RS-232 port (either 5V or 12V).

Ways Around this Issue

- Adhere to the Restriction Guidelines provided above.
- In Windows, disable the S3 Wake Device's ability to wake the unit from Standby.
- Power the Restricted Devices from an external power source instead of the RS-232 ports.

Wake on LAN Considerations

- The NCR Gold Drives are set up for Wake on LAN from *Magic Packet* (i.e. specific MAC address) and from *Directed Packet*. No driver configuration is required.
- The default is to only wake from standby. To be able to wake from Power Off change the BIOS setting *Chipset* → *South Bridge Configuration* → *Gbe Wake Up from S5* to *Enabled*.
- On many networks, waking on a *Directed Packet* wakes up the terminal immediately, or at unintended times. If you experience this you can turn it off in the Control Panel. *System* → *Hardware* tab → *Device Manager* → *Network Adapters* → *Intel 83567LM Gigabit Network Connection* → *Power Management* tab.
- If you use AMT to turn the terminal off, WOL will not turn it back on. The AMT power off function basically removes AC power, causing the LAN to lose the WOL state. You must perform an AMT power cycle to get the terminal back up.

Mounting Options

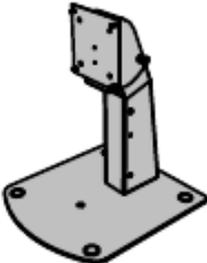
The 7409 can be mounted on many of the standard NCR kiosk mounts.

Fixed Angle Mount



7409-K035

Table Top Mount



7404-K034

Universal Mount Bracket



7402-K562

Wall Brackets



2336-K638



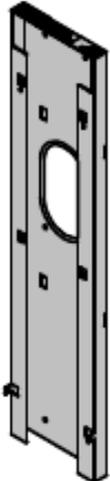
7409-K502



7402-K561

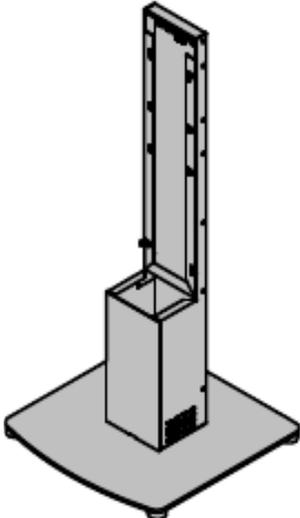


7402-K563

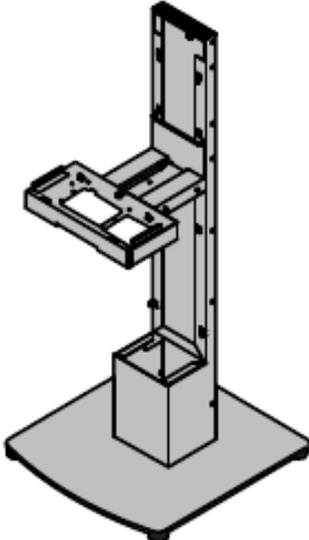


7402-K526

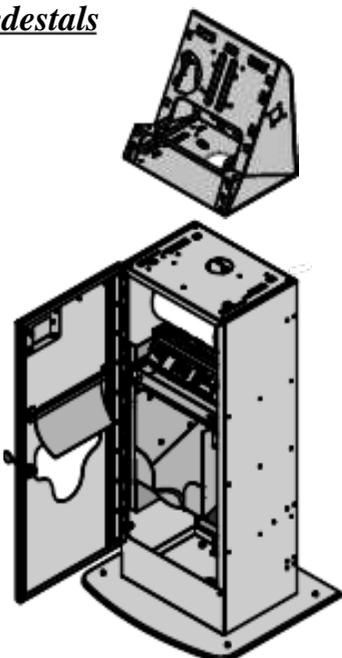
Floor Pedestals



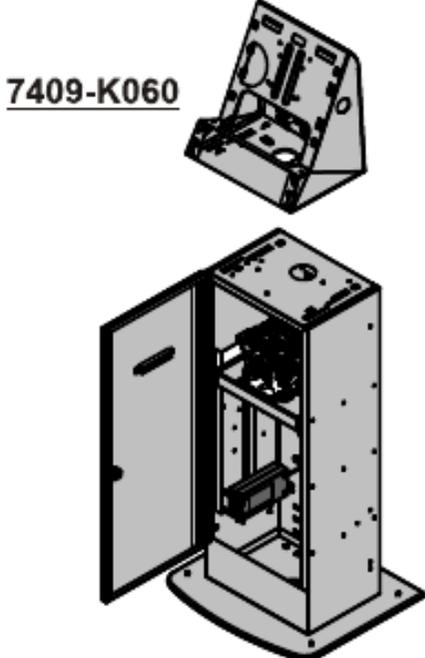
2336-K052



2336-K037



7409-K065



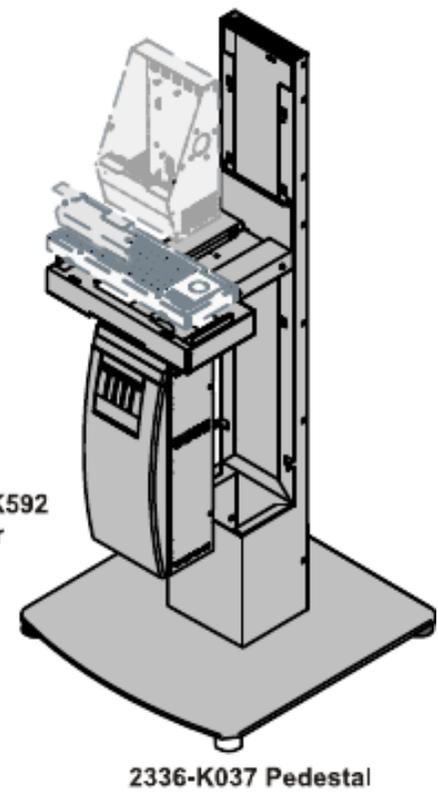
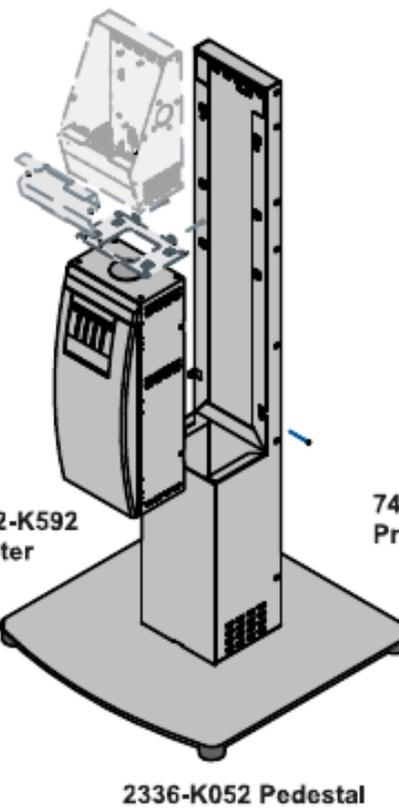
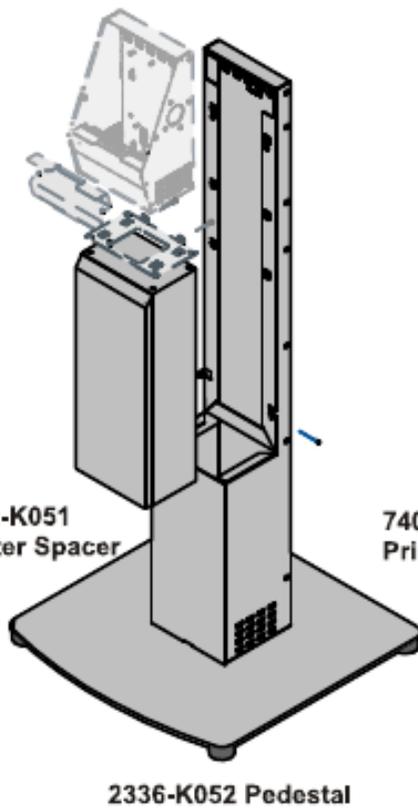
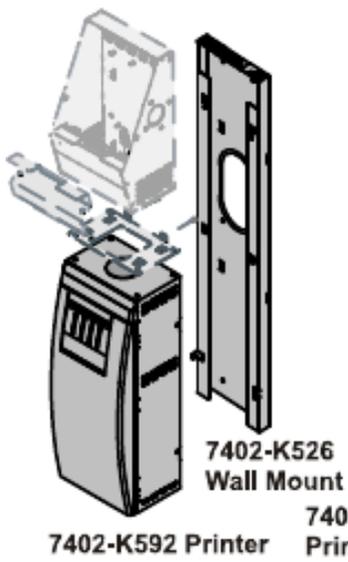
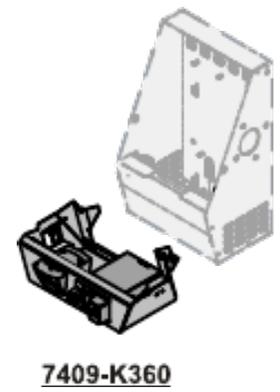
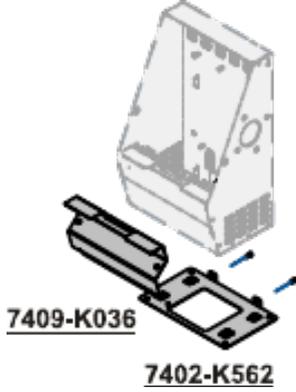
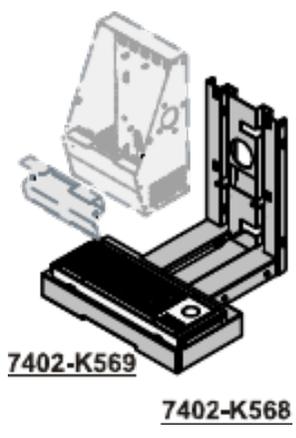
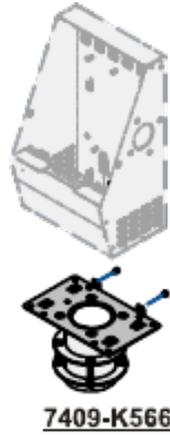
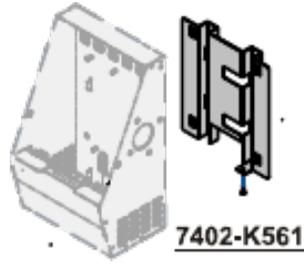
7409-K066

7409-K060

7409-K035 Mount Configurations

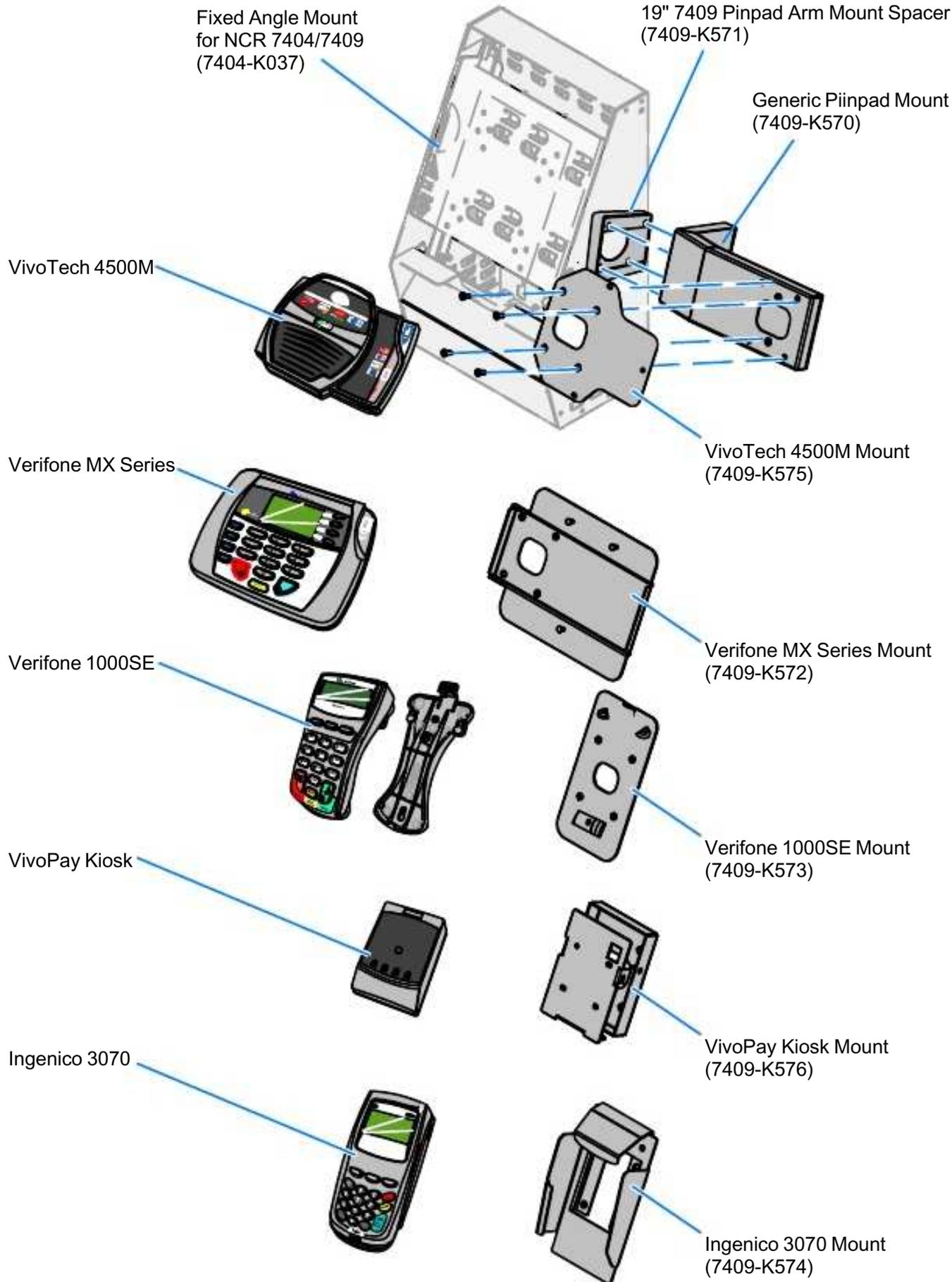
The Fixed Angle Mount is used in a large variety of configurations.

7409-K035 Mount Configurations



Pinpad Devices

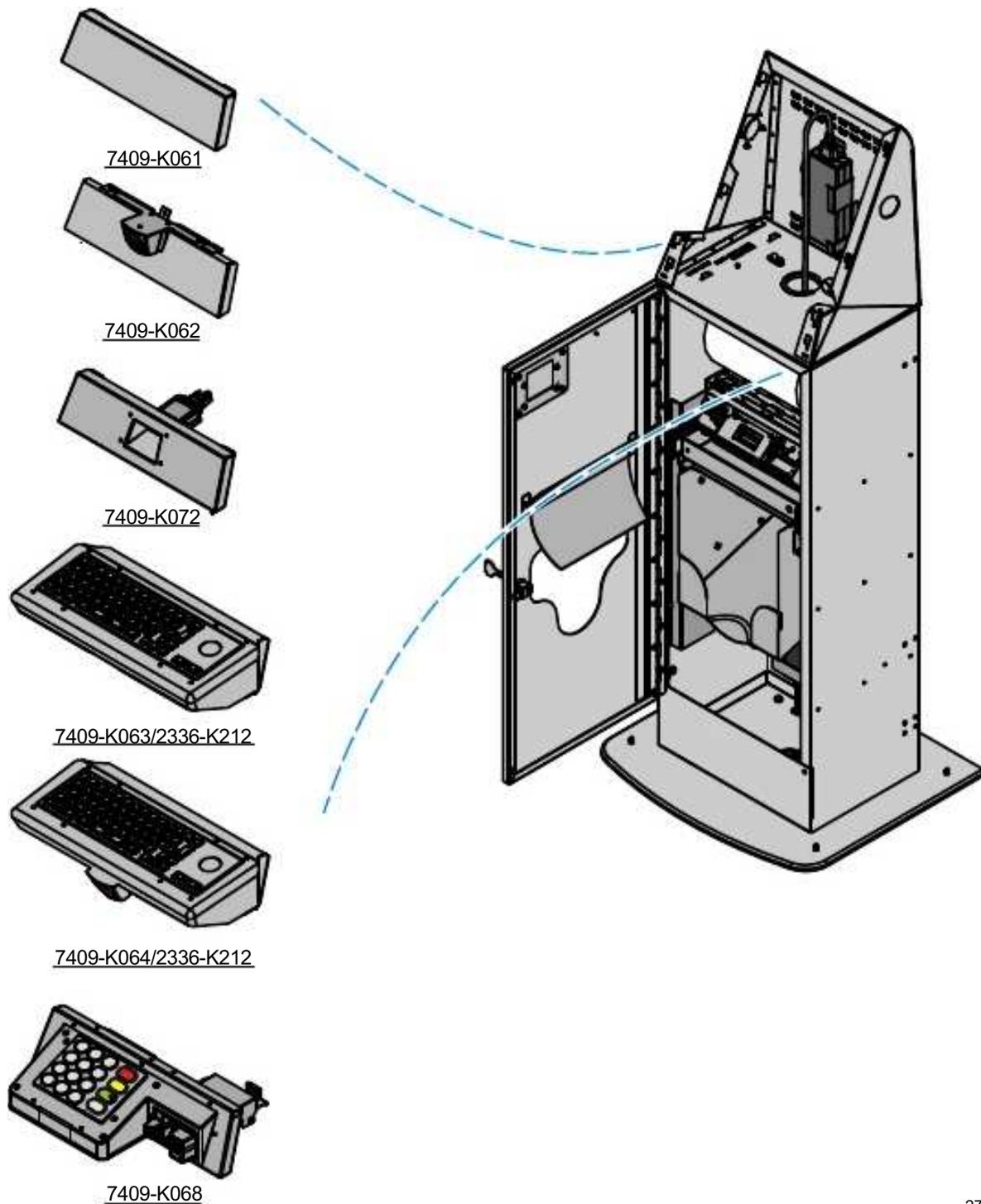
A wide variety of Pinpad devices are supported. They are installed the side of the Fixed Angle Mount.



Pedestal Scanner/Keyboard Options

The following keyboard and scanner options are available for the 7409-K065/K066 pedestals.

- Pedestal Filler Plate (7409-K061)
- Pedestal Filler Plate with Scanner (7409-K062)
- Pedestal Filler Plate with MS4980 Scanner (7409-K072)
- Pedestal Keyboard Tray (7409-K063); requires Rugged Keyboard (2336-K212)
- Pedestal Keyboard Tray w/Scanner (7409-K064); requires Rugged Keyboard (2336-K212)
- Pedestal PIN Pad/Dip MSR (7409-K068)



Software Drivers

Peripheral drivers can be downloaded from the NCR website at:

(<http://www.ncr.com>)

1. At this site, select **Support**.
2. Under Related Items, Services; select **Drivers and Patches**.
3. Select **Retail Support Files**.
4. Select **Retail Platform Software**.

At this screen download the *NCR Retail Peripheral Software Package* for your particular Operating System. Install the software on the 7409 as a PC.

Chapter 2: Hardware Installation

Introduction

The NCR SelfServ 60 is fully assembled at the factory. This chapter discusses how to install a standalone terminal and optional external peripheral devices

There are also several feature kit options that can be integrated in the terminal. For installation information about these please see the Kit Instructions for each. They can be downloaded from the Retail IP Web Sites:

- *Internet:* <http://www.info.ncr.com>
- *NCR Intranet:* <http://infoetail.ncr.com>

To locate the installation guides on these sites:

1. Select **General Search**.
2. Select the **Kit Instructions** icon.
3. In the **Kit Title** field, enter the *Kit Title*.

Example: *MSR*

or

In the **Kit Number** field, enter the *Kit Number*.

Example: *7409-K221*

4. Select Search

The file can be viewed online by left-mouse clicking on the pub title, or if you prefer to download the entire file you can right-mouse click on the title then select the *Save Target as...* option.

If you aren't sure of the title of number you can display all kits associated with a terminal product class by:

1. In the **Class** drop-down list, select the *Class* of the terminal.

Example: *7409*

2. Select **Search**.

Installation Summary

- Remove the terminal from the shipping packaging and verify the hardware configuration. Connect the peripheral and communication cables.
- Connect the terminal to its mount.
- Attach the Power Brick to the system and to an AC power source.
- Connect the peripheral and communication cables.
- Connect a USB keyboard to the terminal. This is needed to accept the license agreement during system boot because the touch screen is not available at that time.
- After power is applied to the terminal the Power-up self-tests run to verify basic functionality.
- ROM-based setup should be used to configure network options. Full configuration depends upon the system server and the management web site.

Installation Restrictions

- Before installing the NCR SelfServ 60, read and follow the guidelines in the *NCR SelfServ 60 Site Preparation Guide* (B005-0000-1890) and the *NCR Workstation and Peripheral AC Wiring Guide* (BST0-2115-53).
- Install the NCR SelfServ 60 near an electrical outlet that is easily accessible. Use the power cord as a power disconnect device.
- Do not permit any object to rest on the power cord. Do not locate the NCR SelfServ 60 where the power cord can be walked on.
- Use a grounding strap or touch a grounded metal object to discharge any static electricity from your body before servicing the NCR SelfServ 60.

Warning: This unit contains hazardous voltages and should only be serviced by qualified service personnel.

Warning: DO NOT connect or disconnect the transaction printer while the terminal is connected to AC power. This can result in system or printer damage.

Warning: DO NOT connect or disconnect any serial peripherals while the terminal is connected to AC power. This can result in system or printer damage.

Warning: The NCR SelfServ 60 must be mounted securely to prevent a hazard. It must be installed in accordance with local building codes. The post or wall on which the unit is mounted should be able to withstand four times the weight of the unit.

Mounting Options

The 7409 can be mounted on various types of NCR mounts. See their associated kit instructions for installation instructions.

- Flush Wall Mount (7404-K034)
- Fixed Angle Mount (7409-K035)
- Floor Standing Pedestal w/Keyboard Shelf (2336-K037)
- Floor Standing Pedestal (2336-K052)
- Wide Floor Standing Pedestal w/Wide Keyboard Shelf Full-Page Printer support
- Wall Mount Bracket (7402-K561)
- Swivel Mount Bracket (7402-K566)
- Wall Mount Bracket w/Wide Keyboard Shelf (7402-K568)
- Self-Service Printer (7402-K592)
- Printer Enclosure on a Wall Bracket (7404-K594)
- Kiosk Full-Page Printer Pedestal (7409-K065)
- Kiosk Receipt Printer Pedestal (7409-K066)

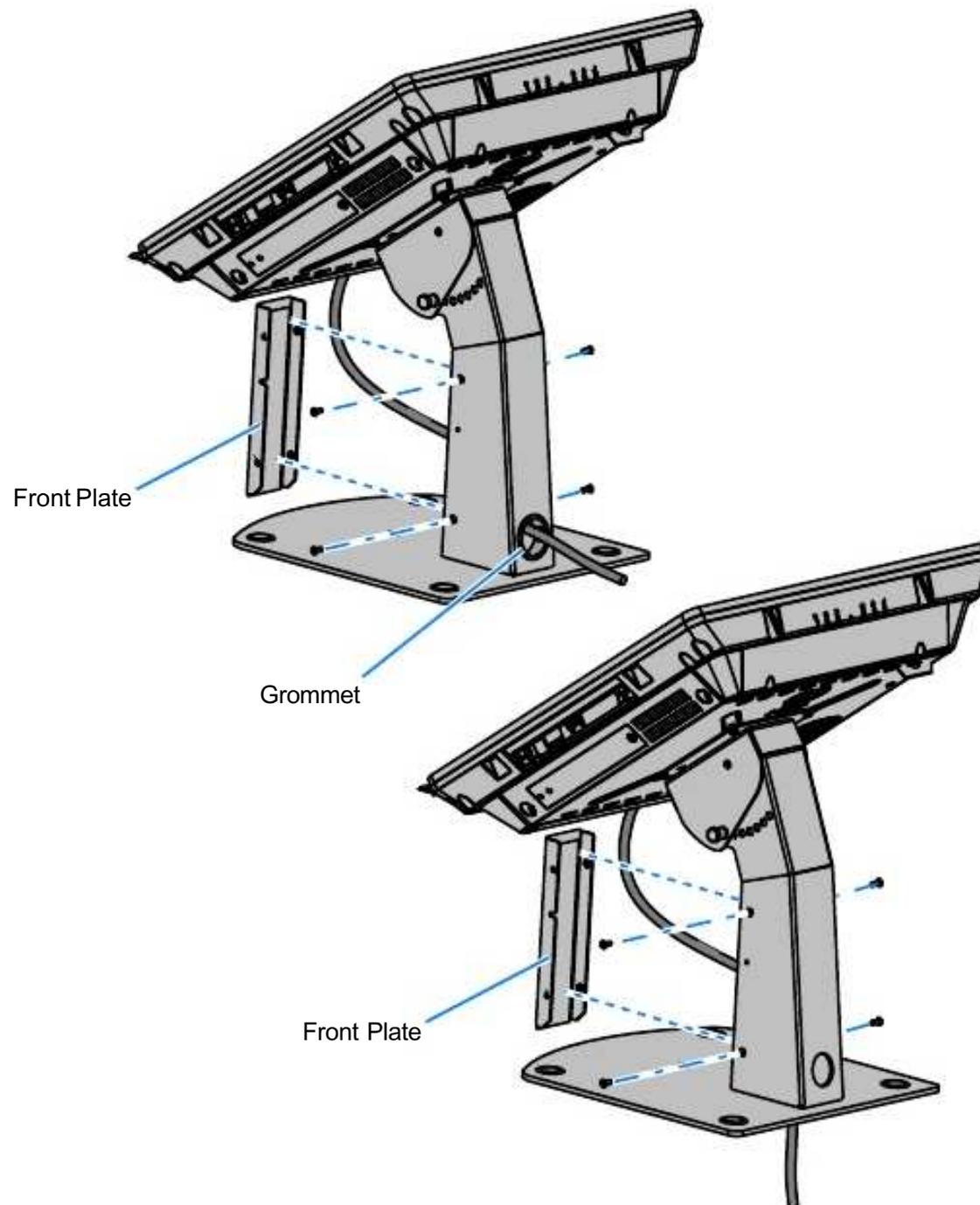
Installing Remote Peripherals

External Cable Routing (Table-Top Mount)

1. Remove the Front Plate from the mount.
2. Route the cables from the Connector Panel down the mount and out the hole in the rear of the base or out the hole in the Mount Base.

Note: Install the Grommet in the hole that the cables are routed through.

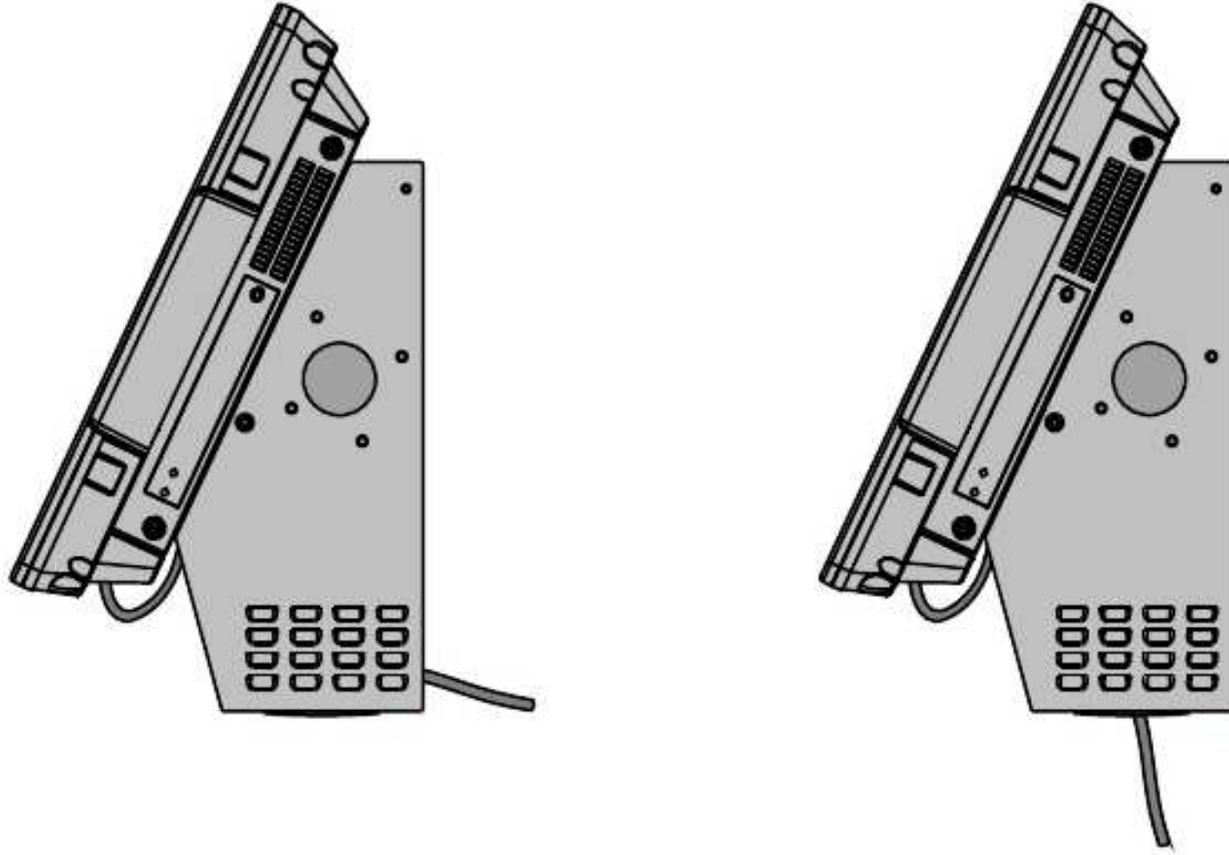
3. Replace the Front Plate.



External Cable Routing (Fixed Angle Mount)

Route the cables from the Connector Panel into the Fixed Angle Mount and out the opening in the bottom or back of the mount.

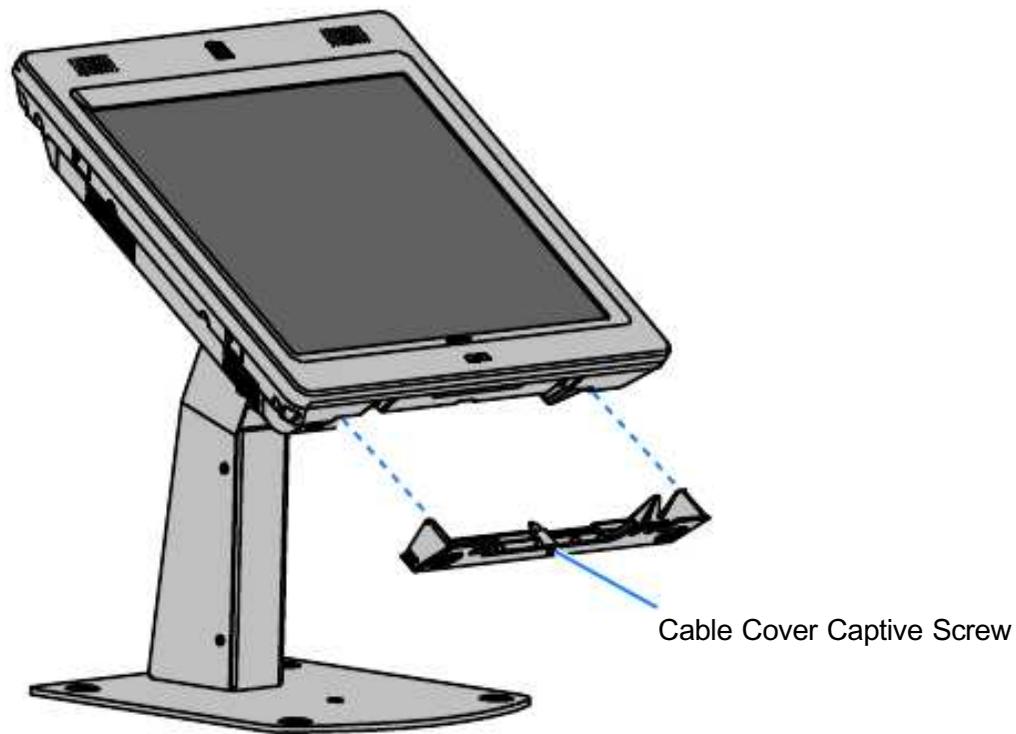
Note: Install the Grommet in the opening that the cables are routed through.



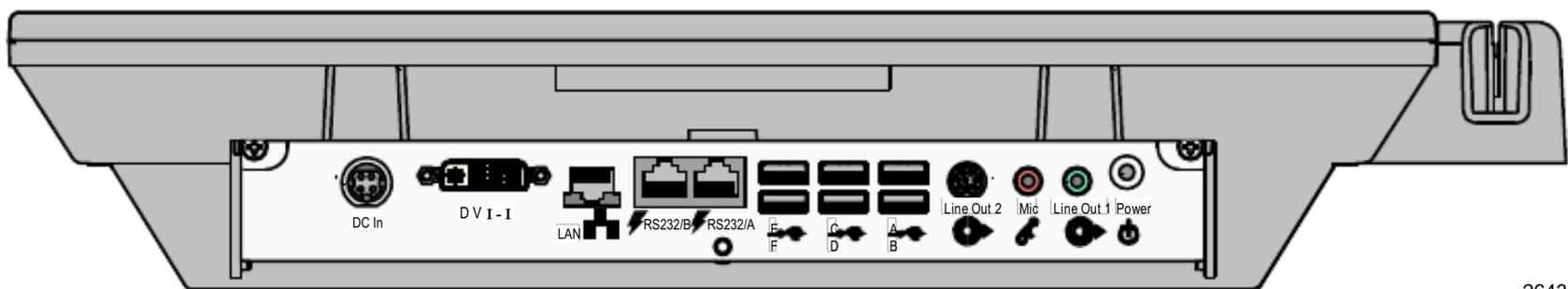
Accessing the Cable Connectors

Table Top Mount Model

1. Tilt the top of the display back.
2. Loosen the captive screw that secures the Cable Cover.
3. Remove the Cable Cover.



26690

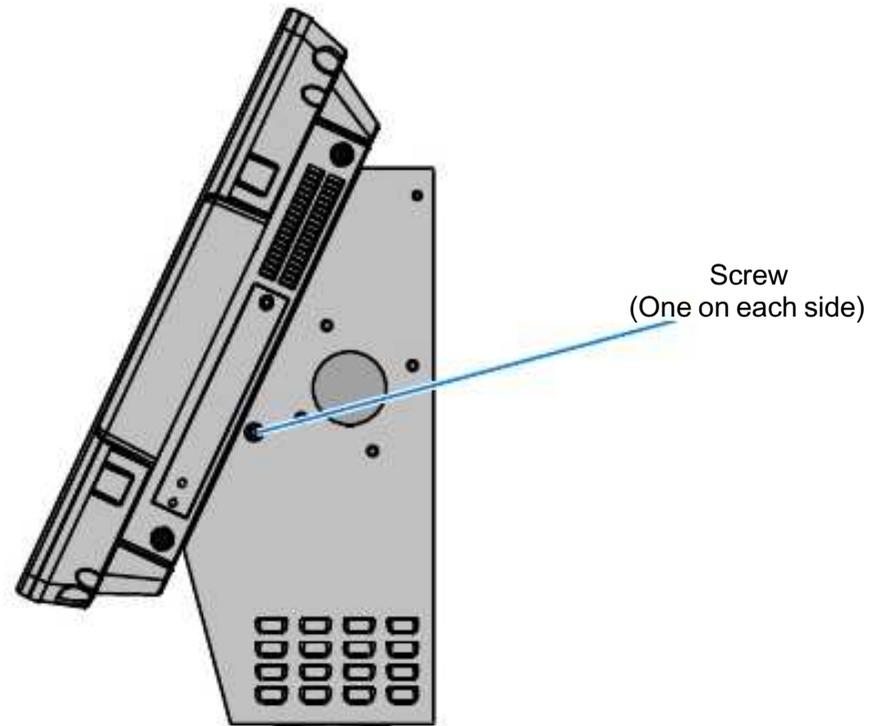


26434

I/O Panel Cable Connectors

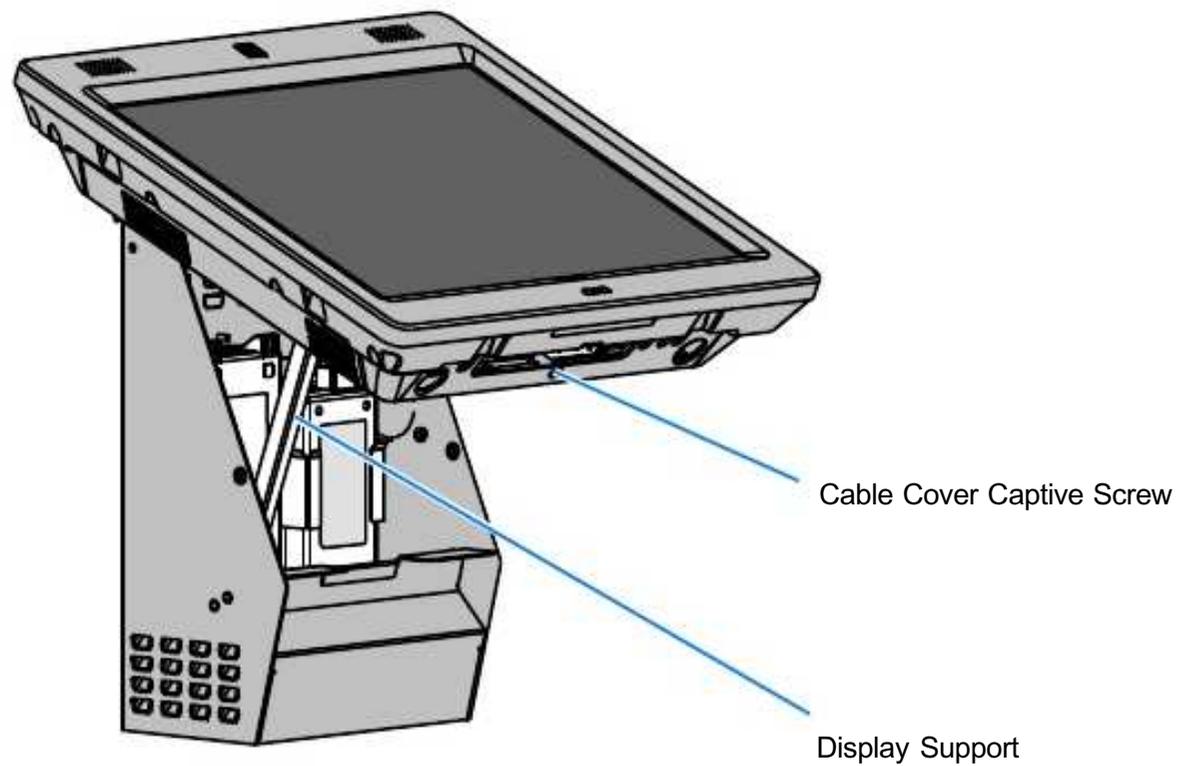
Fixed Angle Mount Model

1. Remove the screws (2) on the sides of the Fixed Angle Mount.



26681

2. Raise the bottom of the display and rest it on the Display Support.



26680

3. Loosen the captive screw that secures the Cable Cover.
4. Remove the Cable Cover.

Installing a Transaction Printer

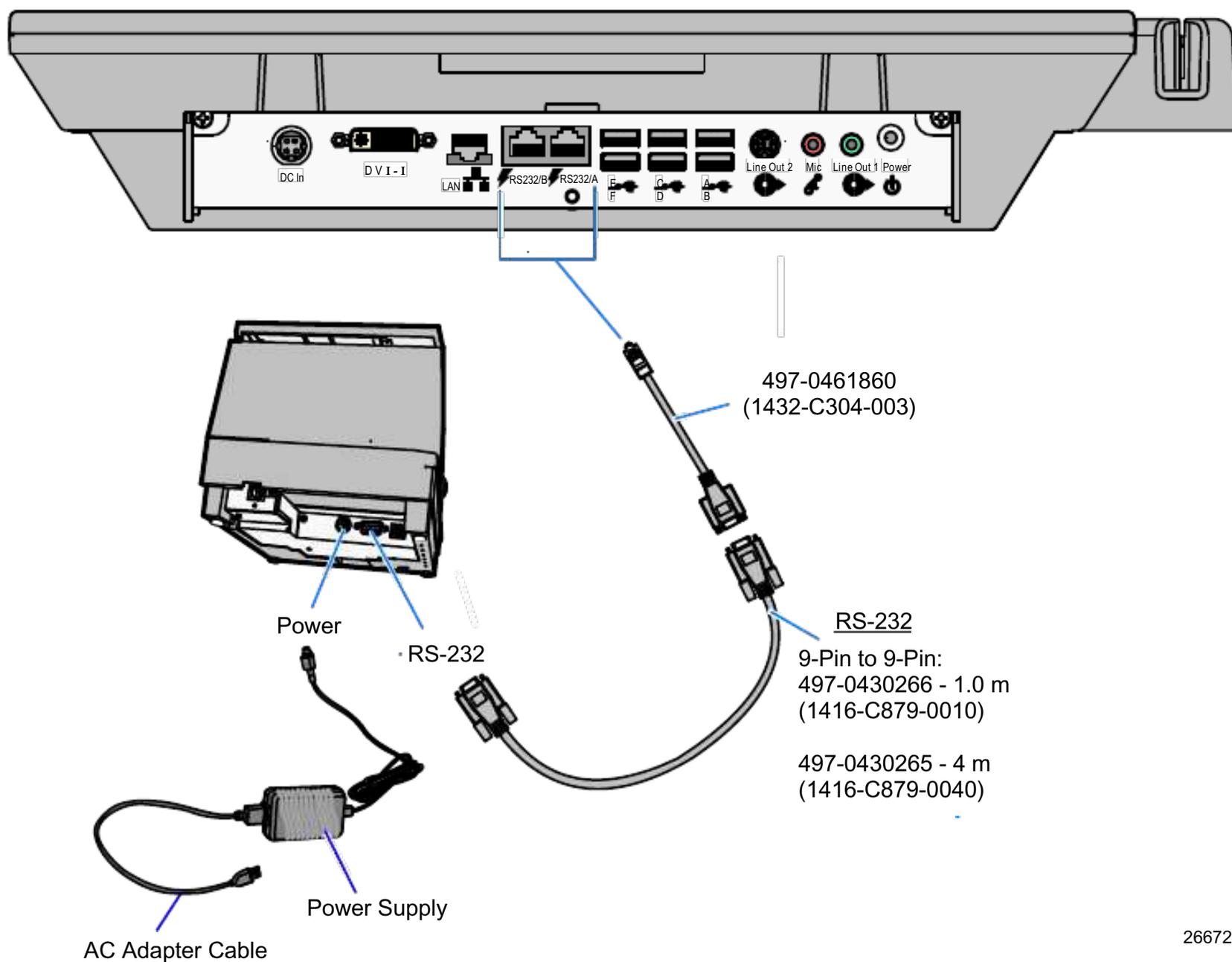
RS-232 Printer Connections

The RS-232 connection requires an adapter cable:

RJ-45 to RS-232 Converter Cable (1432-C304-0003).

1. Connect the RJ-45 to RS-232 Converter Cable to one of the *RS-232 Connectors* on the terminal.
2. Connect the RS-232 Data Cable to the RJ-45 to RS-232 Converter Cable.
3. Connect the Printer Power Supply to the *Power Connector* on the printer and to an AC outlet.

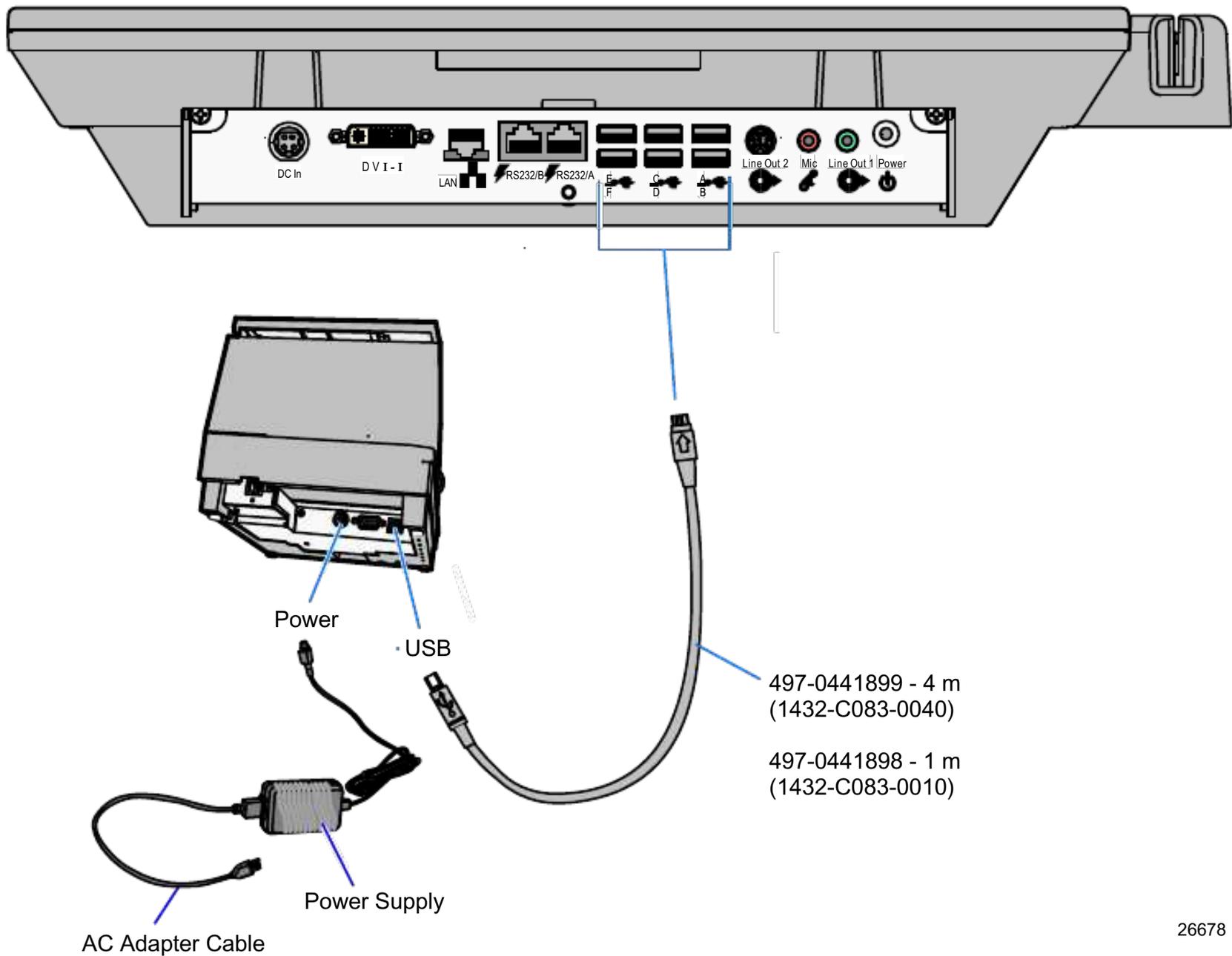
Note: The Power Supply requires a country specific power cord (ordered separately).



USB Printer Connections

1. Connect the USB Data Cable to one of the *USB Connectors* on the terminal and to the *USB Connector* the on the printer.
2. Connect the Printer Power Supply to the *Power Connector* on the printer and to an AC outlet.

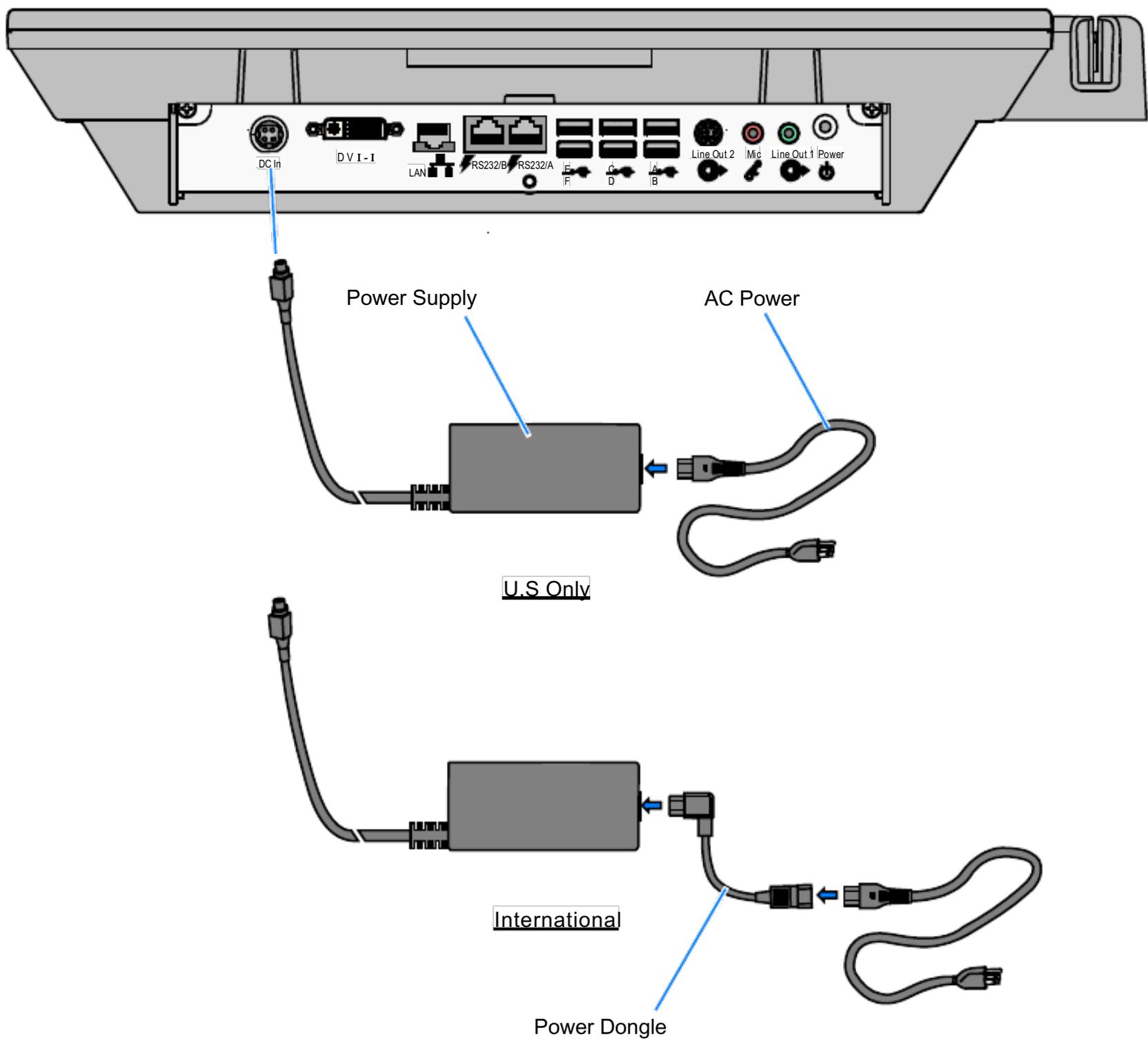
Note: The Power Supply requires a country specific power cord (ordered separately).



Connecting AC Power

1. Connect the Power Supply cable to the *DC Power* connector on the terminal.
2. Connect the AC Power Cord to the Power Supply and to an AC outlet.

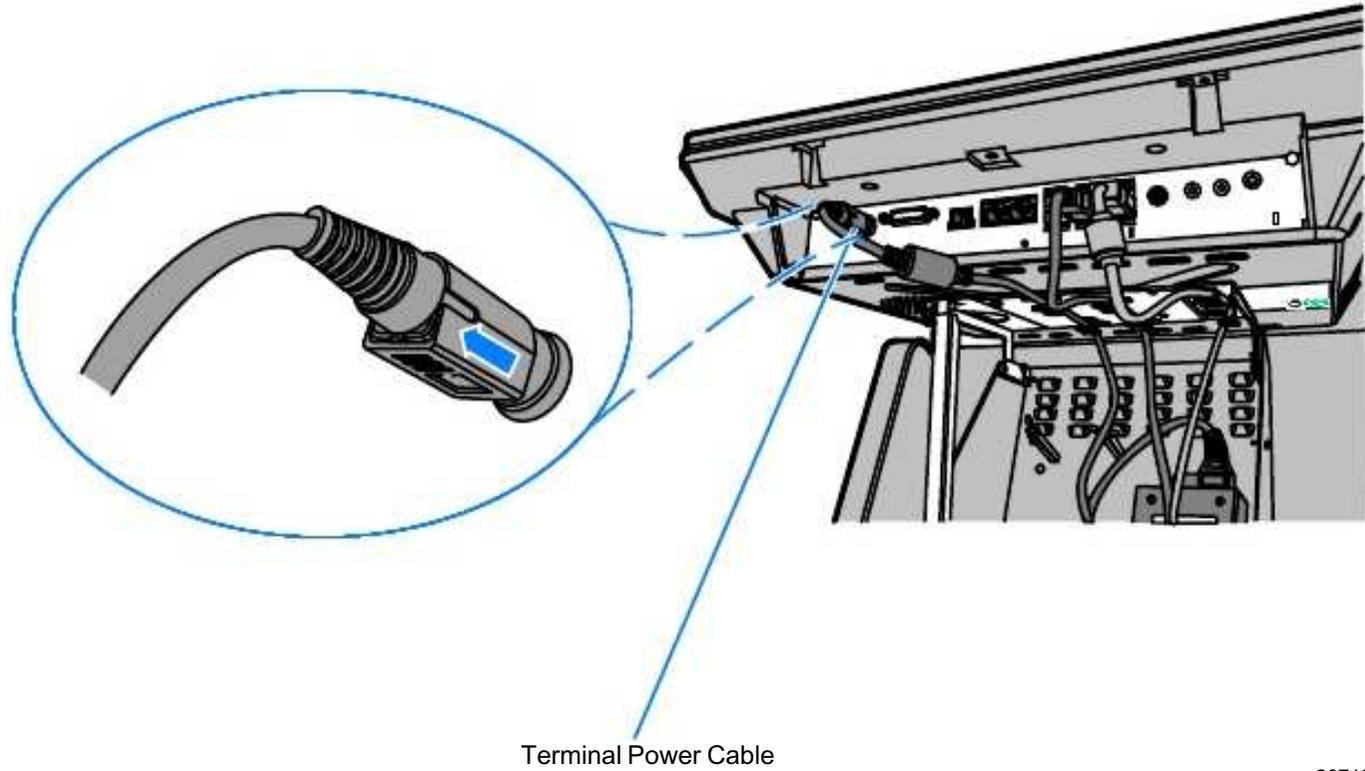
Note: For International installations a Power Dongle is required to adapt standard AC Power Cords (country specific) to the Power Supply. The International dongle is supplied but the Japanese cable must be ordered separately. AC Power Cords are also ordered separately. See the *Cables* appendix.



For International countries use the Mini IEC Power Dongle to adapt standard power cables to the Power Supply.

Disconnecting the Power Cable

The Power Cable connector *locks* into position when connected to the terminal and cannot be removed by simply pulling on the cable. You must grasp the connector and slide the outside housing out from the terminal to *unlock* it from the terminal connector.

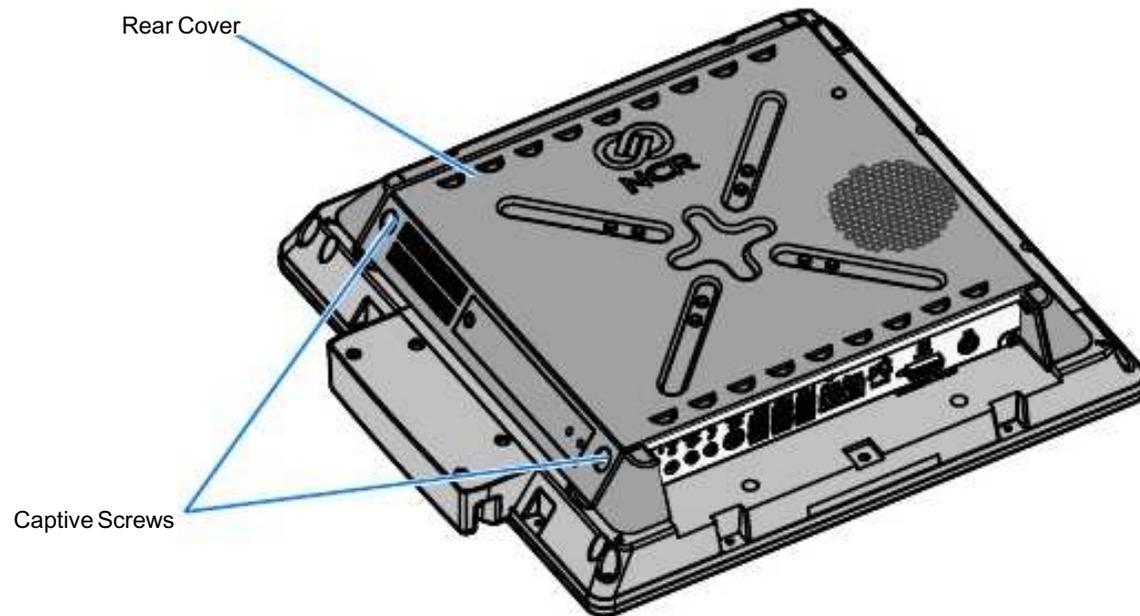


Accessing the Motherboard

1. Lay the terminal face down on a flat surface.

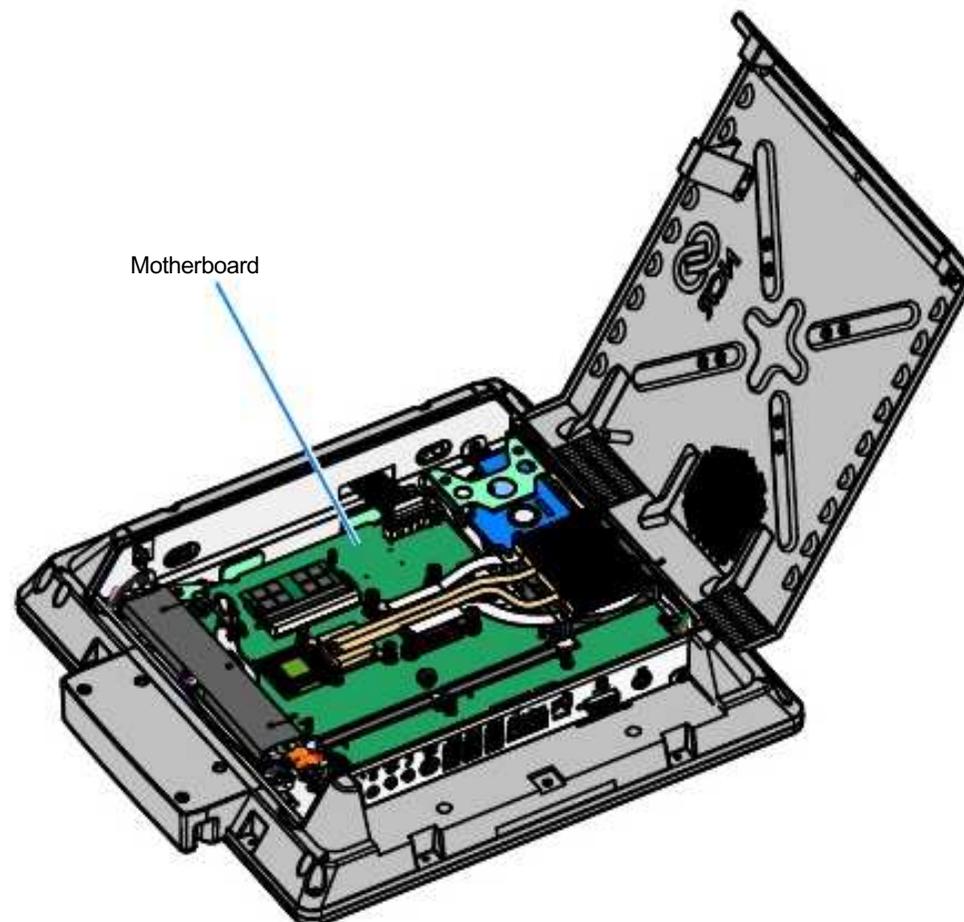
Note: For clarity this procedure is shown with the 7409 removed from its mount. However, the cabinet can be opened while mounted.

2. Loosen the captive screws (2) that secure the Rear Cover.



26650

3. Pivot the Rear Cover to the open position.

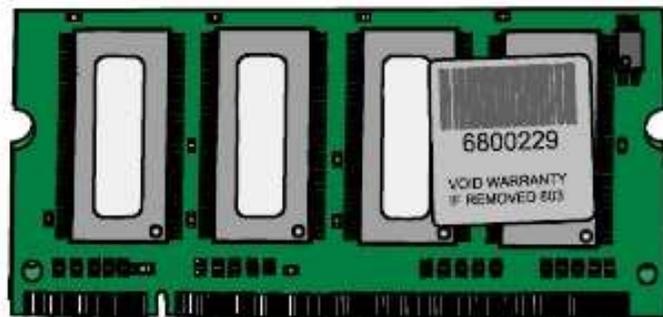


26716

Installing Memory

There are two kits available which provide various increments of memory available for the terminal.

Kit No.	Memory Part No.	Description
7403-K132	497-0460359	DDR2, 1 GB DIMM, 800 MHz
7403-K133	497-0460360	DDR2, 2 GB DIMM, 800 MHz



24245

Memory Configurations

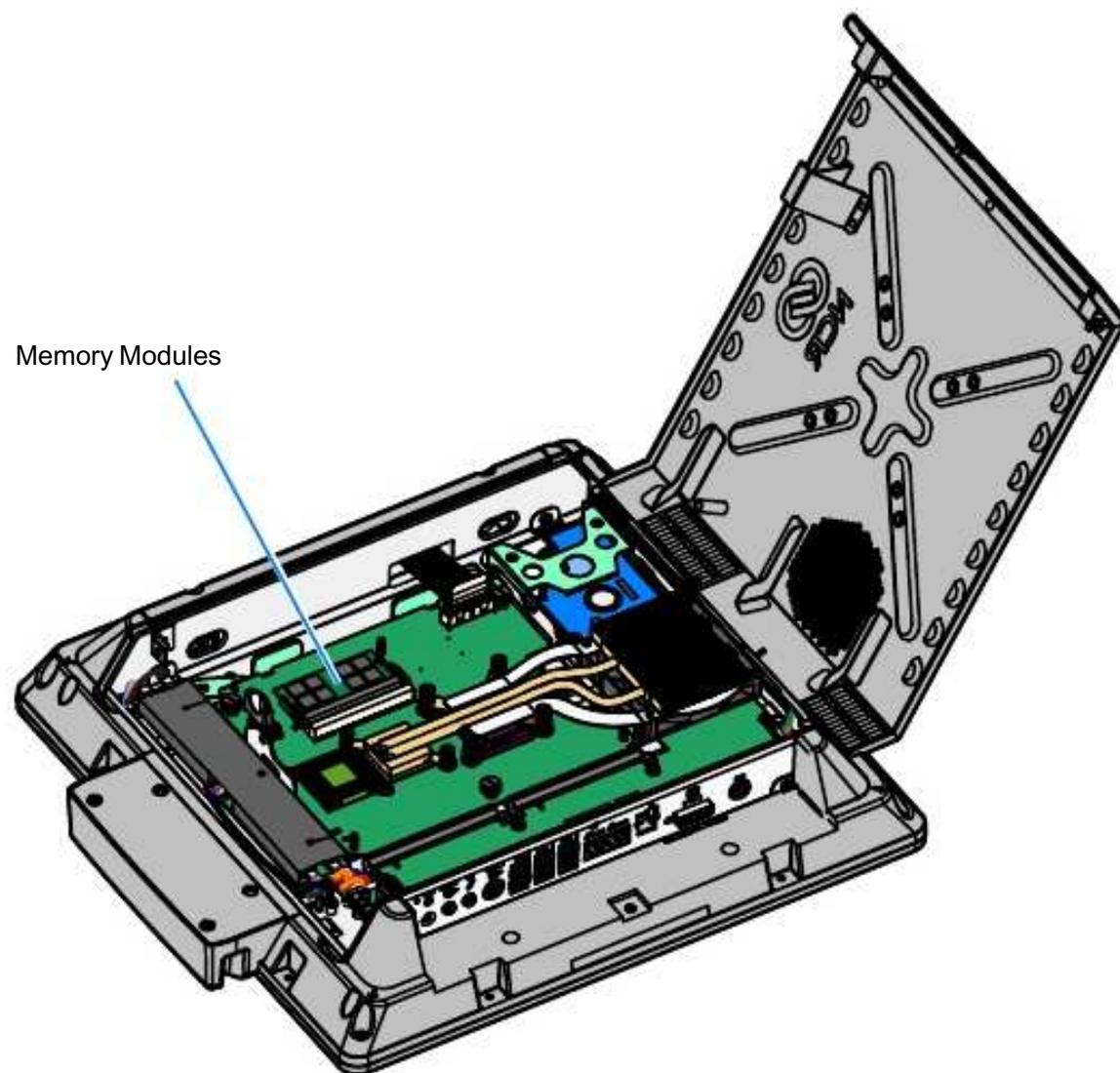
The Motherboard contains two SODIMM sockets. The system can be configured with up 4GB maximum memory.

SODIMM	Number of SODIMMs	Total Memory
1GB	1	1GB
1GB	2	2GB
2GB	1	2GB
2GB	2	4GB

Installing the Memory Module

Caution: Static Electricity Discharge may permanently damage your system. Discharge any static electricity build up in your body by touching your computer's case for a few seconds. Avoid any contact with internal parts and handle cards only by their external edges.

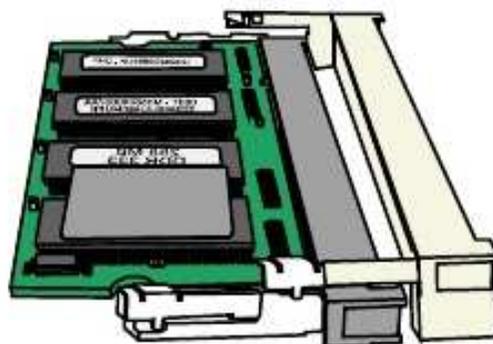
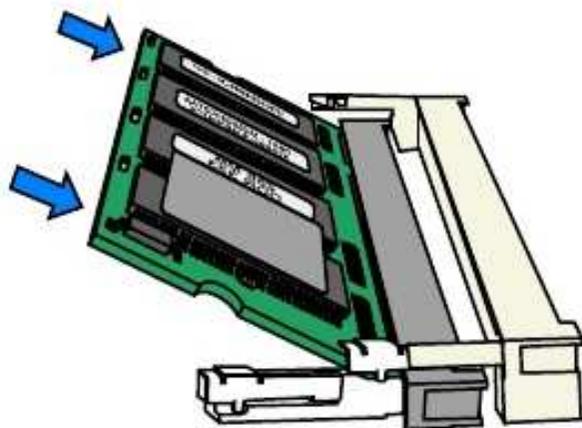
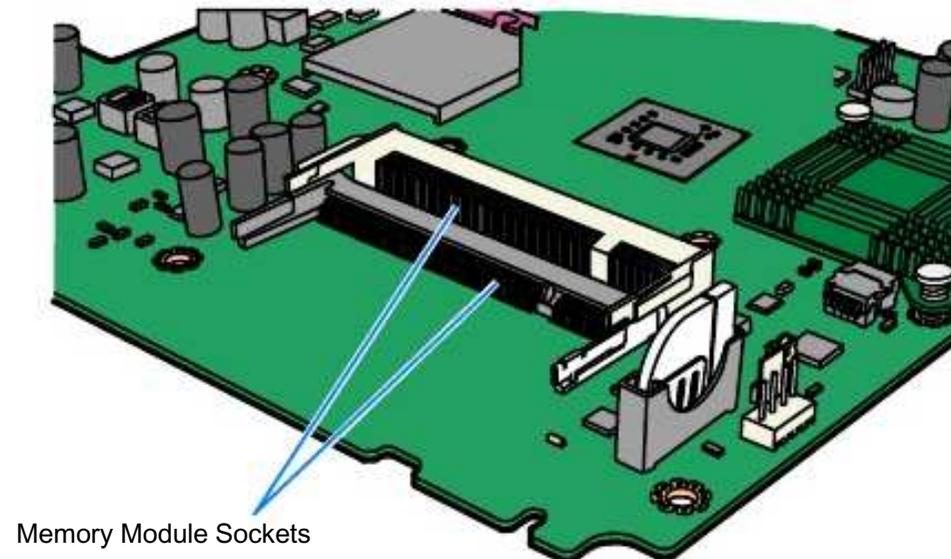
1. Turn Off the power to the terminal and any connected peripheral devices. Unplug the terminal's power cord.
2. Open the cabinet (see the *Accessing the Motherboard* section) to access the Memory Module.



3. Align the DIMM in the socket and push it into the socket (the SODIMM socket is keyed).

Note: If only one memory module is being used insert it in the bottom socket.

The Intel ME/AMT features will not function unless the bottom slot is populated.



26702

4. Press the module down until it latches in position. Ensure that the edges of the SODIMM engage the latches and that the latches are completely closed.

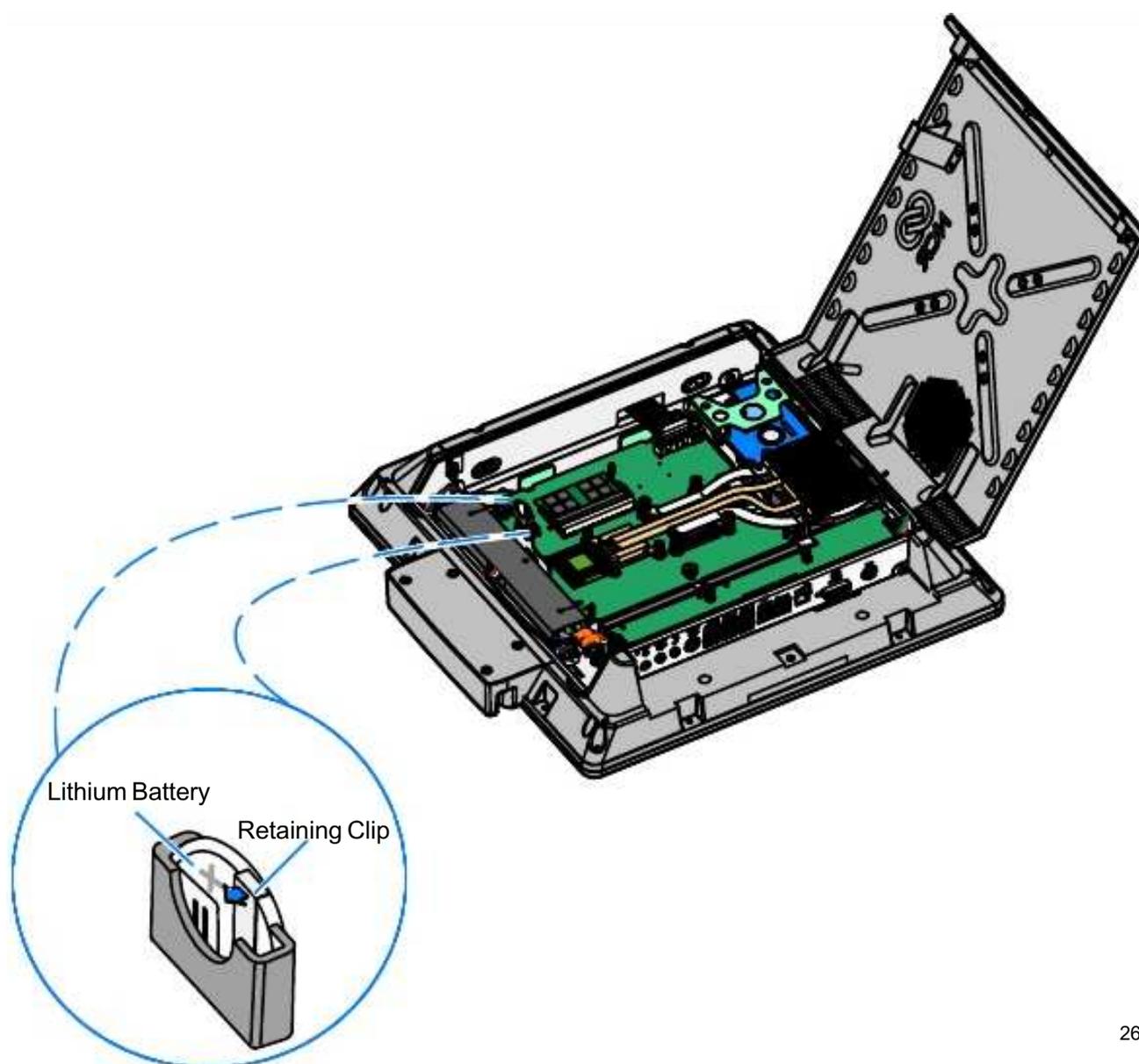
Note: After powering up the terminal, re-flash the SPI/BIOS to ensure the latest version is installed and verify that the terminal is fully functional (see the *BIOS Updating Procedures* chapter in the *NCR RealPOS 70XRT User Guide* (B005-0000-1872). During this operation you will see a prompt for terminal model and serial number information.

Important: Model/Serial Number is mandatory.

Replacing the Lithium Battery

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

1. Open the cabinet (see the *Accessing the Motherboard* section) to access the Lithium Battery.
2. Note the battery's polarity before removing it so that you can replace the battery correctly.
3. Press the Retaining Clip to the side as shown and pull then remove the battery out of the socket.



26717

4. Insert the new battery by pushing it straight down until it is tightly locked. Battery polarity is indicated on the Motherboard next to the battery connector.

Note: Run **Setup** and set the *defaults*. Set the Date/Time and make any desired special settings.

Chapter 3: BIOS Settings

Entering Setup

1. Connect an alphanumeric USB keyboard to the terminal.
2. Apply power to the terminal.
3. When you see the NCR logo displayed press [Del].

How to Select Menu Options

The following keyboard controls are used to select the various menu options and to make changes to their values.

- Use the arrow keys to select (highlight) options and menu screens.
- Use the [Enter] key to select a submenu.
- Use the [+] and [-] keys to change field values.
- To view help information on the possible selections for the highlighted item, press [F1].
- To save the changes, move the cursor to the *Exit Menu*, select either *Save Changes & Exit* or *Save Changes*, and press [Enter].

Restoring Factory Settings

To reset all values to their default settings for the **current screen**, press [F9]. The terminal automatically loads the BIOS default values. To reset **all** BIOS settings to their default settings go to the *Exit* menu, press F9, select either *Save Changes & Exit* or *Save Changes*, and press [Enter].

See the *BIOS Default Settings* sections later in this chapter for the pre-installed Setup defaults.

BIOS Default Values

BIOS Version: 6.2.4.0

Main Menu

System Time	(variable)
System Date	(variable)

Advanced Menu

CPU Configuration	
Hardware Prefetcher	[Enabled]
Adjacent Cache Line Prefetch	[Enabled]
Max CPUID Value Limit	[Disabled]
Execute-Disable Bit	[Enabled]
Compatibility	
Intel(R) SpeedStep(tm) tech	[Enabled]
Intel(R) C-STATE tech	[Enabled]
Spread Spectrum	[Enabled]
IDE Configuration	
Mirrored IDER Configuration	[Enabled]
Configure SATA#1 as	[RAID]
Hot Plug	[Enabled]
Hard Disk Write Protect	[Disabled]
IDE Detect time Out (Sec)	[35]
ATA(PI) 80Pin Cable Detection	[Host & Device]
SuperIO Configuration	
Serial Port A Address	[3F8/IRQ4]
Serial Port B Address	[2F8/IRQ3]
Serial Port B Mode	[Normal]
Serial Port C Address	[3E8]
Serial Port C IRQ	[IRQ11]

Serial Port D Address	[2E8]
Serial Port D IRQ	[IRQ10]
Serial Port E Address	[2E0]
Serial Port E IRQ	[IRQ06]
System Hardware Health Monitoring	
Motherboard HHM	
I/O Board HHM	
ACPI Configuration	
General ACPI Configuration	
Suspend Mode	[Auto]
Repost Video on S3 Resume	[No]
Advanced ACPI Configuration	
ACPI Version Features	[ACPI v3.0]
ACPI APIC support	[Enabled]
AMI OEMB table	[Enabled]
Headless mode	[Disabled]
ACPI S5 Shutdown	[Enabled]
Chipset ACPI Configuration	
Energy Lake Feature	[Disabled]
APIC ACPI SCI IRQ	[Disabled]
UB Device Wakeup From S3/S4	[Enabled]
High Performance Event Timer	[Enabled]
HPET Memory Address	[FED00000h]
AHCI Settings	
AHCI BIOS Support	[Enabled]
AHCI CD/DVD Boot Time out	[35]
AHCI Port0 [Hard Disk]	
SATA Port0	[Auto]
S.M.A.R.T.	[Enabled]
AHCI Port1 [Not Detected]	

SATA Port1	[Auto]
S.M.A.R.T.	[Enabled]
AHCI Port2 [Not Detected]	
SATA Port2	[Auto]
S.M.A.R.T.	[Enabled]
AHCI Port3 [Not Detected]	
SATA Port3	[Auto]
S.M.A.R.T.	[Enabled]
AHCI Port4 [ATAPI CDROM]	
SATA Port4	[Auto]
AHCI Port5 [Not Detected]	
SATA Port5	[Auto]
S.M.A.R.T.	[Enabled]
ASF Configuration	
ASF Support	[Enabled]
Event Log Configuration	
View Event Log	
Mark all event as read	
Clear Event Log	
Intel AMT Configuration	
Intel AMT Support	[Disabled]
PCI Express Configuration	
Active State Power-Management [Disabled]	
Remote Access Configuration	
Remote Access	[Disabled]
Trusted Computing	
TCG/TPM Support	[Yes]
Execute TPM Command	[Enabled]
TPM Enable/Disable Status	[No State]
TPM Owner Status	[No State]

 USB Configuration

 USB Devices Enabled:

 1 Keyboard, 1 Mouse

 Legacy USB Support [Enabled]

 USB 2.0 Controller Mode [HiSpeed]

 BIOSEHCI Hand-Off [Enabled]

PCI/PnP Menu

 Clear NCRAM [No]

 Plug & Play O/S [No]

 PCI Latency Timer [64]

 Allocate IRQ to PCI VGA [Yes]

 Palette Snooping [Disabled]

 PCI IDE BusMaster [Disabled]

 OffBoard PCI IDE Card [Auto]

 IRQ3 [Available]

 IRQ4 [Available]

 IRQ5 [Available]

 IRQ7 [Available]

 IRQ9 [Available]

 IRQ10 [Available]

 IRQ11 [Available]

 IRQ14 [Available]

 IRQ15 [Available]

 DMA Channel 0 [Available]

 DMA Channel 1 [Available]

 DMA Channel 3 [Available]

 DMA Channel 5 [Available]

 DMA Channel 6 [Available]

 DMA Channel 7 [Available]

 Reserved Memory Size [Disabled]

Boot Menu

Boot Settings Configuration	
Quick Boot	[Disabled]
Quiet Boot	[Enabled]
AddOn RoM Display Mode	[Force BIOS]
Bootup Num=Lock	[On]
PS/2 Mouse Support	[Disabled]
Wait For 'F1' If Error	[Disabled]
Hit 'DEL' Message Display	[Enabled]
Interrupt 19 Capture	[Disabled]
Boot Type	[Cold Boot]
Boot Order Defaults	[LAN First]
BBS PopUp Menu	[Enabled]
Power Button Override	[Enabled]
Boot Device Priority	
1 st Boot Device	[Network:IBA GE Slo]
2 nd Boot Device	[HPM.1.10.14.56] (Hidden Partition Manager)
3 rd Boot Device	[CD/DVD:P1-DV-28S-V]
4 th Boot Device	[RAID:ST380215AS] (Hard Drive)

 Hard Disk Drives

1 st Drive	[RAID:ST380215AS]
-----------------------	-------------------

 CD/DVD Drive

1 st Drive	[CD/DVD:P1-DV-28S-V]
-----------------------	----------------------

Initiate Pre-boot Services	[Hot Key]
----------------------------	-----------

Security Menu

Supervisor Password:	:Not Installed
----------------------	----------------

User Password:	:Not Installed
----------------	----------------

Change Supervisor Password	[Enter]
----------------------------	---------

Change User Password	[Enter]
----------------------	---------

Boot Sector Virus Protection	[Disabled]
------------------------------	------------

Chipset Menu

 NorthBridge Configuration

Memory Hole	[Disabled]
-------------	------------

Boots Graphic adapter Priority	[PEG/PCI]
--------------------------------	-----------

Internal Graphics Mode Select	[Enabled, 32MB]
-------------------------------	-----------------

Max TOLUD	[3G Bytes]
-----------	------------

Gfx Low Power Mode	[Enabled]
--------------------	-----------

 PEG Port configuration

PEG Port	[Auto]
----------	--------

 Video Function Configuration

DUMT Mode Select	[DUMT Mode]
------------------	-------------

DUMT/FIXED Memory	[256MB]
-------------------	---------

PAVP Mode	[Disabled]
-----------	------------

Boot Display Device	[VBIOS-Default]
---------------------	-----------------

Flat Panel Type	[Type 3]
-----------------	----------

Backlight Control Support	[VBIOS-Default]
---------------------------	-----------------

BIA Control	[VBIOS-Default]
-------------	-----------------

TV Standard	[VBIOS-Default]
-------------	-----------------

Spread Spectrum Clock	[Disabled]
HDCP Support	[Disabled]
South Bridge Configuration	
USB Functions	[12 USB Portal]
USB Port Configure	[6X6 USB Ports]
USB 2.0 Controller	[Enabled]
GbE Controller	[Enabled]
GbE LAN Boot	[Enabled]
GbE Wake Up From S5	[Disabled]
Had Controller	[Enabled]
SLP_S4# <om./ Assertion Width	[4 to 5 seconds]
Restore on AC Power Loss	[Last State]
PCIe Ports Configuration	
PCIe Port 0	[Enabled]
PCIe Port 1	[Enabled]
PCIe Port 2	[Enabled]
PCIe Port 3	[Enabled]
PCIe Port 4	[Enabled]
PCIe High Priority Port	[Disabled]
PCIe Port 0 IOxAPIC Enable	[Disabled]
PCIe Port 1 IOxAPIC Enable	[Disabled]
PCIe Port 2 IOxAPIC Enable	[Disabled]
PCIe Port 3 IOxAPIC Enable	[Disabled]
PCIe Port 4 IOxAPIC Enable	[Disabled]
PCIe Port 5 IOxAPIC Enable	[Disabled]
USB Port Configuration	
USB Port A	[Enabled]
USB Port B	[Enabled]
USB Port C	[Enabled]
USB Port D	[Enabled]

USB Port E	[Enabled]
USB Port F	[Enabled]
USB Port G	[Enabled]
USB Port H	[Enabled]
USB Port I	[Enabled]
USB Port J	[Enabled]
USB Port K	[Enabled]
USB Port L	[Enabled]
Me Subsystem Configuration	
ME HECI Configuration	
ME-HECI	[Enabled]
ME-IDER	[Enabled]
ME-KT	[Enabled]

Chapter 4: Operating System Recovery

Introduction

This chapter discusses procedures on how to recover the Operating System from CD-ROM. If your unit does not have an internal CD-ROM drive you can use one of the following:

- Teac USB External CD-ROM Drive (2336-K208)
- NCR Services: External CDR/W DVD-ROM Drive (603-9014774)
- Network (See the *NCR FitClient Software User's Guide*, B005-0000-1235.)

Prerequisites

The following are required in order to perform an OS recovery from a CD.

- Bootable CD-ROM drive (internal or external)
- Keyboard

OS Recovery Procedures

1. Insert the *NCR Partition Image Application* CD (D370-0605-0100) into the CD drive.
2. Connect a keyboard to the terminal.
3. Apply power to the terminal.
4. Press [F8] during boot (when you see the NCR logo) to enter the Boot Select menu.
5. If you are using the integrated CD/DVD Drive select CD/DVD:P1-DV-28S-V. If you are using the external USB CD Drive select USB:TEAC CD-W552E.
6. You should see a message during boot, indicating that the CD-ROM has been recognized.
7. At the menu, enter 1 to select the image restore function and press [Enter].

```
#####
NCR Partition Image Application
#####
```

Select an option

- 1 - Process Image/Script CD
- 2 - View Partition Image Documentation on CD
- 3 - Interactive Create/Restore Via Network/USB
- 4 - Exit and reboot

Chapter 5: BIOS Updating Procedures

Introduction

The BIOS is located in the Serial Peripheral Interface (SPI) chip on the processor board. This chapter discusses procedures on how to update the terminal SPI and/or BIOS. The update software is distributed via the NCR Website.

The BIOS update can be performed using the following methods:

- Bootable CD
- Bootable USB Memory Drive
- Network – Refer to the *NCR FitClient Software User's Guide*, (B005-0000-1235) for information about this procedure.

Prerequisites

The following are required to perform a SPI/BIOS update.

- Bootable USB CD-ROM Drive
 - USB Keyboard
 - BIOS Software. Download from the NCR website:
<http://www.ncr.com>
- e. At this site, select the Support tab.
 - f. Select Drivers and Patches → Retail Support Files → NCR RealPOS and SelfServ Terminal and Operating Systems → NCR RealPOS 70XRT (7409) → BIOS.
 - g. Select the desired *SPI Files* (includes the BIOS) or *BIOS Files* (BIOS only).
 - h. Save the software to your local hard drive.

Creating the Bootable Media

Creating a Bootable CD

The downloaded file is a CD image file (ISO) containing the files necessary to create a bootable CD. A system with a CD/DVD burner is required to perform this function.

1. Insert a writable CD in the CD/DVD burner drive.
2. Record the downloaded image file onto the CD using a utility that is capable of burning ISO files.

Note: You cannot simply drop the file on the CD and burn it. You must use software capable of recording ISO images onto CDs.

Creating a Bootable USB Memory Drive

The downloaded file contains the files necessary to create a bootable USB Memory Drive.

1. Insert a USB drive that is formatted as FAT (or FAT32).
2. Unzip the downloaded files.
3. Copy the files to the root directory of the USB Memory Drive.
4. Open a DOS command window
5. Change directory to the USB Memory Drive.
6. Execute the following command:

```
Syslinux -sf n <USB drive letter>
```

Example: Syslinux -sf *n* f:

This command erases any bootable methods that may be present on the USB drive and replaces it with the SPI/BIOS update process.

SPI/BIOS Updating Procedures

1. Insert the media containing the SPI/BIOS update software in the 7409.
2. Connect a USB keyboard to the terminal.
3. Apply power to the terminal.

Important: The update procedure requires two boots from the SPI/BIOS media. Be sure to set your boot order accordingly to make this happen. You can change the boot order temporarily in the *BIOS Setup Boot Menu* or you can press [F8] during boot (when you see the NCR logo) to enter the *Boot Select* menu.

- If you are using the integrated CD/DVD Drive select CD/DVD:P1-DV-28S-V.
 - If you are using the external USB CD Drive select USB:TEAC CD-W552E.
 - If you are using a USB Memory Drive select USB:xxxx xxx.
4. The terminal boots and displays the SPI/BIOS Update main menu.

There are six options from the main menu to run the update program. Three run automatically and two are interactive. Option 1, the Automatic SPI and BIOS Update executes automatically in 10 seconds unless the up/down arrow is pressed.

Automatic Method

With the Automatic Method you may see a prompt to enter the DMI (Desktop Management Interface), which is the terminal *Class/Model/Serial* information. This happens if the program detects invalid DMI information in the current BIOS, or if you are replacing the processor board, which has no *Class/Model/Serial* information in the BIOS.

Important: DMI information is mandatory.

Interactive Method

This method permits you to input/replace the *Class/Model/Serial* information that is stored in the BIOS.

Note: DMI information that is currently stored in the BIOS is displayed during power up. Press [Tab] at the NCR Logo to remove the logo. Press [Pause] to freeze the screen. Press [Esc] to continue.

5. Make a menu selection and follow the screen prompts (Option 1 is recommended).

```
1 Update SPI and BIOS - No prompt for Serial/Model/Class unless invalid
2 Update BIOS only - No prompt for Serial/Model/Class unless invalid
```

```
***** Forced Update of Serial/Model/Class Information *****
```

```
3 Update DM only - Serial/Model/Class update ONLY (no BIOS or SPI Update)
```

```
4 Update of SPI and BIOS - Always prompts for Serial/Model/Class
```

```
5 Update of BIOS only - Always prompts for Serial/Model/Class
```

```
***** For Service Personnel Only *****
```

```
6 Update of SPI and BIOS - Reset to Default Serial/Model/Class information
```

Option 1 – Update SPI and BIOS – No prompt for Serial/Model/Class unless invalid

1. Highlight Option 1 and press [ENTER]. (Executes automatically in 10 seconds unless the up/down arrow is pressed.)
2. The Flash Program updates the SPI/BIOS, automatically powers down, and then reboots the terminal.
3. After a few seconds the terminal reboots again.
4. As the terminal reboots select the boot media again [F8] (if necessary) to have the terminal boot from the SPI/BIOS media.
5. Let the terminal boot from Option #1 (default).
6. The Manageability Engine (ME) is programmed and a message is displayed indicating power must be removed before continuing. Press [3] to perform a 20 second AC power removal (automatically executes in 2 minutes if no keys are pressed).
7. Remove the SPI/BIOS Update media before the system boots.
8. System is ready for operation.

Option 2 – Update BIOS only – No prompt for Serial/Model/Class unless invalid

This option automatically updates the BIOS only.

1. Highlight Option 2 and press [ENTER].
2. The Flash Program updates the BIOS and automatically reboots the terminal.

Option 3 – Update DMI only - Serial/Model/Class update ONLY (no BIOS or SPI Update)

This option lets you enter the DMI information only. The SPI and BIOS are not updated.

1. Highlight Option 3 and press [ENTER].
2. At the prompt press [ENTER] to enter the Class/Model/Serial Number information (DMI). Follow the onscreen format instructions.

Example: 7409- 1500- 8801 [ENTER]
54- 19378230 [ENTER]

3. Press 1 to confirm the data and to continue.
4. Remove the BIOS Update media before the system boots.
5. System is ready for operation.

Option 4 – Update of SPI and BIOS – Always prompts for Serial/Model/Class

This option is similar to Option 1 above except you are prompted for *Class/Model/Serial* information at the beginning of the program. You also have to select which type of update to run, BIOS or SPI.

1. Highlight Option 4 and press [ENTER].
2. At the prompt press [ENTER] to enter the Class/Model/Serial Number information (DMI). Follow the onscreen format instructions.
Example: 7409- 1500- 8801 [ENTER]
54- 19378230 [ENTER]
3. Press 1 to confirm the data and to continue.
4. The Flash Program updates the SPI/BIOS, automatically powers down, and then reboots the terminal.
5. After a few seconds the terminal reboots again.
6. As the terminal reboots select the boot media again [F8] (if necessary) to have the terminal boot from the SPI/BIOS media.
7. Let the terminal boot from Option #1 (default). The Manageability Engine (ME) is programmed at this time.
8. At the prompt:
(Press <0> for command prompt, or <3> to reboot (automatic in 10 seconds) press [3] to reboot.
9. A message is displayed indicating power must be removed before continuing. Press [3] to perform a 20 second AC power removal (automatically executes in 2 minutes if no keys are pressed).
10. Remove the BIOS/SPI Update media before the system boots.

Option 5 – Update of BIOS only – Always prompts for Serial/Model/Class

This option prompts for *Class/Model/Serial* information at the beginning of the program and then updates the BIOS only.

1. Highlight Option 5 and press [ENTER].
2. At the prompt press [ENTER] to enter the Class/Model/Serial Number information (DMI). Follow the onscreen format instructions.

Example: 7409- 1500- 8801 [ENTER]
54- 19378230 [ENTER]

3. Press 1 to confirm the data and to continue.
4. The Flash Program updates the SPI/BIOS and automatically reboots the terminal.

Option 6 – Update SPI and BIOS – Default Serial/Model/Class information

This option is for Service Personnel only. It updates the SPI and BIOS but leaves the *Class/Model/Serial* fields empty (erased). The DMI information is then entered when the board is installed in a terminal.

1. Highlight Option 6 and press [ENTER].
2. The SPI and BIOS are updated and the system reboots (2 times).
3. Remove the SPI/BIOS Update media before the system boots.
4. System is ready for operation.

Manually Updating the MAC Address

The *SPI/BIOS Updating Utility* can be used to replace a lost or corrupted Motherboard MAC address.

1. Boot the terminal with the SPI/BIOS Update device as described earlier in this chapter.

2. Select Option 3 to perform a manual BIOS update.

```
1 Update SPI and BIOS - No prompt for Serial/Model/Class unless invalid
2 Update BIOS only - No prompt for Serial/Model/Class unless invalid
```

```
***** Forced Update of Serial/Model/Class Information *****
```

```
3 Update DM only - Serial/Model/Class update ONLY (no BIOS or SPI Update)
```

```
4 Update of SPI and BIOS - Always prompts for Serial/Model/Class
```

```
5 Update of BIOS only - Always prompts for Serial/Model/Class
```

```
***** For Service Personnel Only *****
```

```
6 Update of SPI and BIOS - Reset to Default Serial/Model/Class information
```

3. When prompted for the DMI information enter `Ctrl - c` to exit the utility.

4. At the DOS prompt enter the following command:

```
fpt -u -n:HostMacAdd -v:0x123456789012
```

where: the number at the end is the terminal MAC address (Hex)

Example: 0x001fe240013c

Note: The MAC address is located on a printed label on the front of the Motherboard.

When prompted to overwrite the existing file, answer `y`.

Verifying the Terminal MAC and AMT MAC Addresses

The results can be verified by performing using the following commands.

```
Fpt -q -d:gm45_gbe.bin -gbe
Get_1mac gm45_gbe.bin macs.bat
```

The updated address is displayed:

```
HOST_MAC_ADDR is 00-1f-e2-40-01-3c
```

Chapter 6: Touch Screen Calibration Utility

Installing and Calibrating the Touch Screen

Be sure to observe for the following Touch Screen calibration guidelines:

- Calibrate the touch screen as part of the installation process.
- Recalibrate the touch screen when the system is installed at its final location.
- Recalibrate whenever the terminal is moved to a new location.
- Recalibrate the touch screen anytime the system has been disassembled for servicing.
- Download the Calibration software from the NCR website.

<http://www.ncr.com>

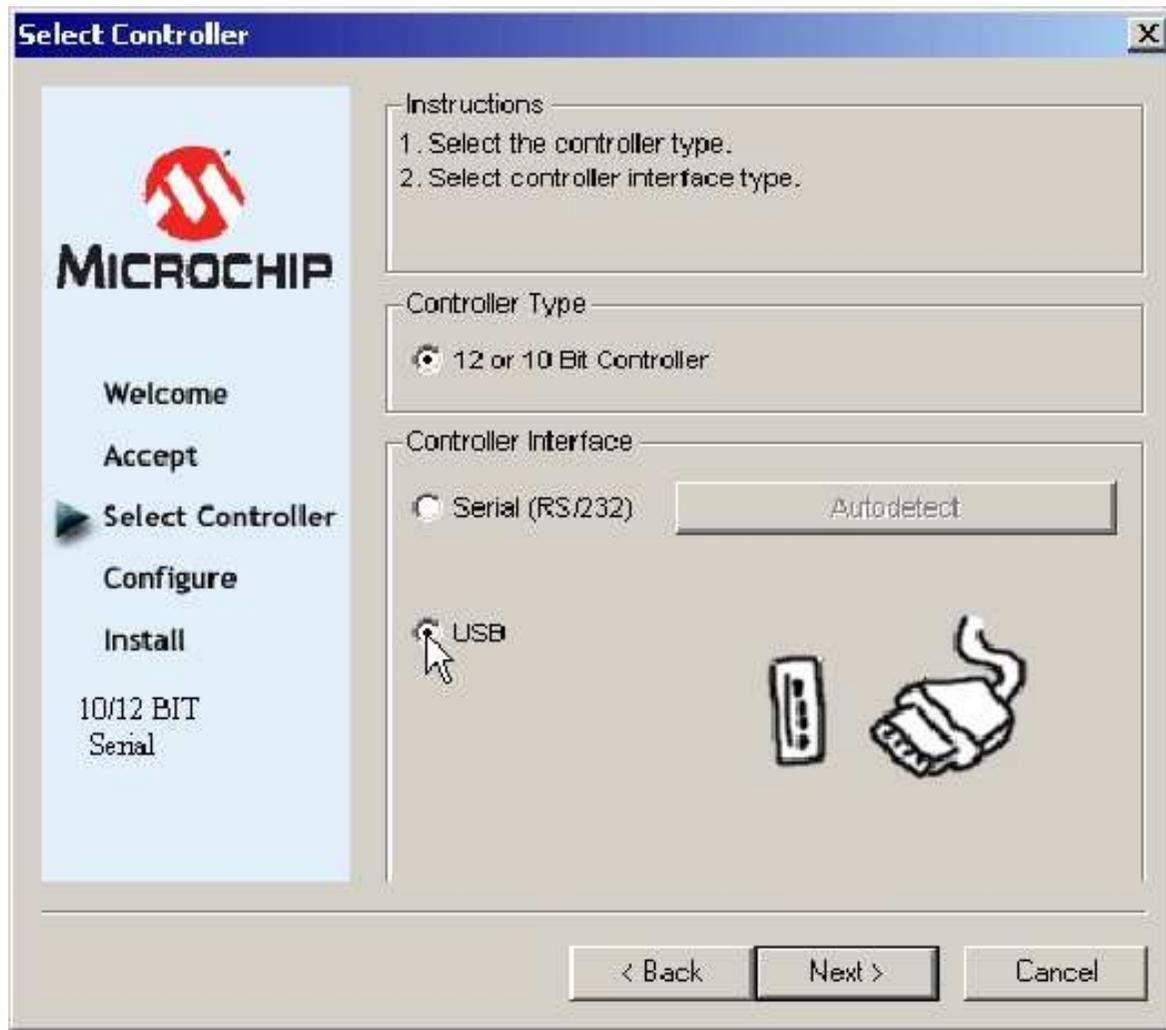
1. At this site, select the Support tab.
2. Select Drivers and Patches → Retail Support Files → NCR RealPOS and SelfServ Terminal and Operating Systems → NCR RealPOS 70XRT (7403) → Windows → Windows XP Pro, Windows EP Embedded, and WEPOS
3. Download the Microchip Touch Driver (version 6.33d or later).

Installing the Driver

Note: If you have a previous version of another touch screen driver loaded on your system you must completely remove it using the Control Panel *Add/Remove* program before continuing with this installation process. Even though there is a message that it is not necessary do perform a *System Restart* after removing the old driver.

1. Extract the driver installation files into to a working directory on the POS terminal.
2. Run the **Setup.exe** program from this directory.
3. Welcome screen > Next
4. License Agreement screen > Accept, Next

5. Use the USB Controller Interface > Next.



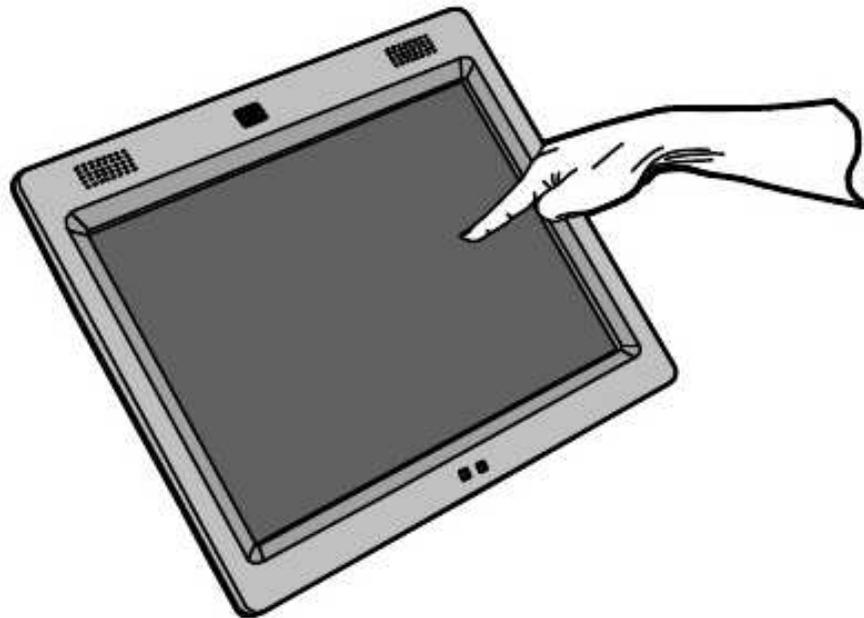
6. Setup is ready to install > Next > Finish

At the completion of the install program the driver is loaded and functioning. You do not have to restart your system.

Calibrating the Touch Screen

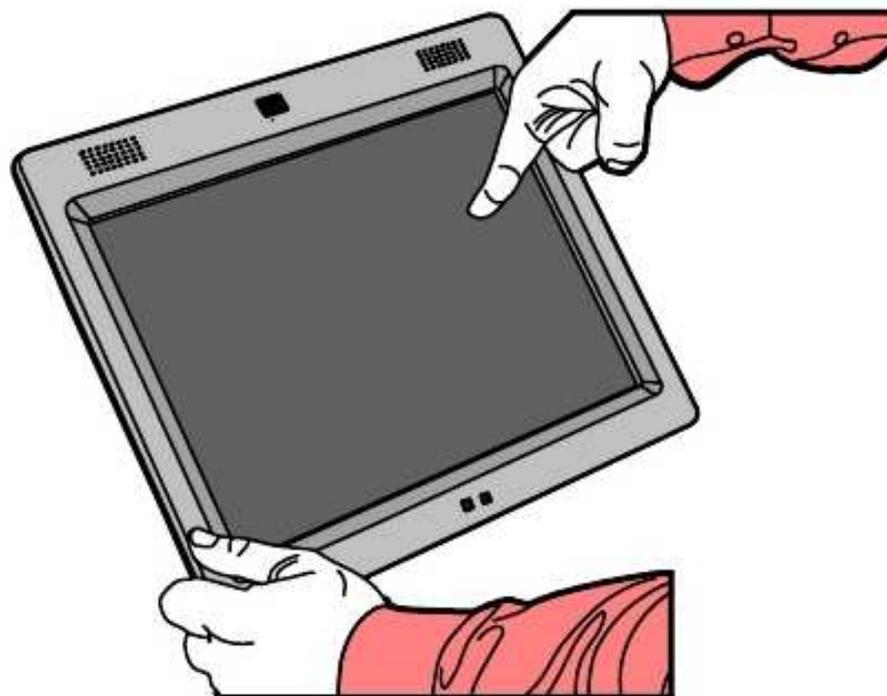
Before performing the calibration procedure please observe the following guidelines for proper/improper methods of touching the screen.

- Face the monitor directly.
- Perform the calibration in the position (sitting or standing) that you normally expect to use the touch screen.
- Touch the calibration target firmly and precisely with your fingertip. During calibration, be careful to keep your fingernails and other fingers away from the touch screen as you touch each target.
- The hand and calibration finger should be perpendicular (straight up) from the touch-screen during touch down and removal of the calibration finger. Keep the other fingers closed and away from the touch-screen.



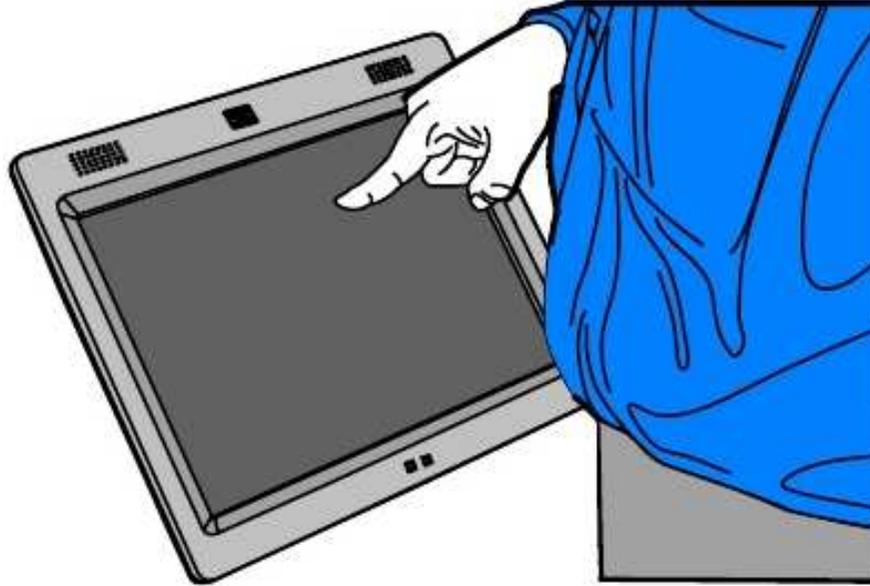
27732

- Do NOT touch the display or bezel with your other hand.



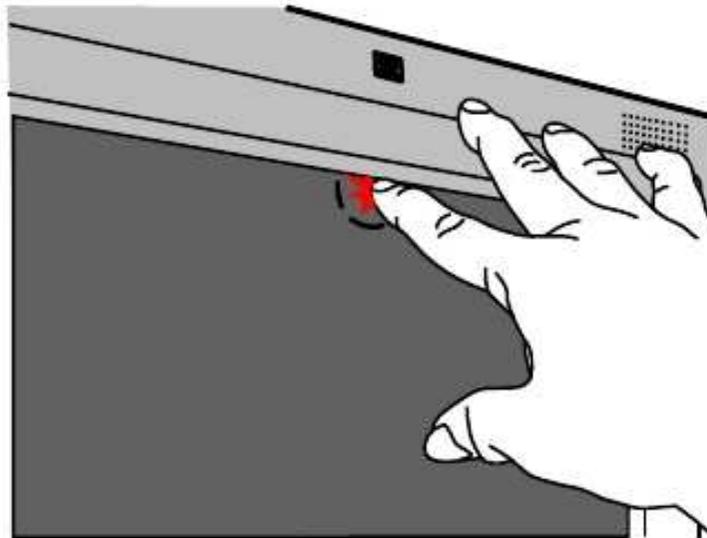
27733

- Do NOT get your body too close to the display.



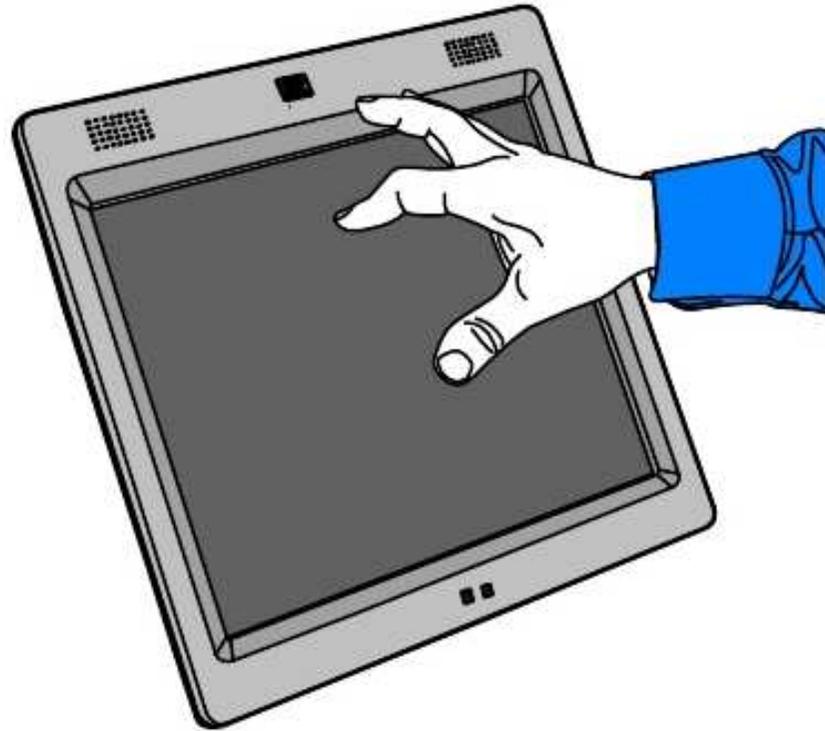
27734

- Do NOT touch the bezel with your other fingers.



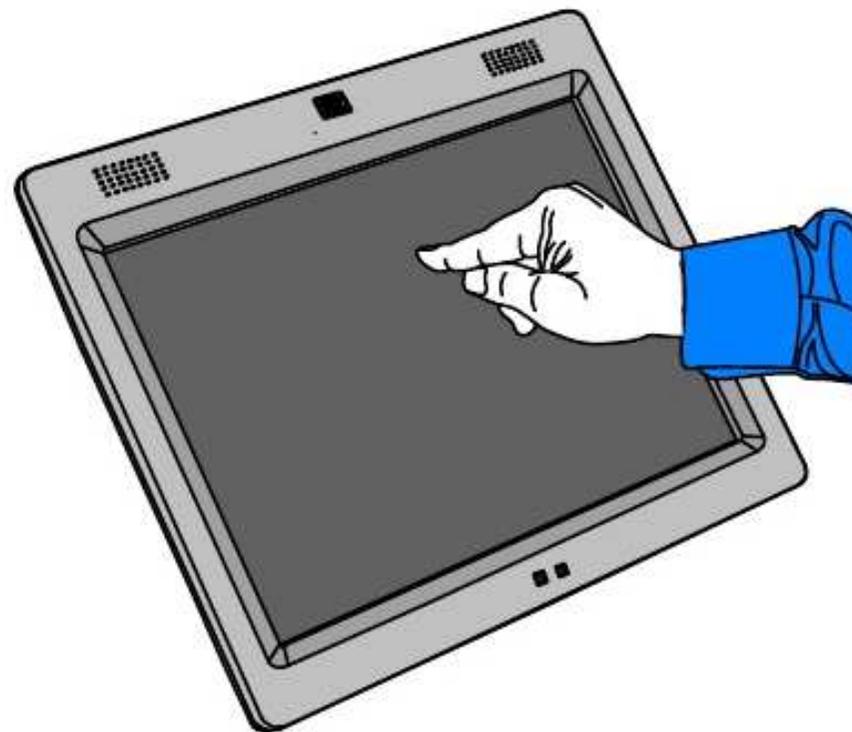
27735

- Do NOT spread your other fingers near the touch-screen surface.



27736

- Do NOT have get your hand and other fingers too close to the bezel.



27737

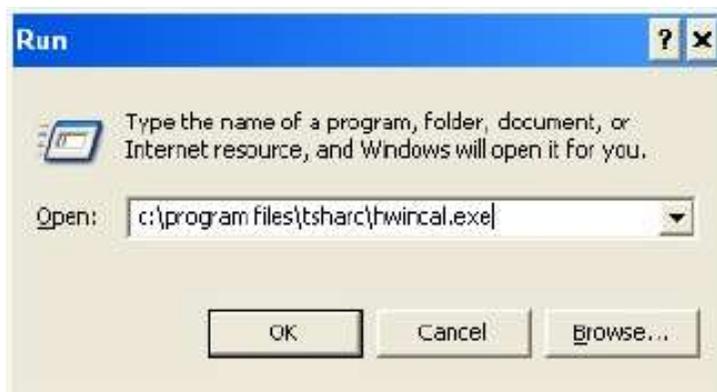
Calibration Procedures

Note: In order to achieve an accurate calibration the touch display must be in the normal operating position when AC power is applied to the terminal (45 degrees can be assumed if this is not known). If this was NOT done properly then begin with Step 1. Otherwise skip to Step 2.

1. Disconnect the power cord from the power source, if possible. It is best to remove the AC power from the wall outlet to avoid having to move the head. But if that cannot be done, tilt the head up and remove the AC cord from the front of the unit. After removing the power cord, tilt the head back to the normal operating position.

Wait at least 10 seconds. Then, while keeping the head in the normal operating position and your hands off of the glass and bezel, plug the cord back in. The head can be touched or moved after AC power has been applied for at least two seconds.

2. Press <CTRL><ESC> to launch the *Start* menu.
3. Select Run and type `C:\program files\tsharc\hwincal.exe` and press [Enter].

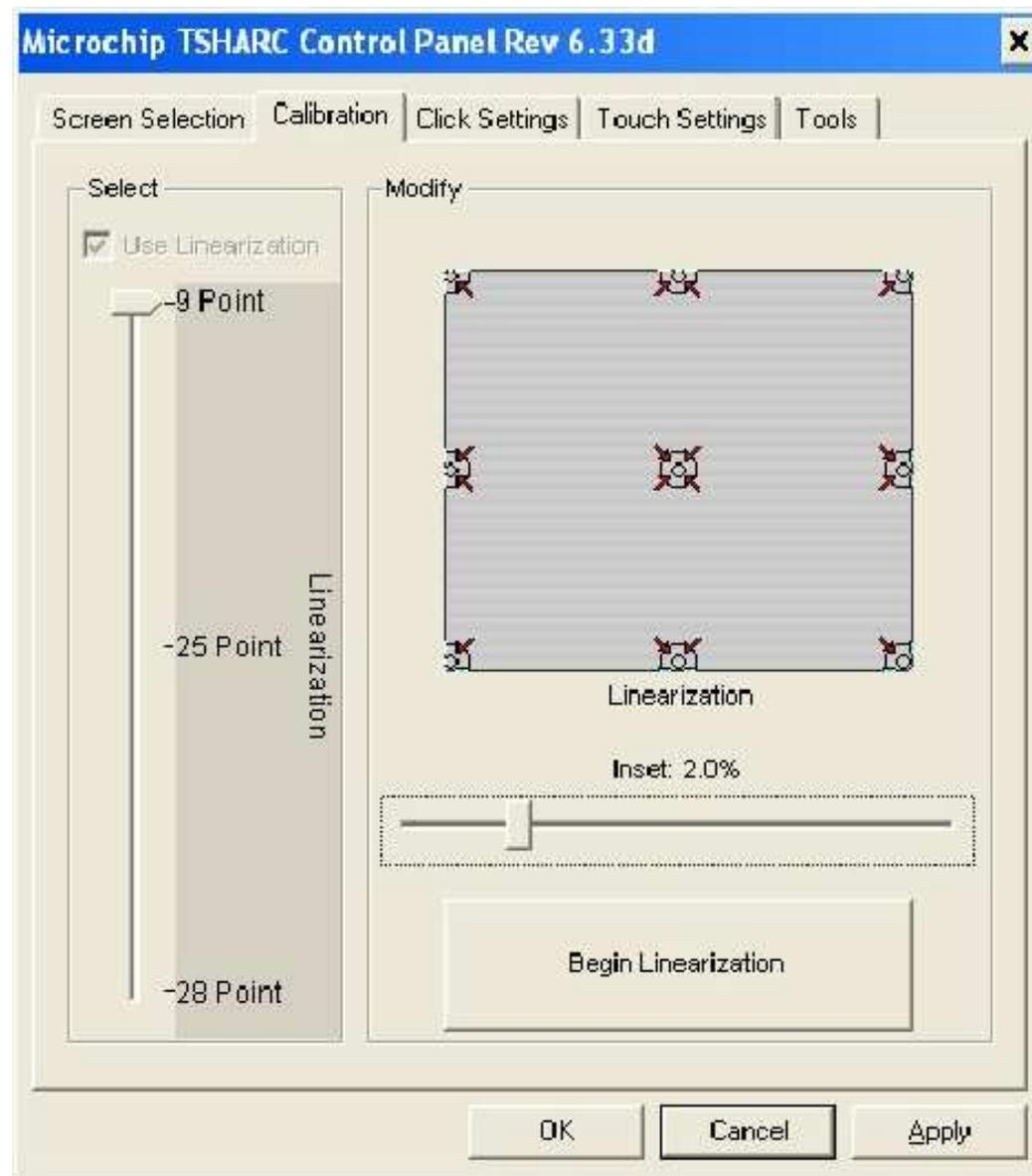


4. Do one of the following:

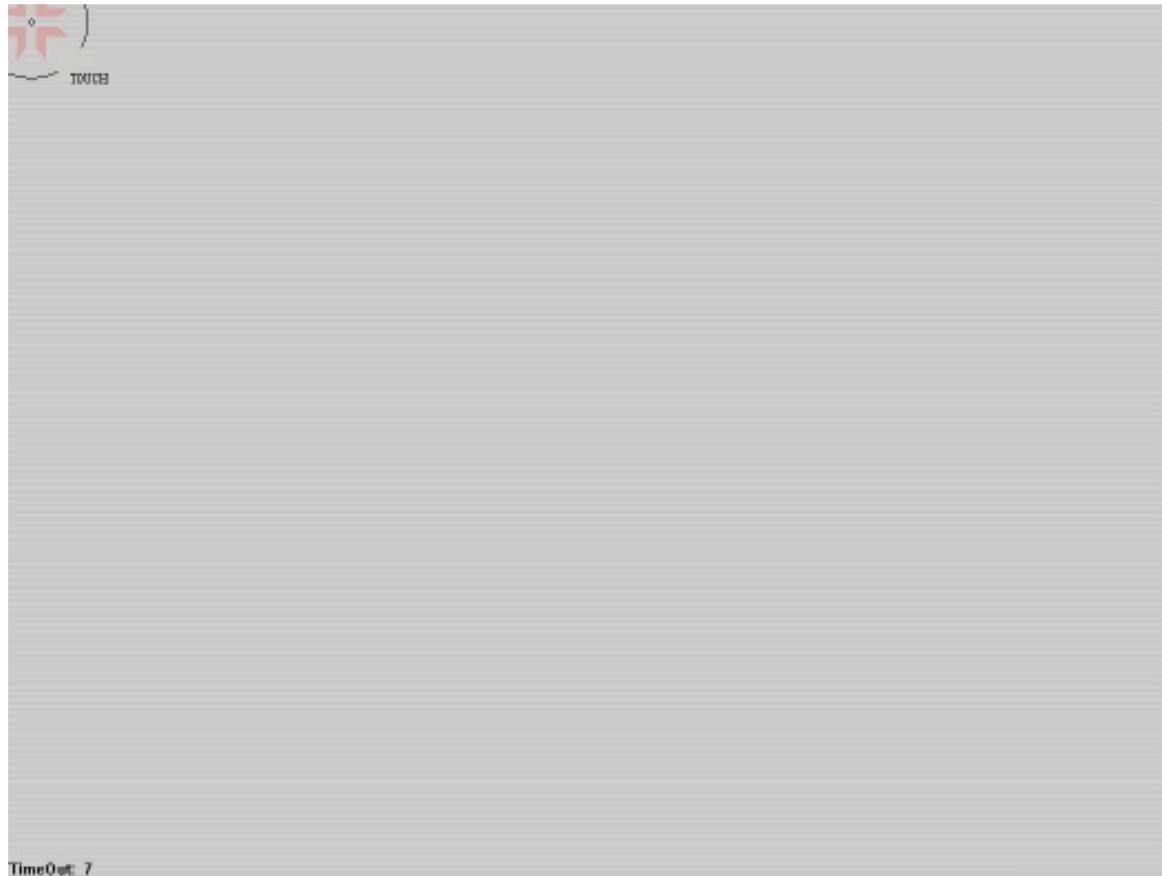
- Using the keyboard TAB until you see a dashed box around the *Screen Selection* tab. Right arrow to select the *Calibration* tab.
- Tab until you get a dashed line around the Select section and select *9-Point w/Linearization* using the down arrow key.

Note: Earlier versions of the Control Panel show *4-Point* and *5-Point* calibration options. Use the *9-Point w/Linearization* option.

- TAB to the *Begin Linearization* button and press [Enter].

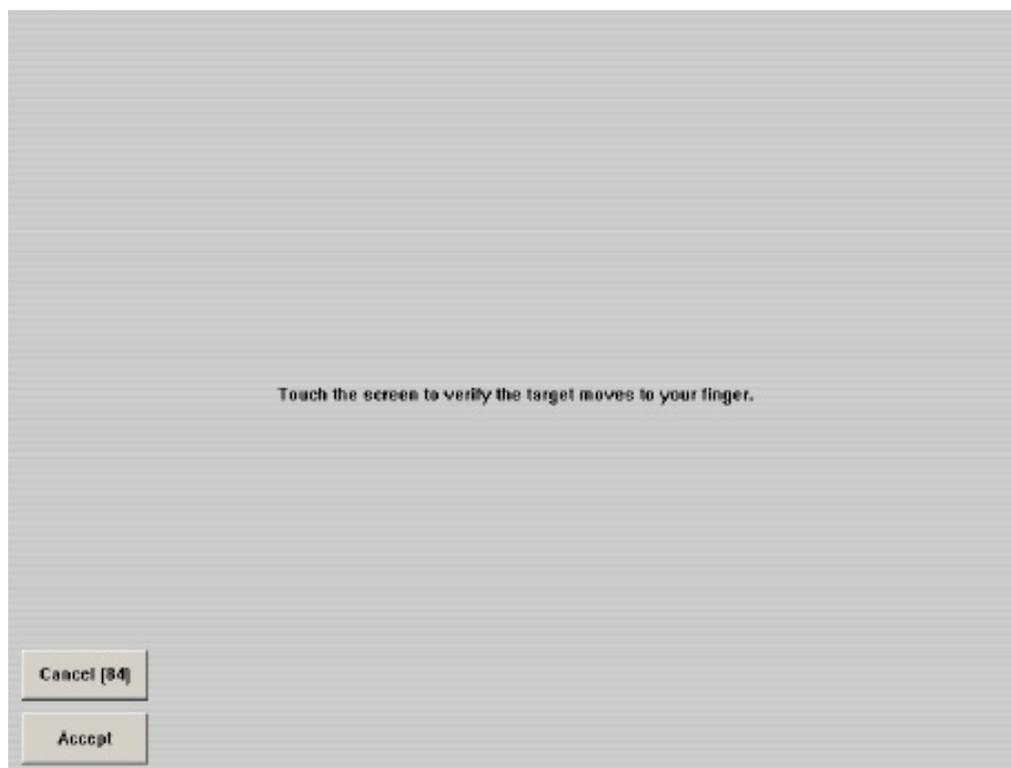


5. Touch the center of the target. Pull your finger a few inches away from the screen when you see the *Release* message.

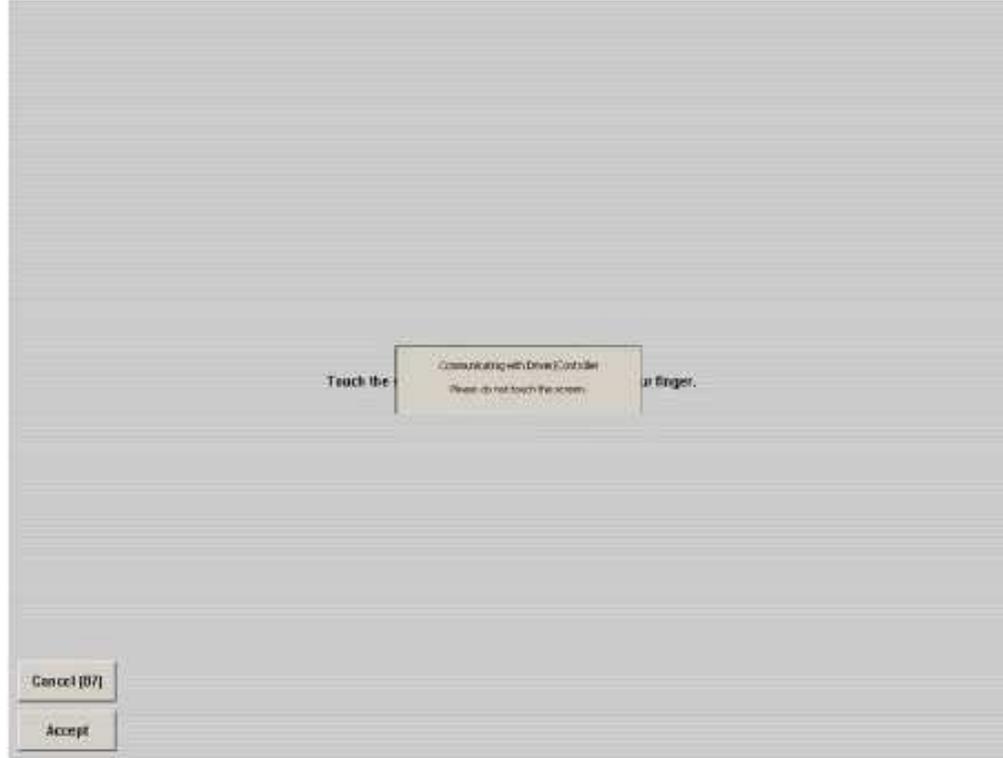


6. Repeat the process for each target location as they appear.
7. After all targets have been touched a test screen displays. Touch the screen in various locations to verify the calibration results. Select **Accept** if you are satisfied with the results. If not, select **Cancel** and repeat the process.

Note: Do not touch ESC to exit from this screen.



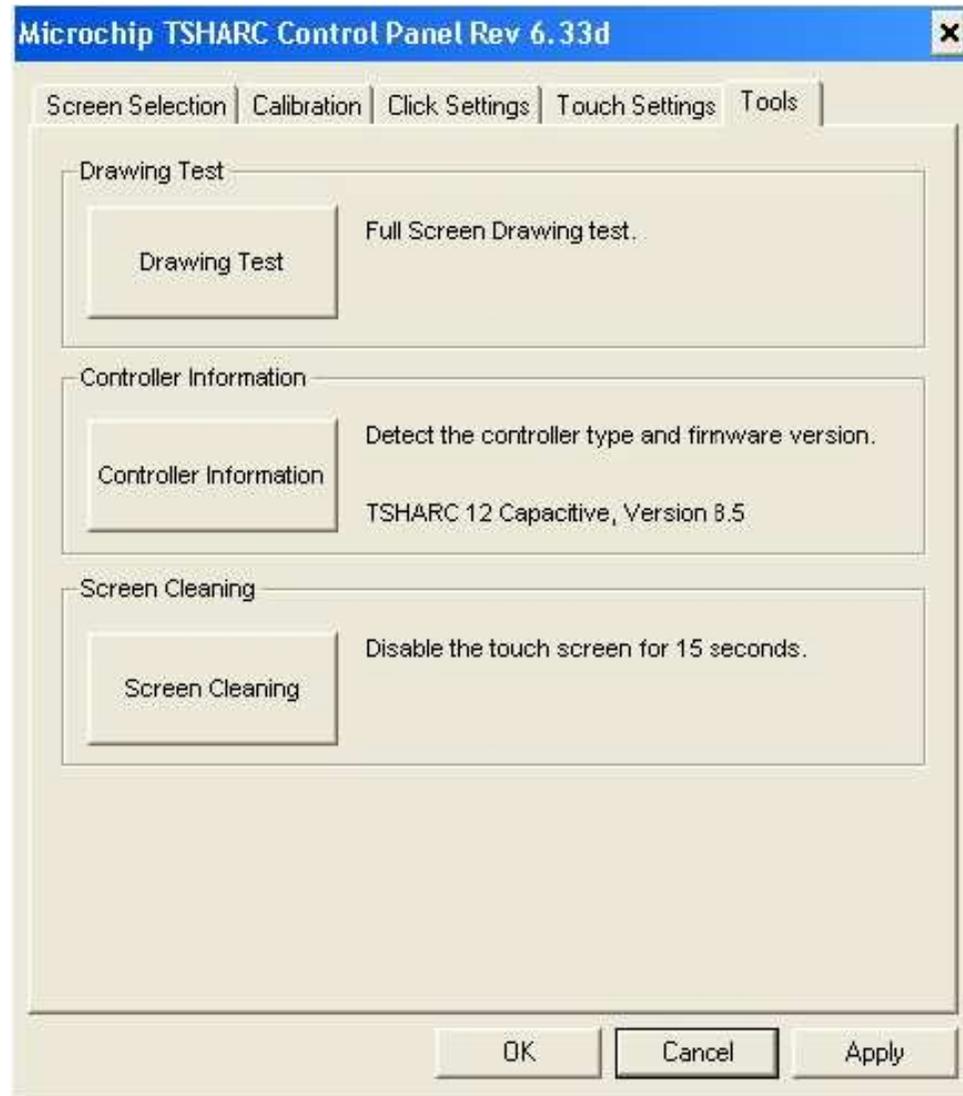
8. After touching **Accept** you are warned to not touch the screen.



Caution: Touching the screen during this time can cause the application to hang. This screen automatically closes after the touch controller has completed communicating. When complete, the system returns to the desktop with the TSHARC Control Panel displayed.

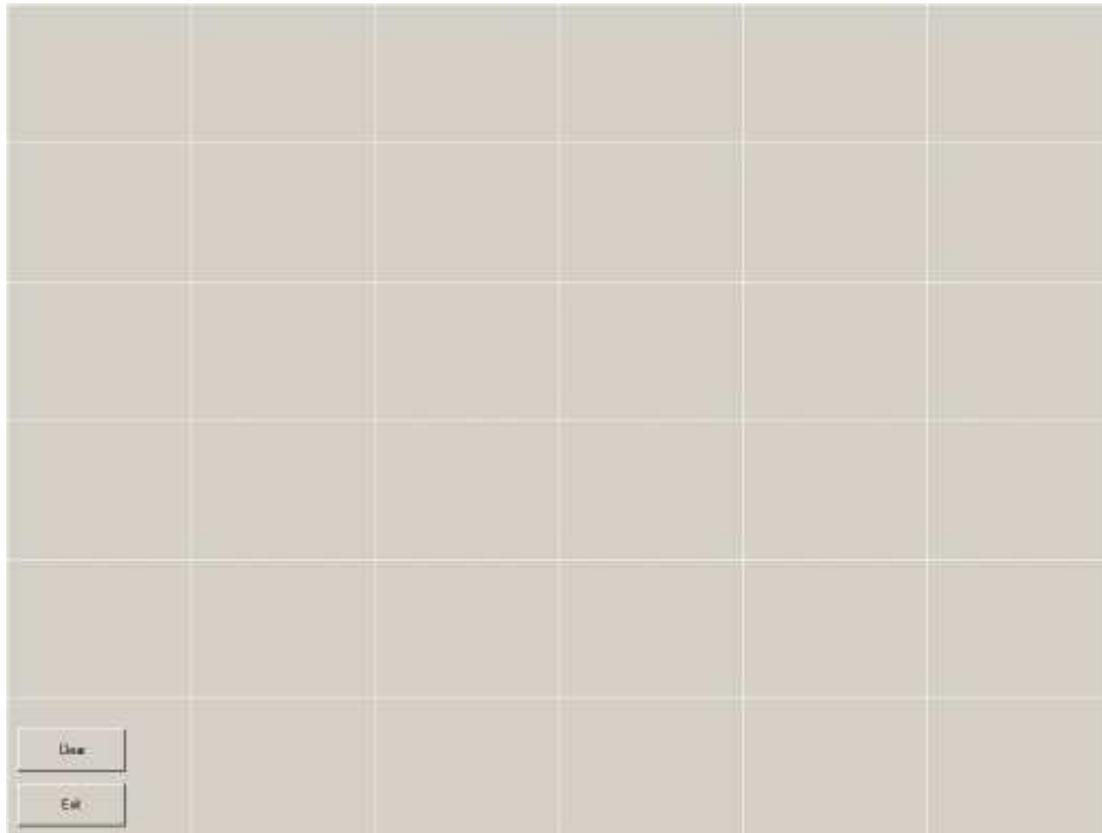
Verifying the Calibration

1. Select the Tools tab.
2. Select the Drawing Test button.



3. Test the calibration on the draw screen.

Touch the screen in various spots and trace each of the horizontal and vertical lines, including the border around the screen.



In this test, all touches are persistent, including touch downs (green dots) and touch ups (red dots).

After tracing the lines, review the drawn lines to make sure they closely follow the underlying pattern. Pay close attention to the edges of the display and the corners since this is where an incorrect calibration is most noticeable. If a line or point appears to be outside the pattern, try pressing the area to see how far the cursor is from the touch point. If the registered touch is greater than 7 mm away from where the touch occurred, repeat the calibration.

4. Select **Exit** to close this screen and to return to the Microchip TSHARC Control Panel.
5. Select the **Calibration** tab to repeat the calibration procedure or select **Apply** and then **OK** if you are satisfied with the results and want to close the application.

Caution: This application **must** be closed before a display hot swap occurs. If the display is hot swapped while this application is open, the system can hang.

Optional Settings

After the touch screen is calibrated, adjust the other features to meet your personal preferences.

- Double-Click Option
- Right-Mouse Click
- Touch Modes
- Touch Sounds
- Task Bar Pull Up
- Touch Offset

Chapter 7: Configuring AMT

This chapter explains how to configure an NCR SelfServ 60 so it can be accessed remotely using Intel Management Technology (AMT).

Configuring the 7409 Terminal

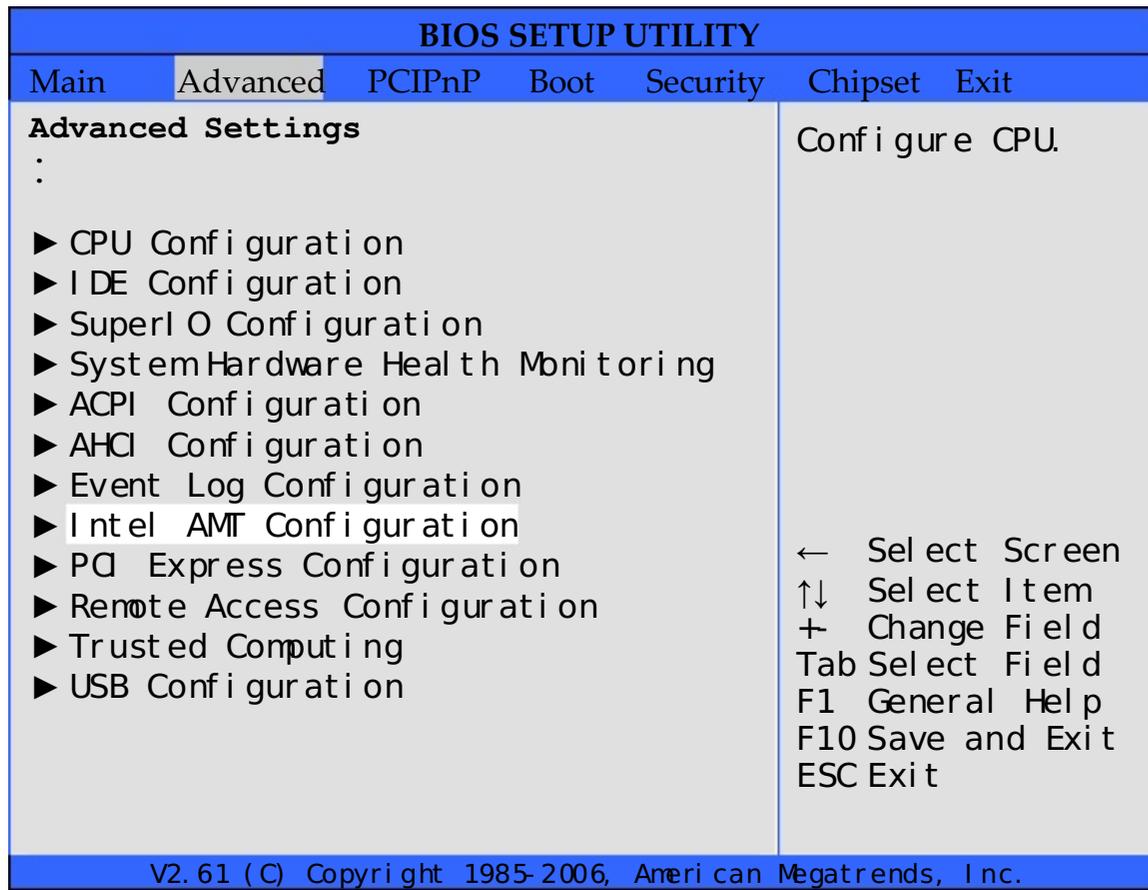
1. Re-boot the terminal.
2. When you see the message

Press DEL to enter setup

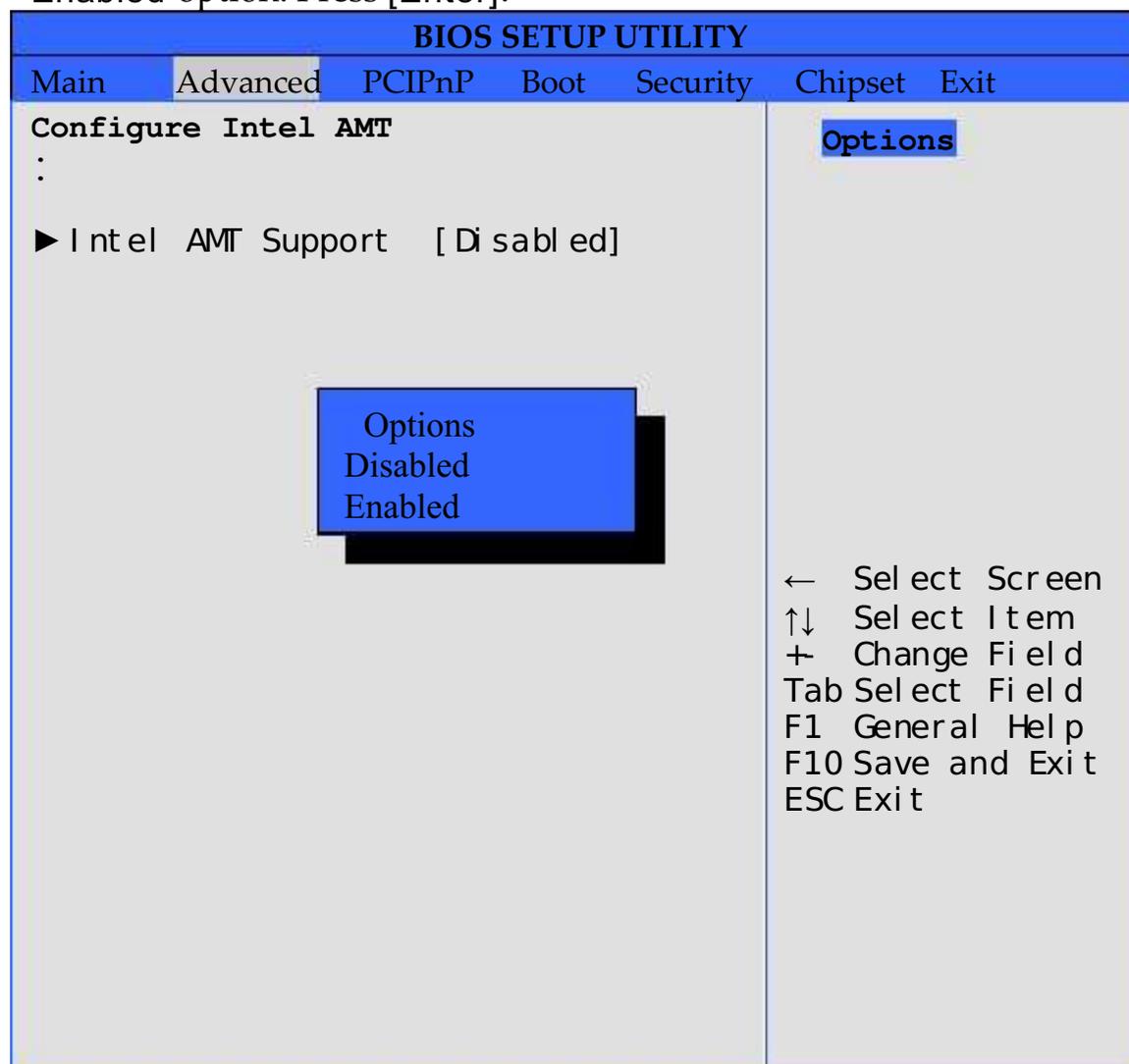
press [Del] to start the utility.

BIOS SETUP UTILITY		
Main	Advanced	PCIPnP Boot Security Chipset Exit
System Overview		NCR BIOS 6.2.4.0
:		Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
AMIBIOS		
Version	: 08.00.15	Use [+] or [-] to configure system Time.
Build Date	: 07/16/08	
ID	: 0AB0T020	
Processor		
Genuine Intel (R) CPU	575 @ 2.00GHz	
Speed	: 2000MHz	
Count	: 1	
System Memory		
Size	: 462MB	← Select Screen
System Time		↑↓ Select Item
System Date	[Sat 08/09/2008]	+ Change Field
		Tab Select Field
		F1 General Help
		F10 Save and Exit
		ESC Exit
V2.61 (C) Copyright 1985-2006, American Megatrends, Inc.		

- Under the *Advanced* tab, select Intel AMT Configuration and press [Enter].

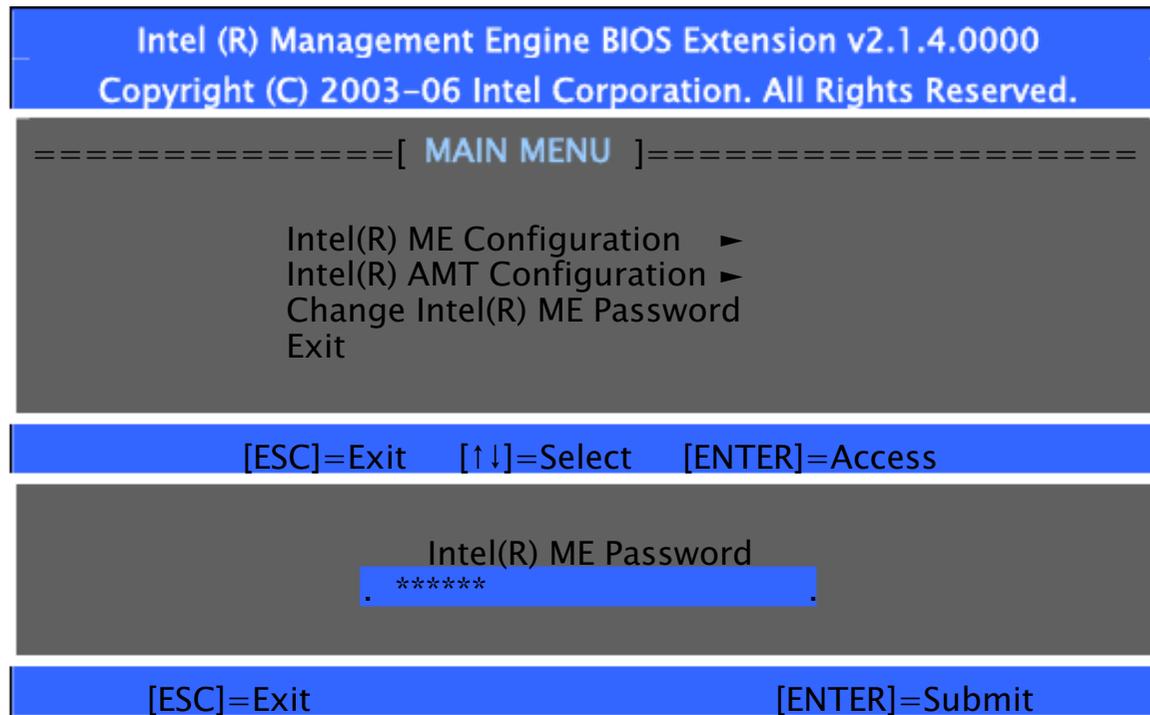


4. Enable Intel AMT Support. Press [Enter] and then arrow down to highlight the Enabled option. Press [Enter].



5. Press F10 and [Enter] to *Save and Exit*.
6. During re-boot watch for the following message:
 Press <CTRL-P> to enter Intel (R) ME Setup
 This message occurs immediately after the NCR logo disappears. At that moment press Ctrl-P.

- The Intel® Management BIOS Extension is displayed. The first time this program is entered you must use the default password. Enter the default Intel ME Password (*admin* in all lower case) and press [Enter].

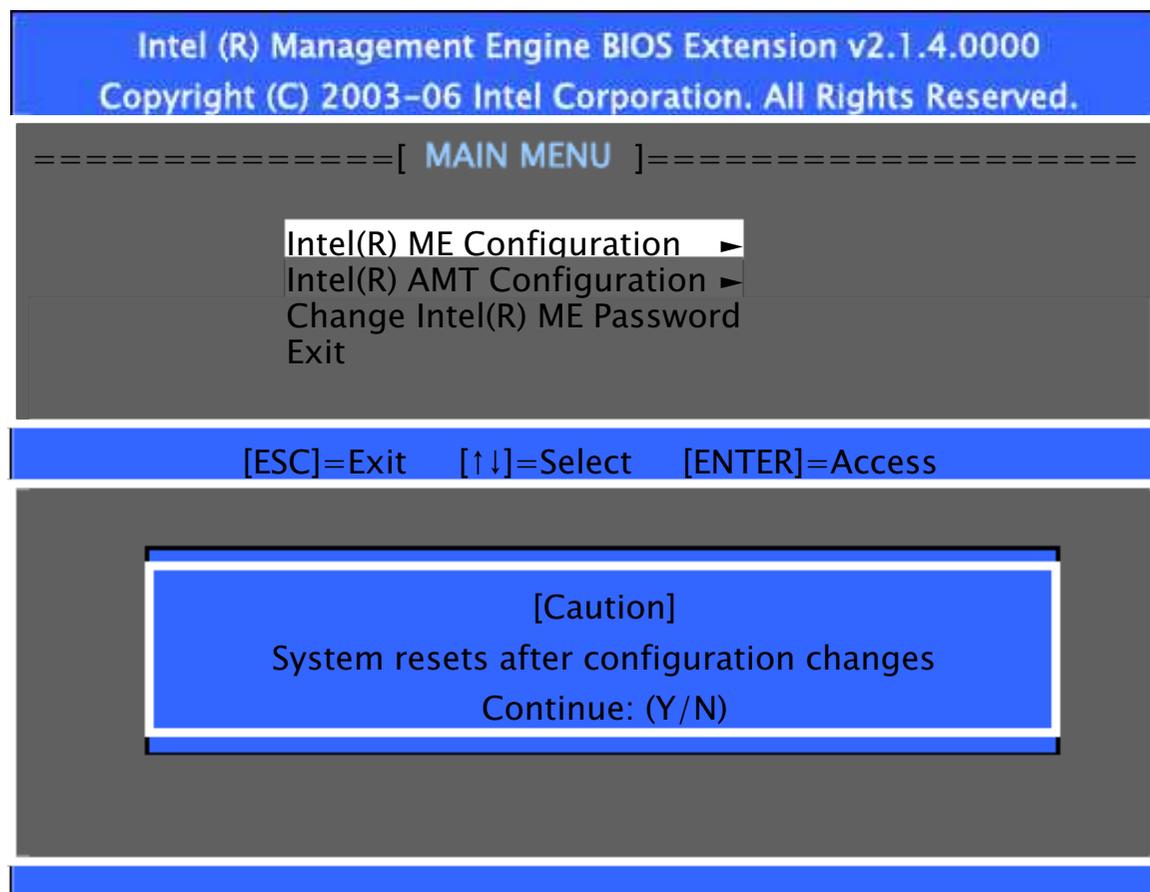


- Enter the new password (write it down to remember). The password must contain *upper, lower, symbol, & numeric* characters.

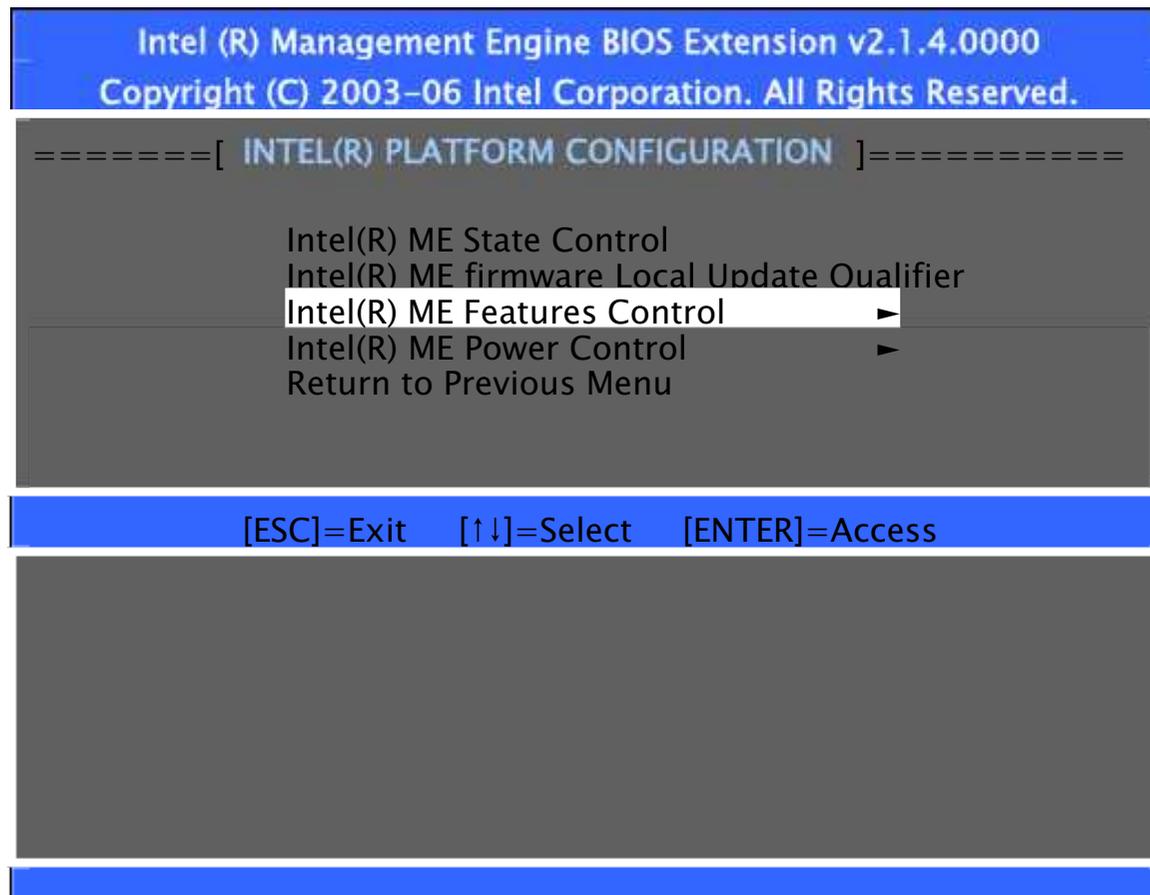
Example: Ncr@2008

You must enter the password twice for verification.

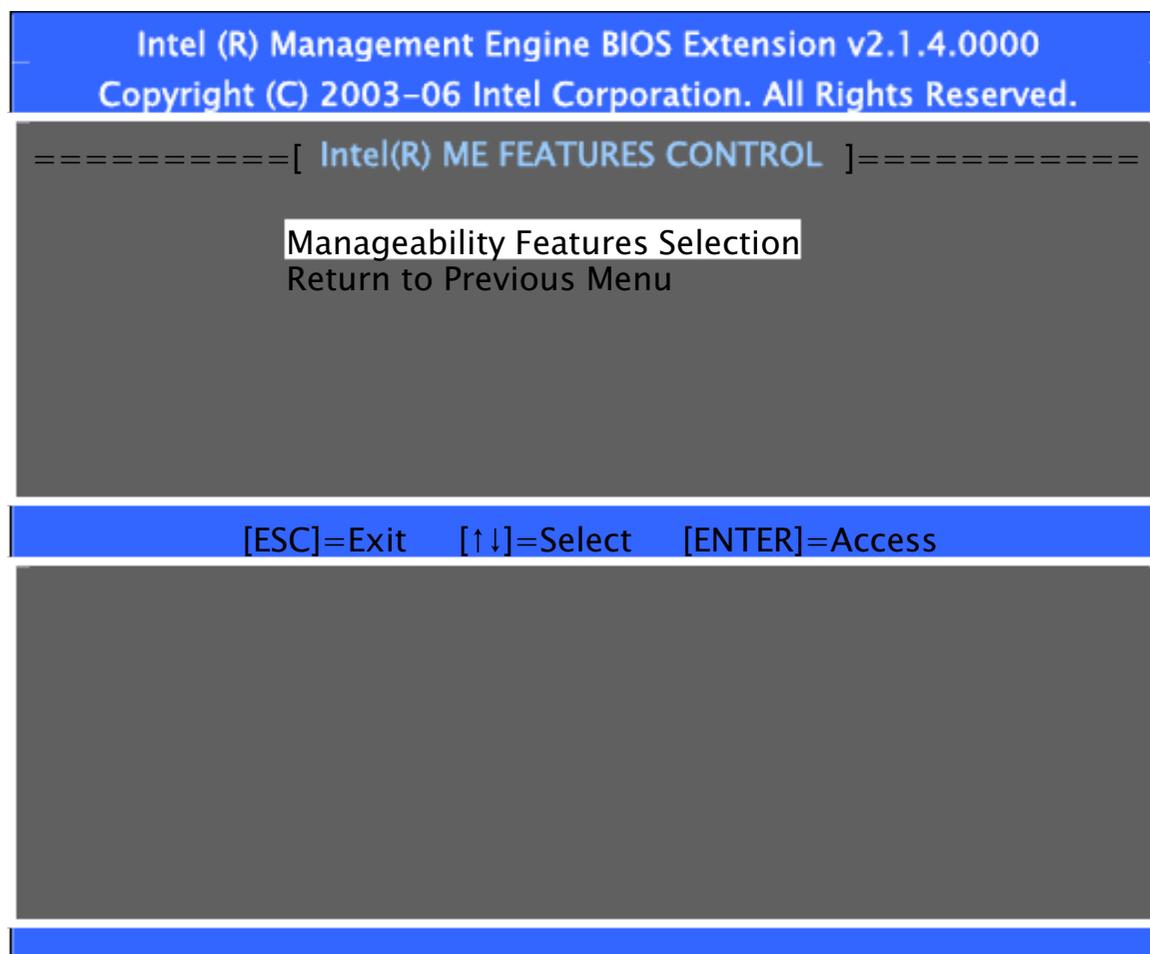
- Highlight *Intel(R) ME Configuration* and press [Enter].



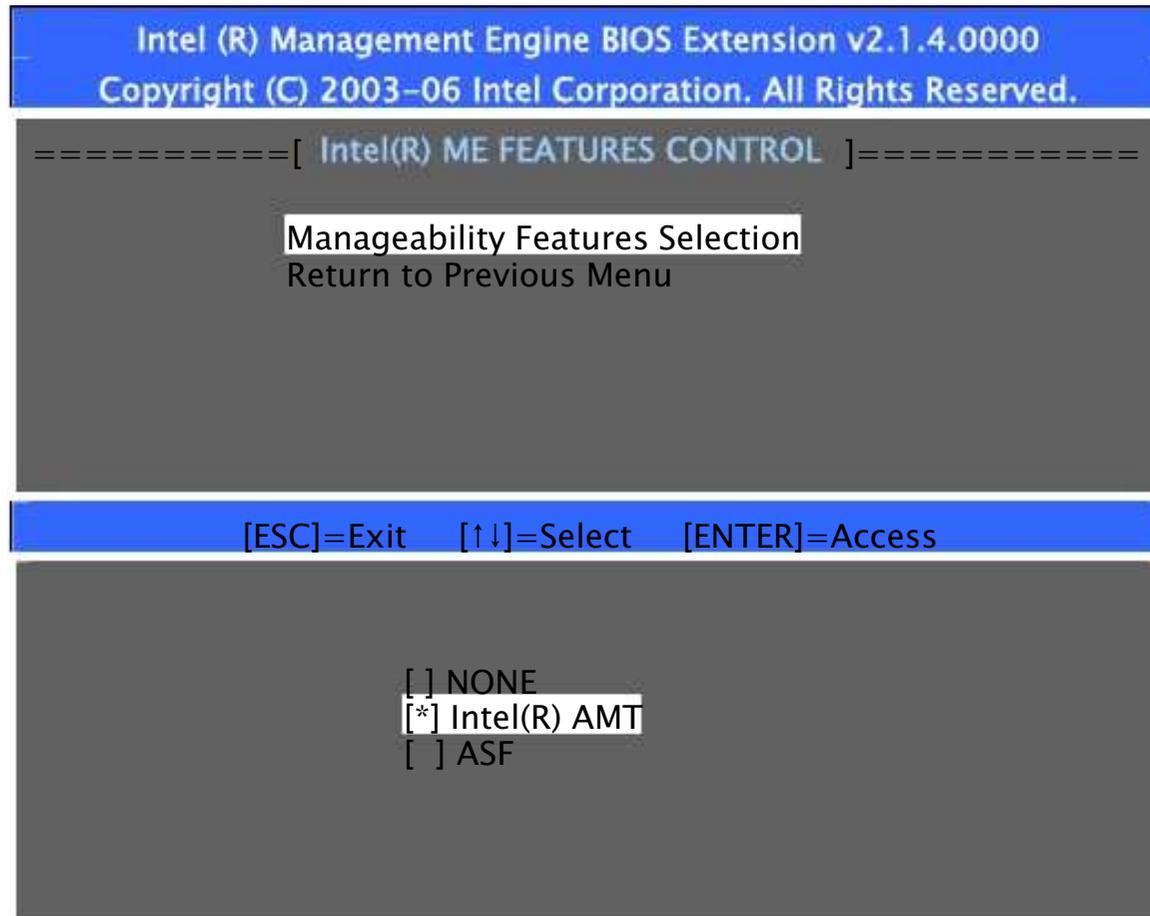
10. Enter Y at the warning message to continue.
11. Highlight *Intel(R) ME Features Control* and press [Enter].



12. Highlight *Manageability Feature Selection* and press [Enter].



13. Highlight *Intel(R) AMT* and press [Enter].



14. Highlight *Return to Previous Menu* and press [Enter].
15. Again, highlight *Return to Previous Menu* and press [Enter] to exit the program.
16. Highlight *Exit* and press [Enter], then [Y] to confirm exit.
17. Log back into the Intel(R) Management Engine.
- As previous, during re-boot watch for the Press <CTRL- P> to enter Intel (R) ME Set up message and press Ctrl-P.
 - Enter the password and press [Enter].

18. At the Main Menu highlight *Intel(R) AMT Configuration* and press [Enter].

```

Intel (R) Management Engine BIOS Extension v2.1.4.0000
Copyright (C) 2003-06 Intel Corporation. All Rights Reserved.

===== [ MAIN MENU ] =====

Intel(R) ME Configuration  ►
Intel(R) AMT Configuration ►
Change Intel(R) ME Password
Exit

[ESC]=Exit  [↑↓]=Select  [ENTER]=Access

[ESC]=Exit  [ENTER]=Submit

```

19. Highlight *Host Name* and press [Enter].

```

Intel (R) Management Engine BIOS Extension v2.1.4.0000
Copyright (C) 2003-06 Intel Corporation. All Rights Reserved.

===== [ Intel(R) AMT CONFIGURATION ] =====

Host Name
TCP/IP
Provisioning Model
Setup and Configuration  ►
Un-Provision
SOL/IDE-R
Password Policy
Secure Firmware Update

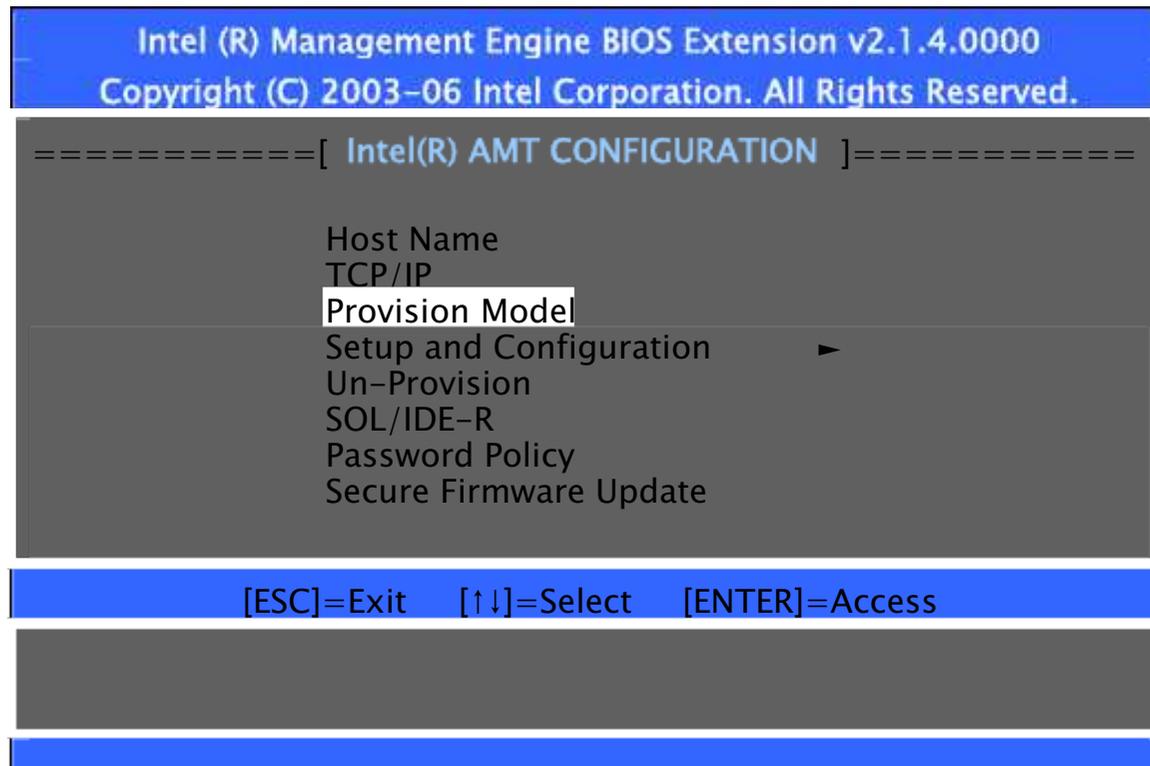
[ESC]=Exit  [↑↓]=Select  [ENTER]=Access

Computer host name
.
.

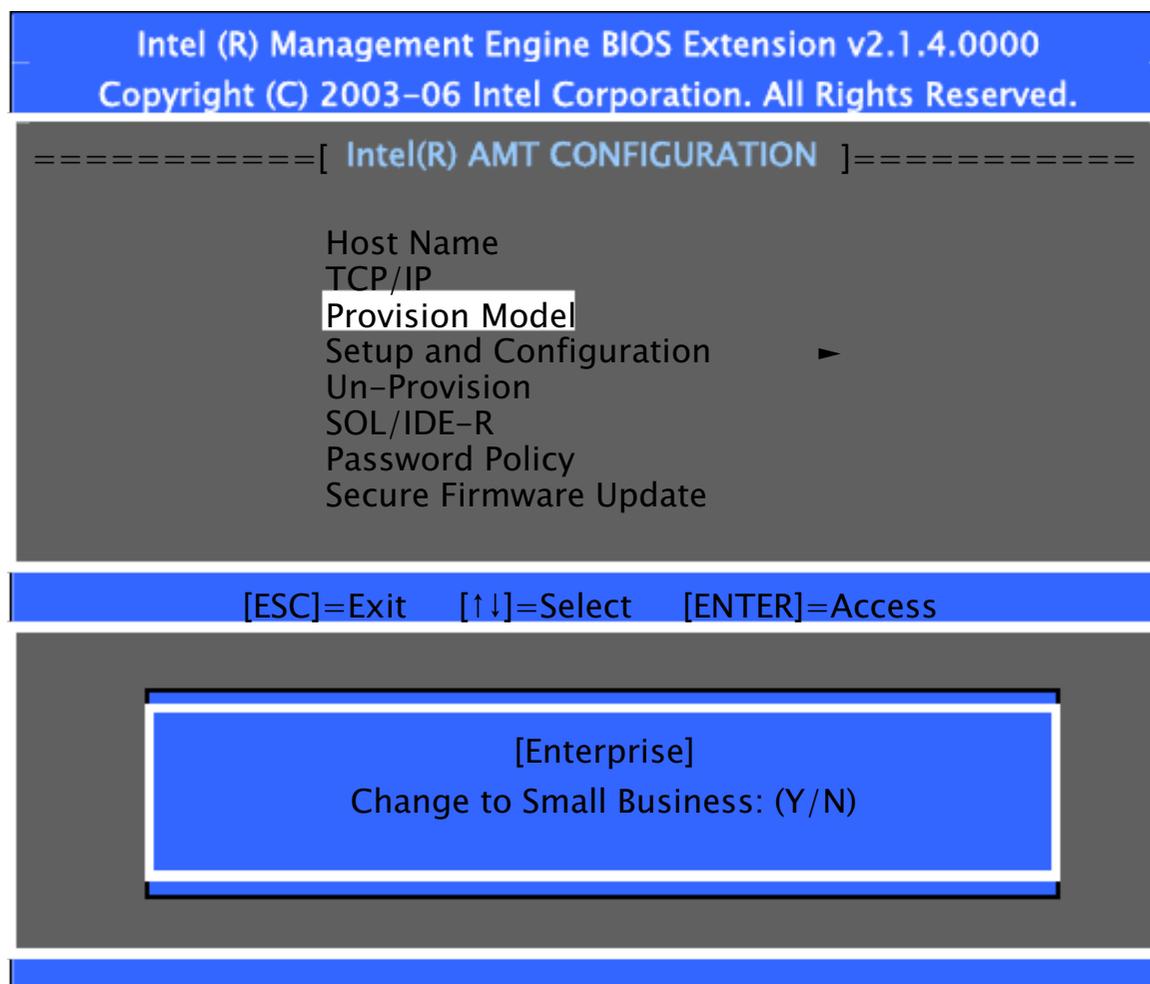
```

20. Enter a *Host Name* for this terminal (your choice) and press [Enter]. **Example:**
POS21

21. Verify Provision Model is set to *Small Business*. Highlight *Provision Model* and press [Enter].



22. The pop up message indicates whether your Provision Model is set as *Small Business* or *Enterprise*. Set the mode to **Small Business**, if necessary. If it is set to the default setting (*Enterprise*) you will not have access to the web- based interface.



23. Press [ESC] [ESC] and [Y] to confirm to exit.
24. The terminal reboots and is now ready to be accessed via a browser from a PC on the network.

Logging onto the 7409 Terminal Using AMT

After configuring the 7409 you should now be able to log into it from a browser on a remote PC.

1. Determine the target 7409's IP address.

Windows:

Start All Programs Accessories Command Prompt

Enter ipconfig and press [Enter]. The IP address is displayed.

Linux:

Switch Focus to the *Instructions* window.

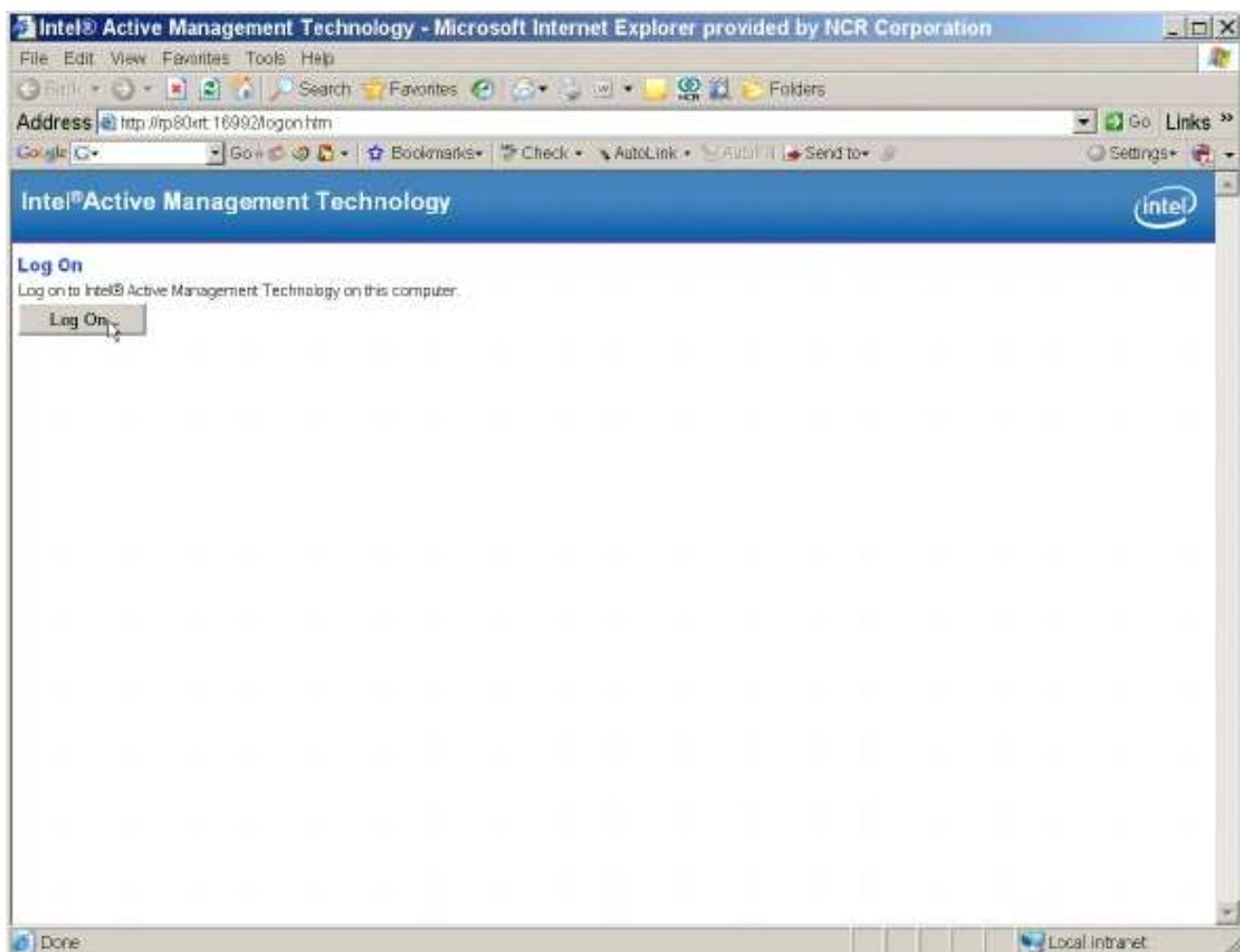
Enter ipconfig and press [Enter]. The IP address (Inet adder) is displayed.

2. Open the browser on the PC.
3. Enter the IP address in the Address line. Include the 16992 port.

ht t p: // < P A d d r e s s > : 16992

Note: The 16992 port number is fixed and cannot be changed.

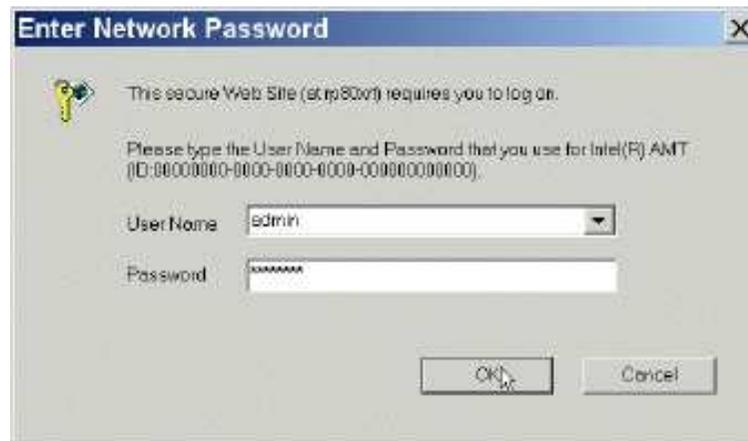
4. The AMT logon screen will appear if you are successful. Select the Log On button to log onto the terminal.



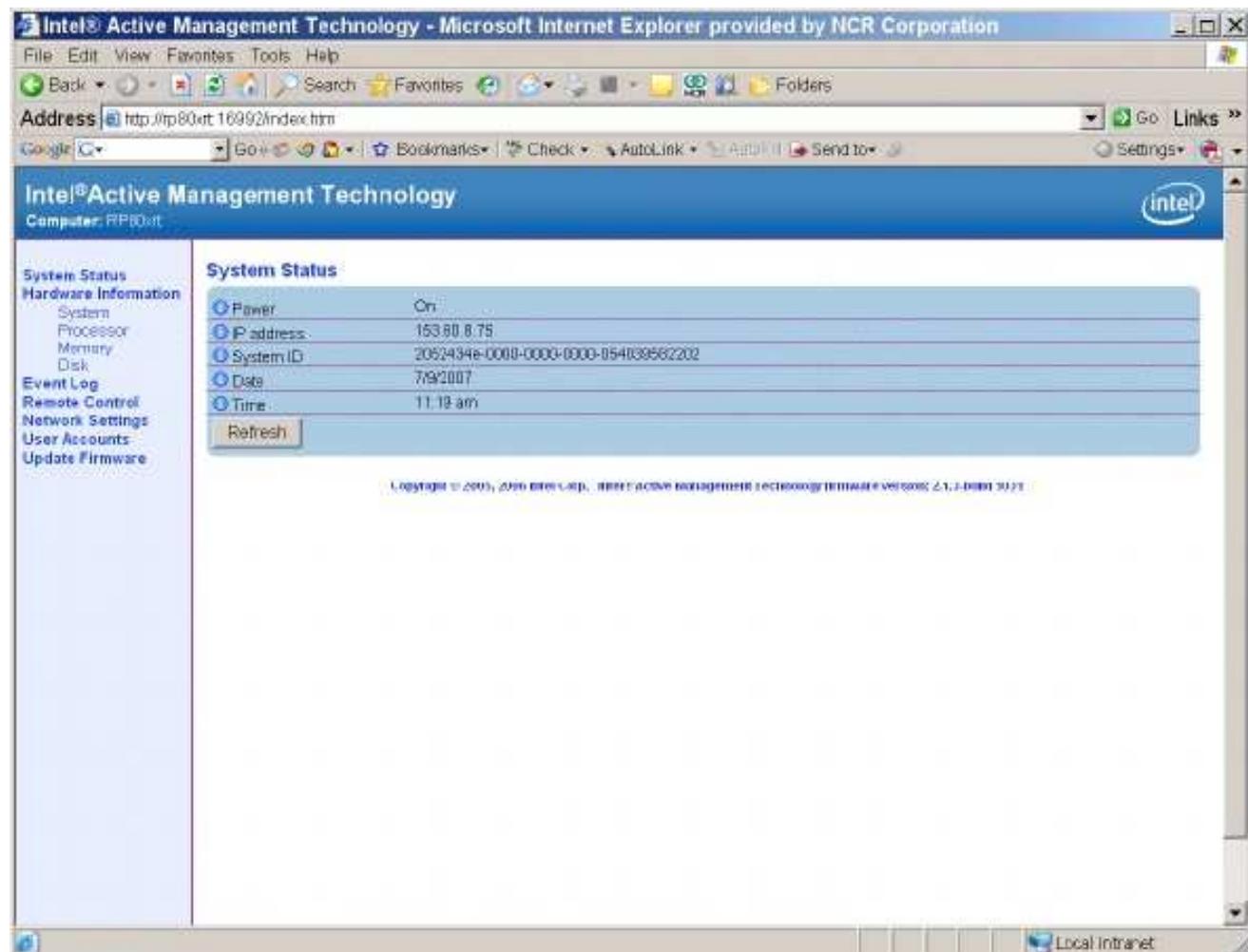
5. Enter the *UserName* and *Password* and then select OK.

UserName: admin

Password: <your password>



The System Status Screen is displayed. You can now control the AMT functions.



Removing the Hard Disks

If the hard disks are removed both disks must be re-installed in the same slots that they were removed from in order for Intel ME/AMT features to function correctly.

Chapter 8: Maintenance

Cabinet Cleaning Procedures

1. Disconnect the unit from the power outlet before cleaning.
2. Use a cloth lightly dampened with a mild detergent.
3. Do not use alcohol (methyl, ethyl, or isopropyl) or any strong dissolvent. Do not use thinner or benzene, abrasive cleaners, or compressed air.

Warning: Do not use any other types of cleaners such as vinegar, solvents, degreasers, or ammonia-based cleaners. These can damage the unit.

4. Avoid getting liquids inside the unit. If liquid does get inside, have a qualified service technician check it before you power it on again.
5. Remove external dust around the cooling vents.

Touch Screen Cleaning Procedures

1. Using a soft cloth dampened with isopropyl alcohol or a mild non-abrasive soap & water solution, gently wipe the touch screen clean.
2. Wipe the screen and edges dry.
3. Make sure the glass and screen edges dry completely before using the unit.

MSR Cleaning Procedures

MSR Cleaning Cards and MSR Treatment Cards may be purchased from NCR or KIC Products. For details, see <http://www.ncr-direct.com> or <http://www.kicproducts.com>.

MSR Cleaning and Treatment Cards

Part	Part Number	NCR Part Number
MSR Cleaning Card, Dry		998-0052929
MSR Cleaning Card, Wet	520522 (box of 50)	603-9014730
MSR Treatment Card	9436-2446 (box of 20)	497-0453056

MSR Treatment Card

The MSR Treatment Card is used to assist in protecting Magnetic Stripe Readers from Electrostatic Discharge (ESD), which can cause failures when swiping cards that have metallic hologram stripes.

Swipe the card through the MSR in a smooth motion. Only swipe it down ONCE and up ONCE. Allow the device to dry for 5 minutes before swiping any other cards.

Note: Each long side of the card may be used twice. Each short side of the card may be used only once. Thus, a single card can treat 6 MSR devices with one UP and one DOWN swipe per MSR device. These limits should not be exceeded due to the possibility of spreading contaminants from machine to machine and/or reducing ESD protection.



Note: If all six up/down swipes are not used on a fresh card it should be placed in a sealed (Ziploc) bag for future use.

Cleaning/Treatment Frequency

New MSR:

Prior to placing in operation, the MSR device should be swiped with the MSR Treatment Card.

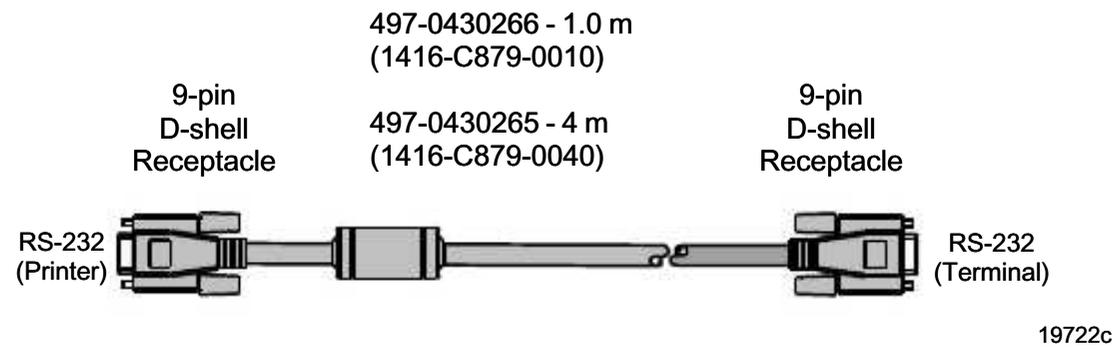
Existing MSR:

An existing MSR should be cleaned using an MSR Cleaning Card before treating it with a MSR Treatment Card. For low use retail establishments, the cleaning and treatment procedures should be followed at least once per month. In areas of extremely high traffic (in excess of 500 swipes per day) or an operating environment that is high in contaminants, such as found in the food service industry, a weekly cleaning and treatment should be performed.

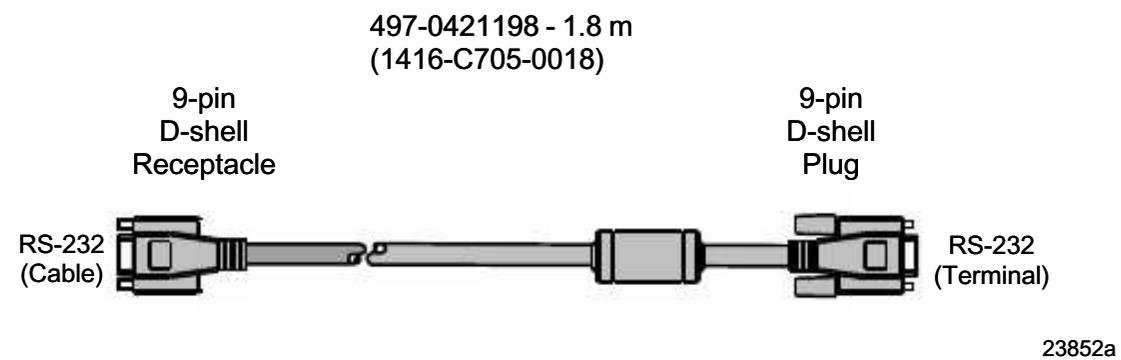
Appendix A: Cables

Printer Cables

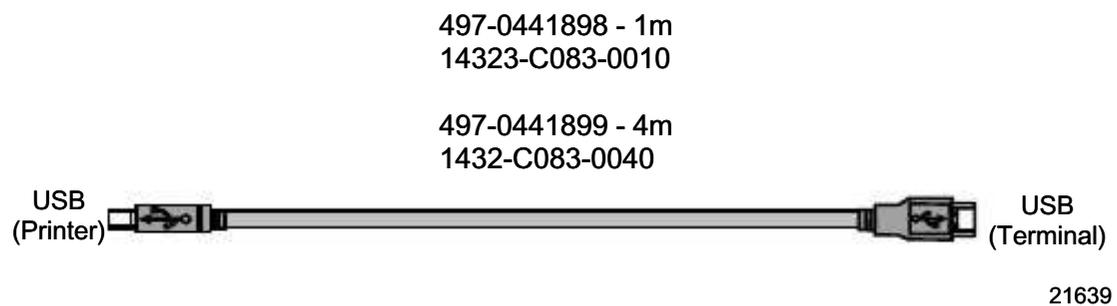
RS-232 (9-Pin to 9-Pin)



RS-232 Extender (9-Pin to 9-Pin)

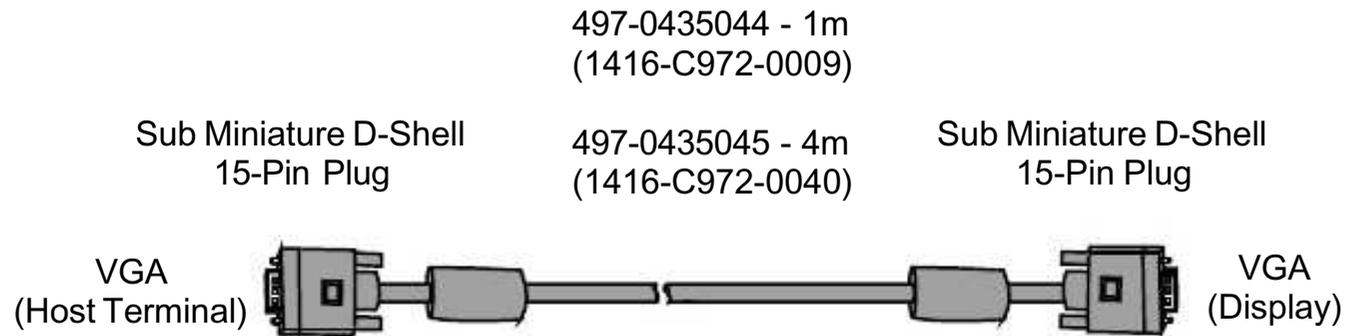


Standard USB



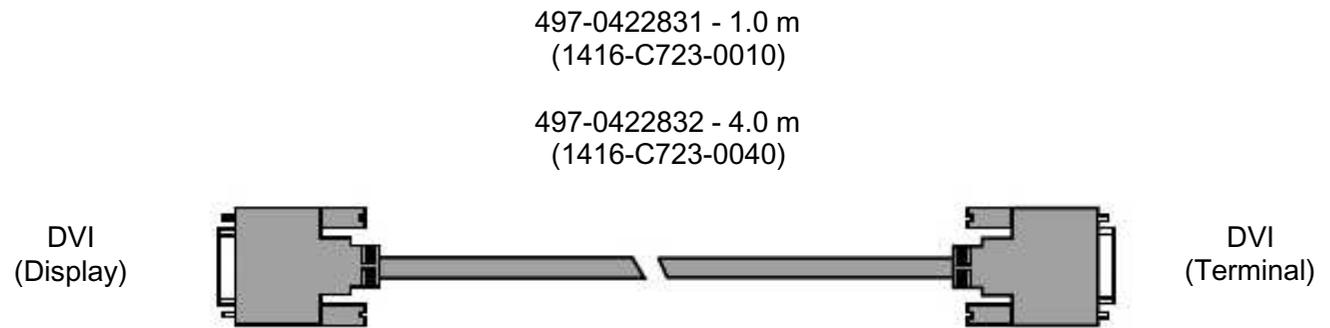
Display Cables

VGA (5942, 5964, 5965, 5975)



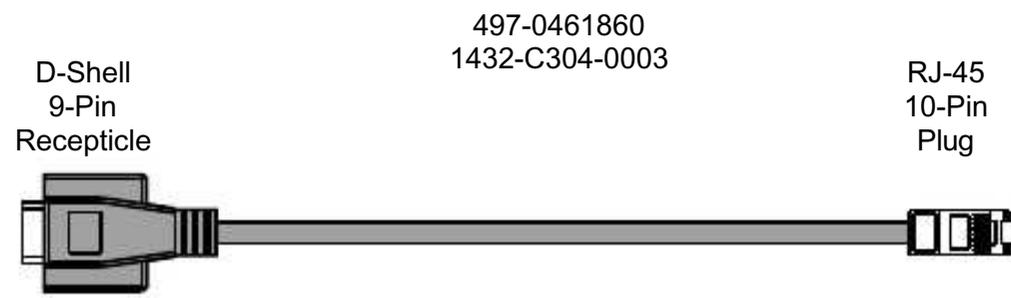
23433

DVI to DVI



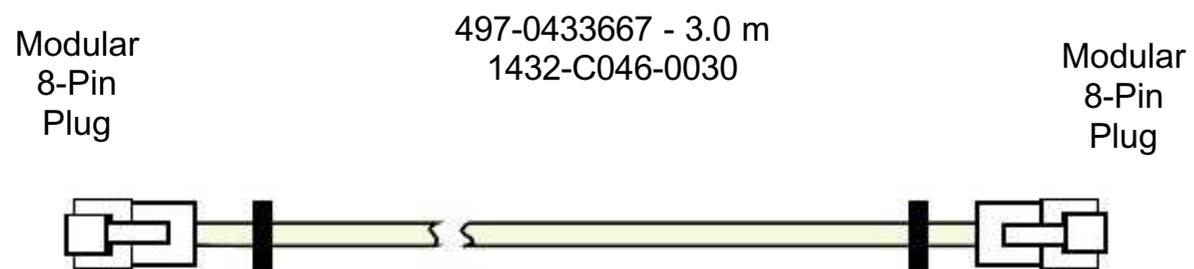
26907

RJ-45 to RS-232 Serial Converter Cable



26675

Ethernet, 10/100/1000BaseT



22584a