

USER GUIDE

NCR RealPOS 60 (7601)

Release 2.0



B005-0000-2011
Issue E

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


-  **Caution:** 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.
-  **Caution:** This product does not contain user serviceable parts. Servicing should only be performed by a qualified service technician.

Fuse Replacement

-  **Warning:** For continued protection against risk of fire, replace only with the same type and ratings of fuse.

Attention: Pour prévenir et vous protéger contre un risque de feu, remplacer la fusible avec une autre fusible de même type, seulement.

Lithium Battery Warning

-  **Warning:** 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.

Attention: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Battery Disposal (Switzerland)

Refer to Annex 4.10 of SR814.013 for battery disposal.

IT Power System

This product is suitable for connection to an IT power system with a phase-to-phase voltage not exceeding 240 V.

Peripheral Usage

This terminal should only be used with peripheral devices that are certified by the appropriate safety agency for the country of installation (UL, CSA, TUV, VDE) or those which are recommended by NCR Corporation.



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.

Grounding Instructions

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock.

The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor.

If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if you are in doubt as to whether the product is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the product's plug. **Repair or replace damaged or worn cords immediately.**

References

- *NCR RealPOS 60 Site Preparation Guide* (B005-0000-2011)
- *NCR RealPOS 60 Hardware Service Manual* (B005-0000-2013)
- *NCR RealPOS 60 Parts Identification Manual* (B005-0000-2014)

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Appendix A: Powered Serial Port Settings

Revision Record

Issue	Date	Remarks
A	Oct 2010	First Issue
B	Aug 2012	Release 1.1
C	Jul 2012	Updated Solid State Optimization chapter
D	Jun 2013	Release 2.0

Chapter 1: Product Overview

Introduction

The NCR RealPOS 60 (also known as NCR 7601) is a compact POS solution that combines the reliability and security of a retail-hardened POS terminal with the performance and flexibility of industry-standard PC technology. With an open architecture and Intel® processor, the NCR RealPOS 60 supports the latest POS applications for Windows® to help you service your customers quickly and efficiently. And, it all fits in a small footprint that helps conserve valuable space at the Checkstand.

To complete your POS solution, choose from NCR's extensive line of peripherals, including printers, displays, keyboards and scanners. The NCR RealPOS 60 enables you to protect your investment in legacy serial devices or choose from the growing list of USB peripherals. The powered peripheral ports and 24V printer interface simplify cable management and reduce potential points of failure.

Product IDs

Major Model	CPU
7601-3000	RealPOS 60, Intel Celeron G1610T, Dual Core 2.30 GHz Celeron, 4 GB DDR3, Diskless
7601-4000	RealPOS 60, Intel Core-i3 3240T Dual Core 2.90 GHz Celeron, 8 GB DDR3, Diskless

Configurations

The NCR RealPOS 60 is an affordable, retail-ready POS solution that provides outstanding value for any size retailer. It supports a broad range of certified NCR peripherals and applications. The RealPOS 60 features the smallest form factor in its class and offers versatile configuration and mounting options.

Choose from NCR's extensive line of peripherals, including printers, displays, keyboards and scanners. The RealPOS 60 provides flexible connectivity options to power peripherals as well as dual display support for customer-facing advertising and messaging. The system can be configured modularly or stacked on an NCR 2181 Cash Drawer in an integrated fashion.



Modular Configuration



Stacked Configuration

An optional stand is available to mount the terminal vertically.

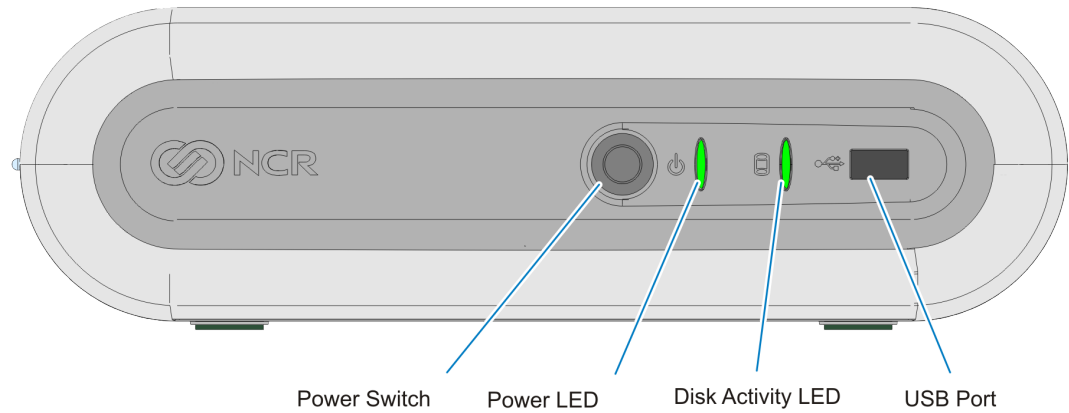


Vertical Stand Configuration



Flush Wall Mount (7409-K502)

Operator Controls

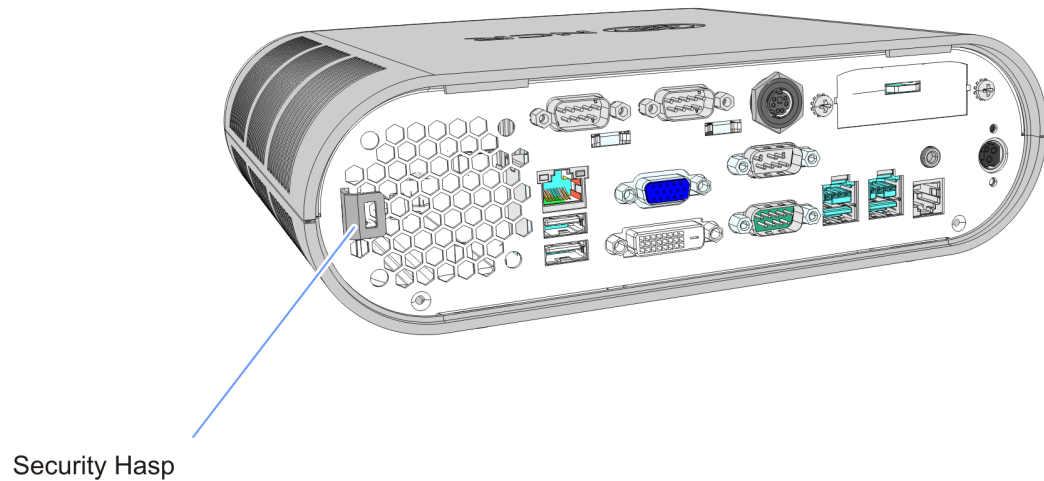


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[See "LED Diagnostic Indicators" on page 34](#)[See "LED Diagnostic Indicators" on page 34](#) for more information about the LED Diagnostic Indicators.

Cabinet Security

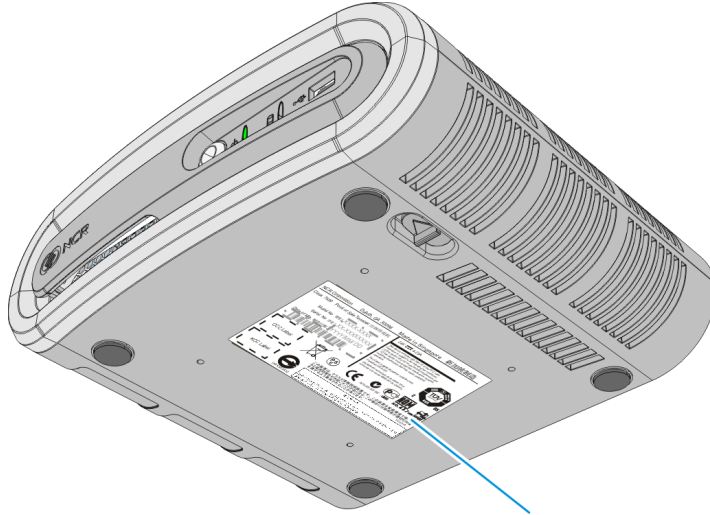
The 7601 has easy access to the internal components. However, the case can be secured to a fixed object (desk, pole, etc) by attaching a standard Kensington lock to the Security Hasp. In addition a small padlock can be attached to the hasp to prevent the unit from being opened.



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Serial Number/Model Number Label

The serial number and model number are included on the Certification Label located on bottom of the terminal. A Microsoft Certificate of Authenticity (COA) label is included if the terminal is ordered and shipped with a pre-installed Microsoft Operating System. There are two types of Microsoft COA stickers. Depending on the Microsoft Operating System ordered the label is located on either the Bottom Cover for Windows 7 or next to the Certification Label for SLEPOS, POSReady 2009, and POSReady 7.



Model/Serial Number Label

28563a

Features

Motherboard

- Intel's Q67 PCH Chipset
- Intel Celeron G1610T (7601-3xxx)
- Intel Core-i3 CPU (7601-4xxx)
- Up to 4GB DDR3 Memory, 1333 MHz, 2 Memory Sockets (7601-3xxx)
- Up to 8GB DDR3 Memory, 1333 MHz, 2 Memory Sockets (7601-4xxx)
- Serial ATA (SATA) Hard Drive Interface
- High-speed 10/100/1000 Mb Ethernet
- Four Powered Serial ports
- DVI-D connector
- VGA connector
- PS/2 Connector supporting Mouse and Keyboard through a Y-cable
- USB Ports
 - One 12V USB+Power port
 - One 24V USB+Power port
 - Two Type-A USB Connectors



Note: For security purposes individual USB ports can be disabled in the BIOS at:
Chipset >> PCH-IO Configuration >> SB USB Configuration

- Dual cash drawer support from one connector using Y-cable
- Audio Line Out (Unamplified)
- Three 12V USB+Power ports on a USB Daughter Card (Optional)
- DC Power Jack for Power Brick

Storage Media

- 2.5" SATA Hard Drive (Feature)
- 2.5" SATA Solid State Drive (Feature)

Power Supply

- 150W Output power
- Switching Power Supply, External 24V Adapter
- MEPS Level V mark (efficiency 87% minimum)
- Supports 24V retail printers at 55W maximum when connected to 7601

Operating Systems

- Windows 7 Professional
- Windows XP Professional, SP3
- SLEPOS11 SP2
- POSReady 2009
- POSReady 7

Graphics

The Motherboard has integrated graphics on board. PCI Express x16 graphics adapters are not supported.

Output ports

Dual independent displays in Concurrent (Clone) and Extended Desktop modes are supported by the 7601.

VGA

Analog display signals for legacy monitors. Standard DB-15 connector on rear IO.

DVI

Standard DVI-D connector on rear IO, Foxconn QH11121-DBGH-4F or equivalent.

Power Management

The BIOS supports the Advanced Configuration and Power Management Interface (ACPI) 3.0 specification. A key feature of ACPI is that the operating system, not the BIOS, configures and implements power management. The 7601 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 7601 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 7601 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.

- S2: Not supported
- 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.
- "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					
	S0Working	S1Standby	S2	**S3 Suspend to RAM	S4Hibernate	**S5Soft Off
Supported	Y	Y	N	Y	Y	Y
Description	Fully Functional	<ul style="list-style-type: none"> • Video Back Light Off • HDD Off • Cache Flush • Memory in Slow Refresh • CPU Halted 		<ul style="list-style-type: none"> • Video Back Light Off • HDD Off • Cache Flush • Memory in Slow Refresh • CPU Halted 	<ul style="list-style-type: none"> • Video Back Light Off • HDD Off • Cache Flush • Memory in Slow Refresh • CPU Halted 	OFF
Power Supply Status	On	On		Powered Down**	Powered Down**	Powered Down**
Power Consumption*	37	24		2	1	<1
	Wake Options					
Power Switch	N/A	Y		Y	Y	Y
PS/2 Keyboard	N/A	Y		Y	N	N
PS/2 Mouse	N/A	Y		Y	N	N
USB Keyboard	N/A	Y		Per O/S	N	N
USB Mouse	N/A	Y		Per O/S	N	N
LAN (magic packet)	N/A	Y		Y	Y	Y
RTC Alarm	N/A	Y		Y	Y	Y
Serial Port (RI)	N/A	Y		N	N	N

Note: Power consumption based on the following configuration with no peripherals Intel Celeron 900, 512MB DIMM, HDD

*Maintains small voltage to support wake circuits)

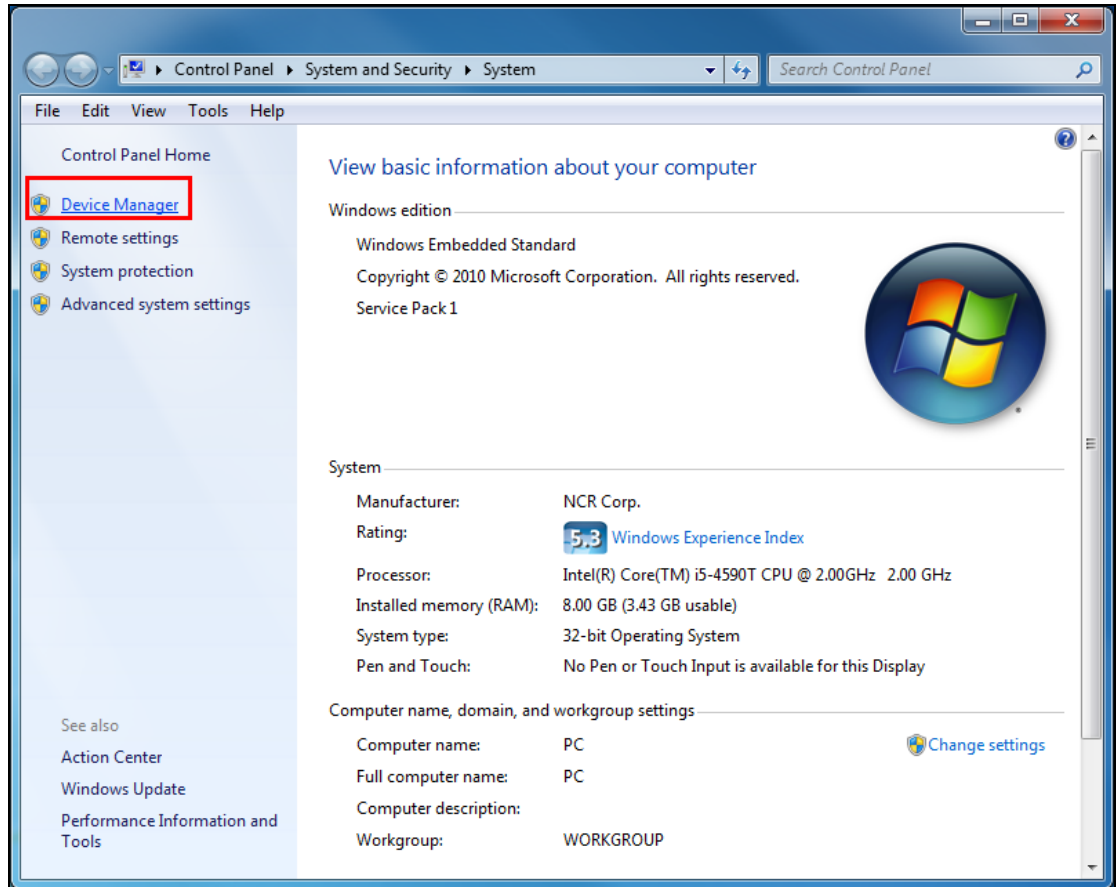
**The external power supply is ON while in S3-S5. The motherboard shuts down all power circuits except for a small voltage to support wake circuits. Power to the 24V USB printer port and the Cash drawer is also disconnected while in S3-S5

Enabling Wake on LAN

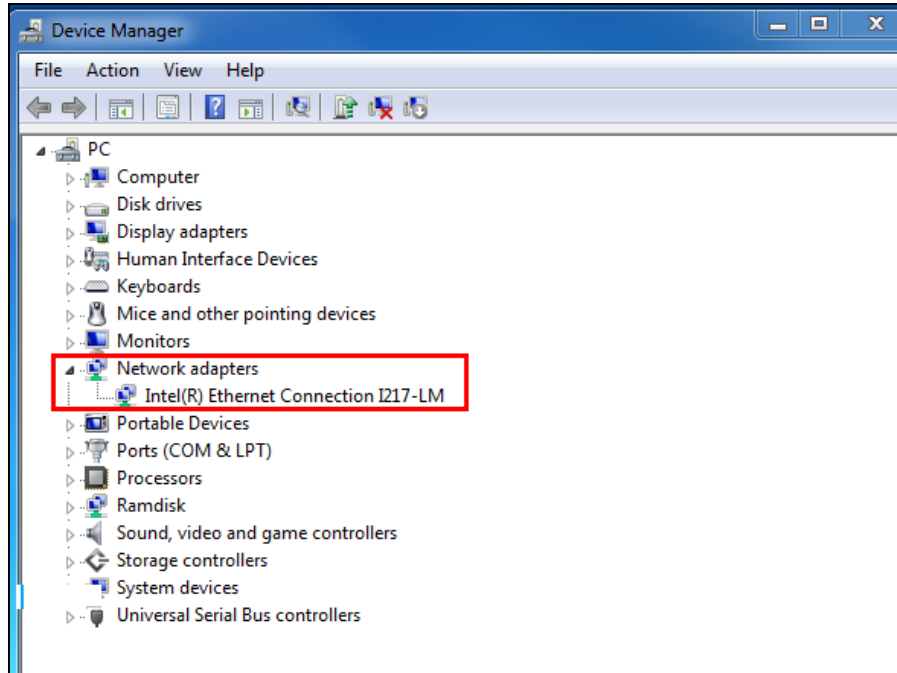
In order for Wake on LAN to function the Network driver must be enabled (factory default). The procedure for enabling the driver depends on which operating system you are using.

Windows 7

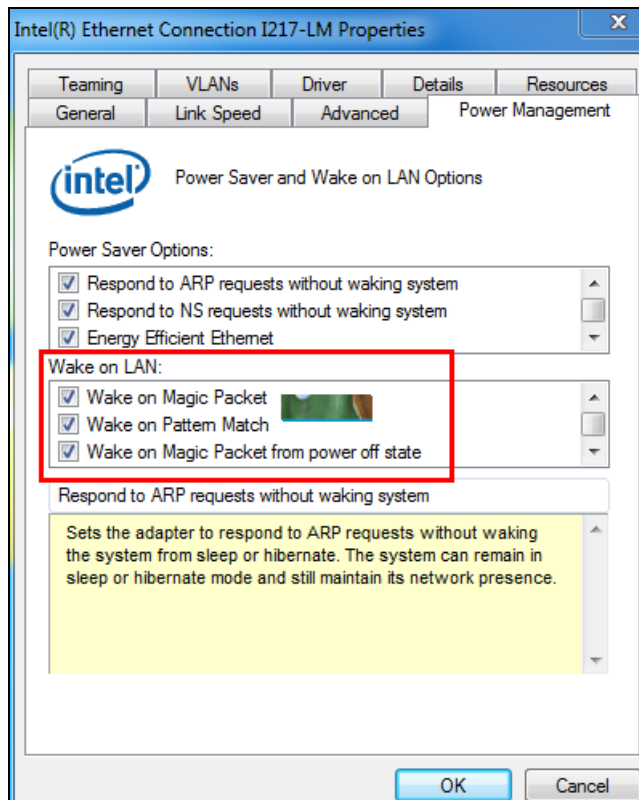
1. **Computer >> System Properties***tab* >> **Device Manager**



2. Select **Network adapters**.
3. Right-click **Intel(R) Ethernet Connection J217-LM** >> **Properties**.



4. Under the *Power Management* tab, *Wake on Magic Packet* and *Wake on Pattern Match* and *Wake on Magic Packet from power off state* option boxes should be checked. Select **OK** after making any changes.



ACPI Processor C-States

ACPI defines the power state of system processors while in the G0 working state as being either active (executing) or sleeping (not executing). Processor power states are designated C0, C1, C2, C3, ...Cn.

The C0 power state is an active power state where the CPU executes instructions. The C1 through Cn power states are processor sleeping states where the processor consumes less power and dissipates less heat than leaving the processor in the C0 state.

While in a sleeping state, the processor does not execute any instructions. Each processor sleeping state has a latency associated with entering and exiting that corresponds to the power savings. In general, the longer the entry/exit latency, the greater the power savings when in the state.

To conserve power, OSPM places the processor into one of its supported sleeping states when idle. While in the C0 state, ACPI allows the performance of the processor to be altered through a defined "throttling" process and through transitions into multiple performance states (P-states).



Note: The 7601 Atom D2550 Processor supports C0 and C1 states. Support of deeper sleep states is not required due to its inherently low power consumption.

Operator Displays

NCR 5943 12.1-Inch LCD



The NCR 5943 LCD is an LED backlit LCD display (XGA, 1024 x 768). The display is powered by the terminal from a +12V USB Plus Power port. The remote mount must be ordered separately.

- LCD panel
 - Display Size: 12.1-inch
 - LCD Technology: TFT, Pixel Configuration: RGBW Rectangle
 - LCD Backlit Technology: LED-Backlit
 - Native Format: 1024x768, 262,144 colors: (RGB 6bits) color depth or greater
 - Viewing Direction: 12 o'clock
 - 50K hour minimum backlight ½ life at rated luminance
- VESA & Industry Standards
- Retail hardened display
- Dual video inputs, standard analog (DB15) video interface and DVI interface
- No OSD controls - all SW driven
- Flexible cable length options (compatibility with NCR 1m & 4m external cables)
- Clean (hidden) cable management
- ISO 3-Track/JIS 2-Track MSR (Optional)

NCR 5943 15-Inch LCD



The NCR 5943 LCD is an LED backlit LCD display (XGA, 1024 x 768). The display is powered by the terminal from a +12V USB Plus Power port. The remote mount must be ordered separately.

- LCD panel
 - Display Size: 15-inch
 - LCD Technology: TFT, Pixel Configuration: RGBW Rectangle
 - LCD Backlit Technology: LED-Backlit
 - Native Format: 1024x768, 262,144 colors: (RGB 6bits) color depth or greater
 - Viewing Direction: 12 o'clock
 - 50K hour minimum backlight ½ life at rated luminance
- Standard VGA and DVI video inputs
- VESA 75 Mounting Compliance
- Retail hardened display
- Standard VGA and DVI video inputs
- No OSD controls - all SW driven
- ISO 3-Track/JIS 2-Track MSR (Optional)
- Integrated speakers

NCR 5967 12-Inch Touch LCD



The NCR 5967 Touch LCD is an LED backlit LCD display (XGA, 1024 x 768) with capacitive touch screen. The display is powered by the terminal from a +12V USB Plus Power port. The remote mount must be ordered separately.

- LCD panel
 - Display Size: 12.1"
 - LCD Technology: TFT, Pixel Configuration: RGBW Rectangle
 - LCD Backlit Technology : LED-Backlit
 - Native Format: 1024x768, 262,144 colors: (RGB 6bits) color depth or greater
 - Display Mode: Normally white
 - Viewing Direction: 12 o'clock
 - 370 cd/m2 (typ), 300 cd/m2 (min) luminance to user
- 50K hour minimum backlight ½ life at rated luminance
- VESA & Industry Standards
- Spill proof and sealed
- Dual video inputs, standard analog (DB15) video interface and DVI interface.
- LCD LED Backlight is controllable using soft DDC/CI UTILILTY at full or reduced brightness (no physical DDC/CI UTILILTY buttons)
- ISO 3-Track/JIS 2-Track MSR (Optional)
- USB Port

NCR 5967 15-Inch Touch LCD



The NCR 5967 Touch LCD is an LED backlit LCD display (XGA, 1024 x 768) with capacitive touch screen. The display is powered by the terminal from a +12V USB Plus Power port. The remote mount must be ordered separately.

- LCD panel
 - Display Size: 15-inch
 - LCD Technology: TFT, Pixel Configuration: RGBW Rectangle
 - LCD Backlit Technology: LED-Backlit
 - Native Format: 1024x768, 262,144 colors: (RGB 6bits) color depth or greater
 - 50K hour minimum backlight ½ life at rated luminance
- Touch Sensor; Capacitive Touch, USB I/F
- Standard VGA and DVI video inputs
- VESA 75 Mounting Compliance
- Retail hardened display
- Standard VGA and DVI video inputs
- No OSD controls - all SW driven
- ISO 3-Track/JIS 2-Track MSR (Optional)
- Integrated speakers
- USB Port

NCR 5954 15-Inch DynaKey



The NCR RealPOS 5954 USB DynaKey is a Point-of-Sale (POS) keypad with a built-in 15-inch flat panel Liquid Crystal Display (LCD). Unique to the DynaKey is a set of ATM-style keys (DynaKeys), which are located beside the display. The functions of these keys change depending on the software application appearing on the LCD.



Note: USB DynaKey requires Windows XP/XPe.

The combined display and keypad is designed to reduce operator training time, simplify complex POS transactions and improve associate/cashier productivity. Combined with the appropriate applications software, the DynaKey can virtually eliminate the need for an operator to memorize function key locations and sequence.

The USB DynaKey interfaces with the host terminal via two cables.

- Digital Video Interface (DVI) cable for video
- Powered Universal Serial Bus (USB) for data and power

The DynaKey is available in two color schemes.

- Light Gray (G11)
- Charcoal Gray (CG1)

NCR 5982 6.5-Inch LCD Display

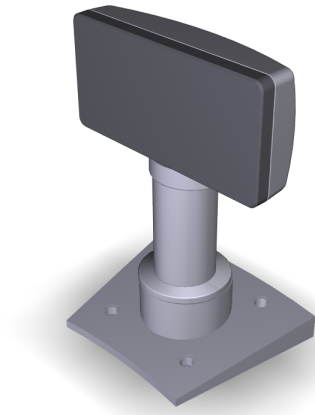
The 5982 LCD Display is a terminal-powered color 6.5 Inch VGA LCD.



Features

- 5-inch VGA Monochrome LCD (640 x 480 VGA)
- Contrast Control
- LED Back Light
- Keyboard Mount
- Low-Post Table-Top Mount
- VGA Video
- Powered by 12 V USB Cable

NCR 5976 2x20 LCD Customer Display



The NCR RealPOS 5976-1xxx Customer Display is a 2-line x 20-character LED backlit Liquid Crystal Display (LCD), which can display any downloadable codepage of single byte characters. It supports both RS-232 and USB interfaces.

- 5976-1100 2x20 LCD (G11)
- 5976-1200 2X20 LCD (CG1)

There are four post options, available in 4 inch increments.

Features

- 2x20 Character Liquid Crystal Display (LCD)
- LCD Technology: Advance Black Nematic (ABN)
 - True white on black LED display
 - Sealed against dust and spill resistant
- High-Contrast/High Bright
- Low Power Consumption
- 7x9 pixel characters
- Character height
 - Minimum - 9.5mm
 - Maximum - 10.5mm
- LED backlight: 50K hour minimum backlight life at ½ rated luminance
- Luminance: 200-500 nits
- Three pre-loaded Code pages
 - Up to 19 downloadable Code pages
- MB Flashable memory

Power Supply

- Universal Power Supply (12V, 12W output)
- 8 pin Molex Connector

EIA-232 or USB 2.0 I/F support

- The components for both interfaces are populated on a single printed circuit board. Both interfaces are active, though only one interface can be physically connected at a time. The display communicates via the interface that is connected to it.

Mounting Options

- Table Mount, 4-in. Post
- Table Mount, 8-in. Post
- Table Mount, 12-in. Post
- Table Mount, 16-in. Post
- Integrated Mount for NCR 7456, 7457, 7458

Character Sets

- Support for 19 character sets
- 3 Character sets in base unit
 - Code Page 858 (International)
 - Katakana
 - Code Page 866 (Cyrillic)
- 2 MB Flash Memory for support of up to 16 additional character sets

Keyboards

NCR 5932 Keyboards

The NCR 5932 Keyboards are intended for harsh retail environments and contain an internal membrane to protect against objects such as paper clips, staple wires, pins, and so forth, from falling between the keys and damaging the electronics. This technology improves overall reliability not typically found in standard PC keyboards or many retail keyboards.

The RealPOS 60 supports the following NCR 5932 Keyboards:

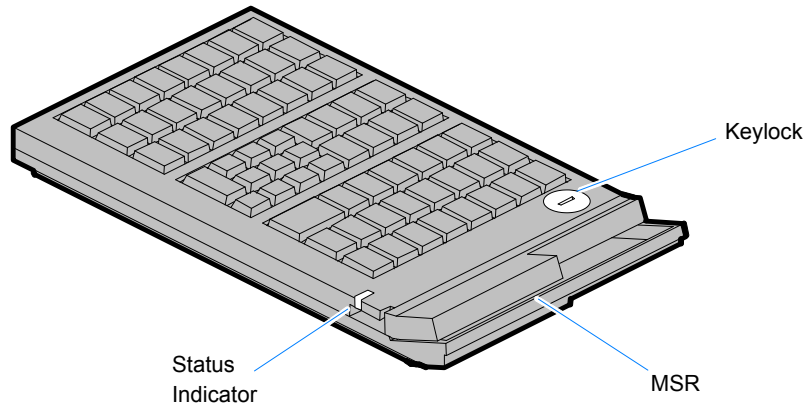
- NCR 5932-222x 64-Key PS/2 POS Keyboard
- NCR 5932-5xxx USB Big Ticket Keyboard
- NCR 5932-65xx PS/2 Compact Keyboard
- NCR 5932-66xx USB Compact Keyboard

Keyboard Power

The RealPOS 60 supplies power to the PS/2 keyboard even when in the OFF state. This is for configurations that require the terminal to turn on when a key is pressed. Most NCR PS/2 keyboards have a Power ON LED which stays illuminated, indicating power is present in the keyboard. Pressing a key may also cause tones to be sounded, but unless the terminal is configured to power up when a key is press, nothing happens

NCR 5932-222x 64-Key PS/2 POS Keyboard

The NCR 64-Key POS Keyboard, designed for checkout environments where alpha entry is not required, includes 55 assignable function keys and a numeric keypad with 11 keys.



19746

Features

- Keylock
- Speaker
- Scanner
- System Status Indicator LED
- 68-Inch PS/2Keyboard Cable



Note: Configure a NCR 5932-2xxx if you need an MSR feature.

The Wedge controller handles the operations of the user-programmable speaker, Magnetic Stripe Reader (MSR), keylock, and scanner connector. Please refer to the Wedge Software User's Guide (BD20 1368 A) for detailed information about interfacing and configuring these devices.

Keylock

The Big Ticket and 64-key keyboards have a four-position keylock switch. The table following explains the keylock positions.

Abbreviation	Position	Description
Ex	Exception	Used by the customer or service representative to perform low-level programming such as terminal diagnostics, configuring the terminal, or loading the terminal.
L	Locked	Used to lock keyboard input to prohibit use of normal functions.
R	Register	Used when performing normal retail mode functions.
S	Supervisor	Used by supervisor to provide highest level of terminal control in cases such as refunds and running totals.

Speaker

A programmable speaker generates key clicks and error tones.

Buzzer

The buzzer is an internal on board Buzzer.

System Status Indicator LED

The system status indicator is a two-color LED. The green color indicates the keyboard has power. Red indicates an error condition. When the system is off, the LED does not light up.

When the 64-key keyboard is in the special PC setup mode, the LED flashes red/green.

The status and condition indicated by the LED are as follows:

Status	Condition
Green	Power ON
Red	Wedge controller reporting an error condition
Flashing red/green	Keypad of 64-key keyboard in <i>PC Setup</i> mode
Off	System OFF (see <i>Keyboard Power</i> section)

MSR (Magnetic Stripe Reader)

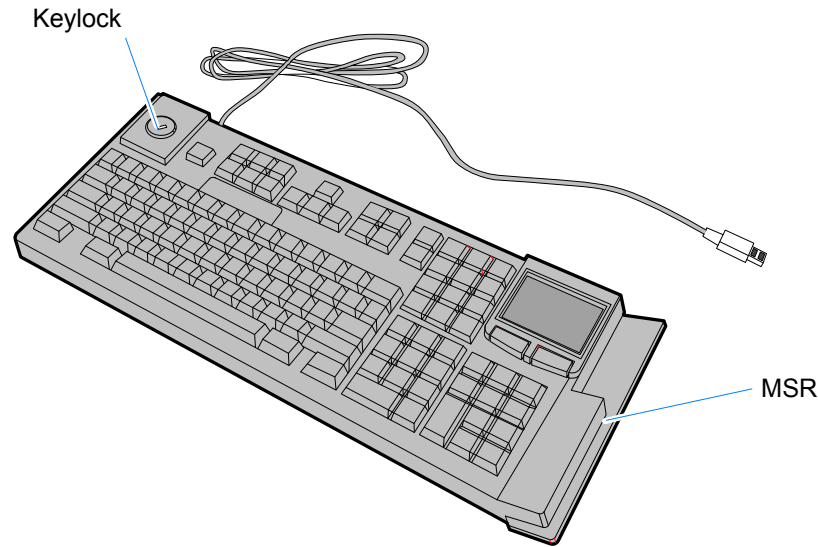
The MSR is an optional feature that provides support for reading magnetically coded data cards. The keyboards support two different types of MSR:

- ISO Tracks 1, 2, and 3
- JIS-II and ISO Track 2 (Big Ticket and full-featured 64-key keyboards only)



Note: MSR signals are routed to the Wedge controller and passed into the system keyboard data stream. For more information about the Wedge controller, refer to *Wedge Software User's Guide* (BD20-1368-A)

NCR 5932-5xxx USB Alphanumeric Big Ticket Keyboard



19586

The *NCR USB Alphanumeric Big Ticket Keyboard* is a multifunction keyboard that is two keyboards built into one.

The keyboard consists of two major sections:

- 38-key POS keyboard
- Industry-standard alphanumeric PC keyboard

The keyboard contains the key matrix and other POS-specific functions such as keylock, speaker, system status indicator, and magnetic stripe reader (MSR). This 5932 keyboard also has a USB port to connect a Scanner or other USB device.

Features

The NCR 5932 USB Keyboard supports the following features:

- Integrated Touch Pad, Keylock, Speaker, 3-Track Magnetic Stripe Reader (MSR)
- Keyboard Status LEDs
- USB cable
- Additional external USB ports
- No language characteristics



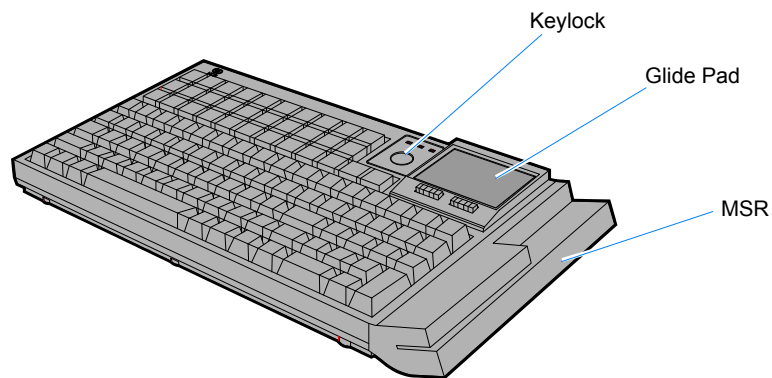
Note: Refer to NCR 5932 USB Keyboard User's Guide (B005-0000-1395) for further detailed information.

NCR 5932-65xx PS/2 Programmable POS Keyboard

The NCR 5932 PS/2 Programmable POS Keyboard is a multifunctional keyboard that is two keyboards built into one.

The keyboard consists of two major sections:

- 32-key Point-Of-Sale Keyboard
- PC type Alphanumeric Keyboard



29168

The keyboard includes the following features:

- Keylock
- Tone Indicator
- Keyboard Status Indicator
- Magnetic Stripe Card Reader (MSR)
- Glide Pad

NCR 5932-66xx USB Programmable POS Keyboard

The *NCR 5932 PS/2 Programmable POS Keyboard* is a multifunctional keyboard that is two keyboards built into one.

The keyboard consists of two major sections:

- 32-key Point-Of-Sale Keyboard
- PC type Alphanumeric Keyboard

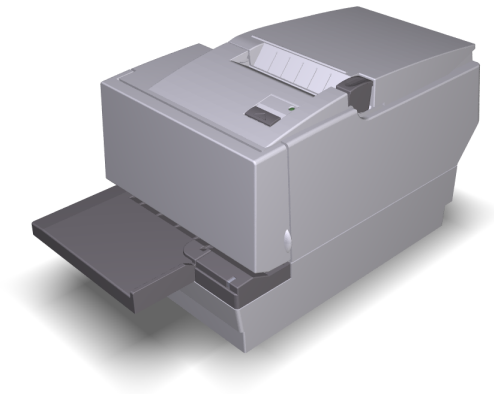


The keyboard includes the following features:

- Keylock
- Tone Indicator
- Keyboard Status Indicator
- Magnetic Stripe Card Reader (MSR)
- Glide Pad

Printers

NCR 7167 Printer

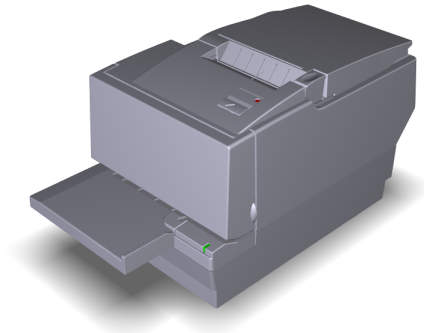


The NCR 7167 Printer is a fast, quiet, relatively small and very reliable multi function printer. It prints receipts, validates and prints checks, and prints on a variety of single or multiple part forms. There is not journal as it is kept electronically by the host terminal. The printer can connect through a USB port or a serial port. It can receive power from a power supply or through a USB+ power cable.

Features

- Print speed up to 90 lines/sec (44 columns)
- Supports 80/58 mm media rolls
- Easy drop-in paper loading
- Dual Interface board w/auto-sensing

NCR 7168 Printer



The NCR 7168 Printer is a fast, quiet, relatively small and very reliable multiple-function printer with front and back printing on the receipt paper capability. It prints receipts, validates and prints checks, and prints on a variety of single- or multiple-part forms. There is no journal as it is kept electronically by the host computer.

The industry-standard RS-232C communication interface allows the 7168 to be connected to any host computer that uses RS-232C or USB communication interface.

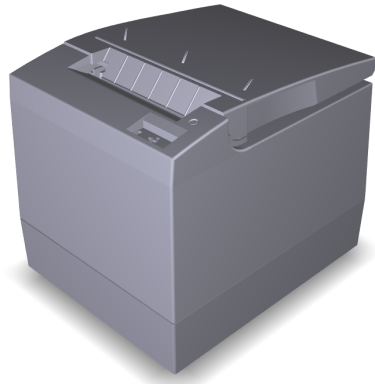
The receipt station uses thermal printing technology. Therefore, there is no ribbon cassette to change and paper loading is extremely simple. Printing on single- or multiple-part forms, validating checks, and printing checks is also easy in the accommodating slip station.

Another feature is the Magnetic Ink Character Recognition (MICR) check reader with parsing, which reads account numbers on checks for easy verification. An extended slip table is available for handling large forms and is standard with the MICR option.

Features

- Print speed up to 52 lines/sec (44 columns)
- Supports 58/80 mm media rolls
- Easy drop-in paper loading
- Dual Interface board w/auto-sensing

NCR RealPOS 7197 Printer



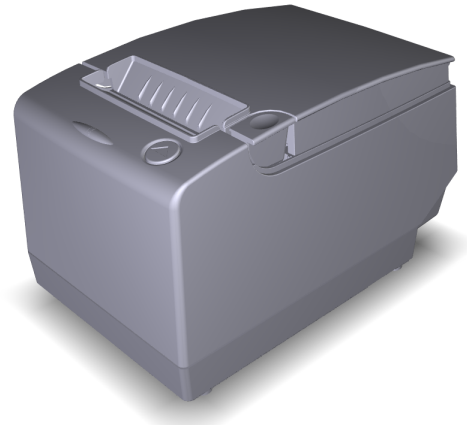
The *NCR 7197 Printer* is a fast, quiet, relatively small and very reliable printer. The printer can connect through a USB port or a serial port. It receives power from the 24V connector on the terminal or from an external power supply.

Features

- Print speed up to 90 lines/sec (44 columns)
- Supports 80/58 mm media rolls
- Easy drop-in paper loading
- Dual Interface board w/auto-sensing

NCR 7198 Printer

The NCR 7198 printer is a fast, quiet, relatively small and very reliable printer with front and back printing on the receipt paper capability. The printer can connect through a USB port or a serial port. It can receive power from a power supply or through a USB+ power cable.



The NCR 7198 Printer is a fast, quiet, relatively small and very reliable printer with front and back printing on the receipt paper capability. The printer can connect through a USB port or a serial port. It can receive power from a power supply or through a USB+ power cable.

Features

- Print speed up to 52 lines/sec (44 columns)
- Supports 58/80 mm media rolls
- Supports RoL media
- Automatic paper detect (type)
- Easy drop-in paper loading
- Dual Interface board w/auto-sensing

Chapter 2: Hardware Installation

This chapter explains how to install the RealPOS 60 hardware, including out-of-box installation and how to install the optional peripheral devices. The 7601 is very flexible to install. This document discusses a typical configuration. Your configuration may require adjustments to the procedures.

Installation Restrictions

- Before installing the RealPOS 60, read and follow the guidelines in the RealPOS 60 Site Preparation Guide (B005-0000-2012) and the NCR Workstation and Peripheral AC Wiring Guide (BST0-2115-53).
- Install the RealPOS 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 RealPOS 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 RealPOS 60.



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



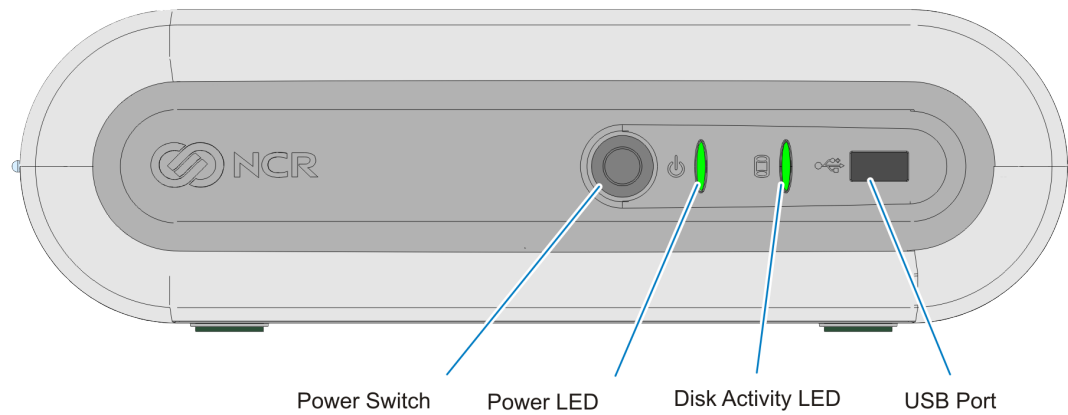
Caution: Do not connect or disconnect the transaction printer while the terminal is on. This can result in system or printer damage.

LED Diagnostic Indicators

The two front panel LEDs also function as diagnostic indicators, defined as follows.



Note: The cell colors indicate the color of the LED at that particular time.



28561

Current System Operation	Suspect Component	System State	Power LED	Disk Activity LED	Corrective Action
Normal Operation	N/A	System ON	ON	OFF	N/A
Normal Operation	N/A	System ON with HDD Activity	ON	Flashing (HDD Access)	N/A
Normal Operation	N/A	Unit in Suspend (S3)	Blinking (1/Sec)	ON	N/A
<ul style="list-style-type: none"> • OFF • AC Present 	N/A	<ul style="list-style-type: none"> • OFF • Not in Standby • External P/S ON 	OFF	ON	N/A

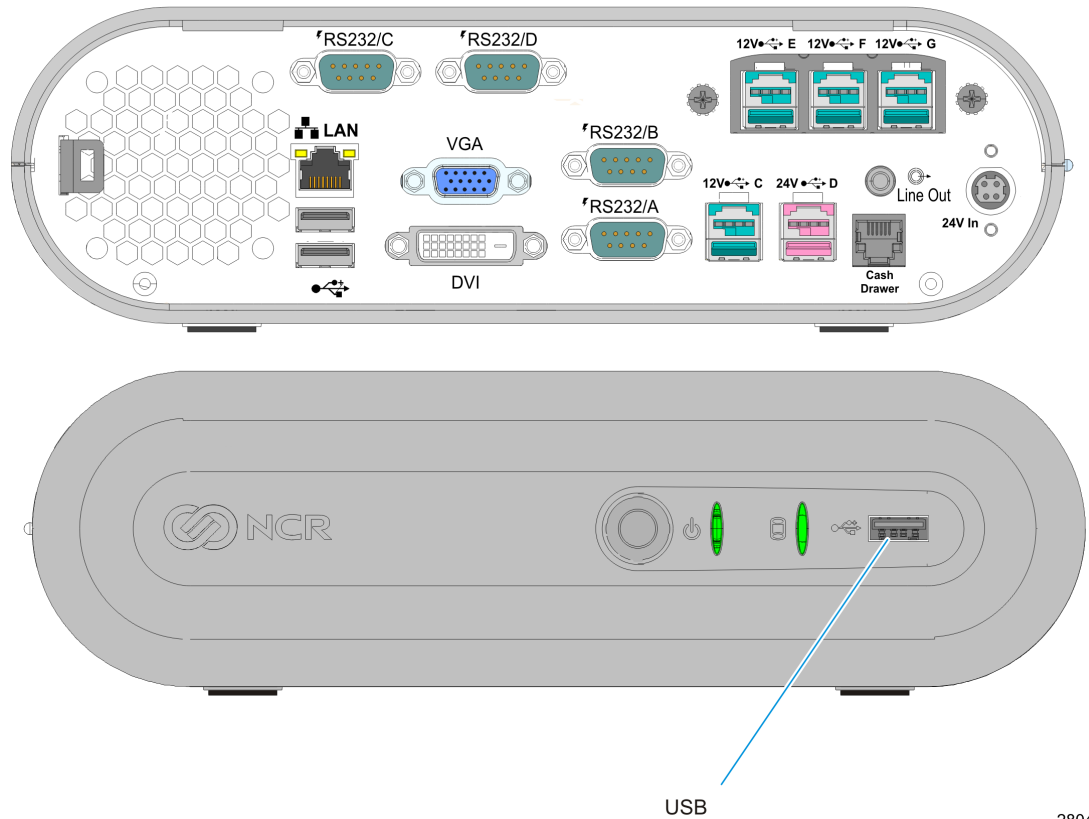
Current System Operation	Suspect Component	System State	Power LED	Disk Activity LED	Corrective Action
<ul style="list-style-type: none"> • OFF • AC Present 	Power System	<ul style="list-style-type: none"> • OFF • Not in Standby • External P/S ON 	OFF	OFF	<ol style="list-style-type: none"> 1. Check AC power to P/S 2. Check P/S 3. Check connection between unit and P/S 4. Check power connection from Back Panel to Motherboard and Motherboard to Front Panel 5. Replace P/S 6. Replace Motherboard 7. Replace Front Panel Board
Runtime	Cooling Component/CPU	Over Temperature	Flashes red/green, then solid red as temperature increases	N/A	<ol style="list-style-type: none"> 1. Check for blocked cooling vents 2. Check for excessive ambient temperature 3. Check cooling components
POST	CPU	CPU not Operating	ON	ON	<ol style="list-style-type: none"> 1. Check for correctly installed CPU 2. Replace Motherboard
POST	BIOS Chip	BIOS Checksum Failure	ON	Flashing (4/Sec)	<ol style="list-style-type: none"> 1. Perform BIOS crisis recover 2. Replace BIOS chip 3. Replace Motherboard

Current System Operation	Suspect Component	System State	Power LED	Disk Activity LED	Corrective Action
POST	Memory	Memory Issue	ON	Flashing (1/Sec)	<ol style="list-style-type: none"> 1. Check for properly installed memory 2. Replace memory 3. Replace Motherboard
POST	Motherboard	No Display	ON	Flashing 1/4 Sec)	Replace Motherboard
POST	Display Motherboard Peripheral	Stopped Prior to Boot	ON	Flashing (1/Sec)	<p>No Display:</p> <ol style="list-style-type: none"> 1. Check for power to display if no display 2. Check cable connection between Motherboard and display 3. Check for properly functioning display 4. Replace Motherboard <p>Display Working:</p> <ol style="list-style-type: none"> 1. Use display to determine failure point via onscreen message and BIOS Setup

Current System Operation	Suspect Component	System State	Power LED	Disk Activity LED	Corrective Action
Boot Time	Boot Media (HDD, LAN)		ON	OFF	HDD is Boot Device: <ol style="list-style-type: none">1. Check HDD status in BIOS Setup2. Check connections between HDD and Motherboard3. Replace or re-image HDD4. Replace Motherboard LAN is Boot Device: <ol style="list-style-type: none">1. Check for LAN link and activity LEDs on the Back Panel2. Check LAN cable3. Replace Motherboard

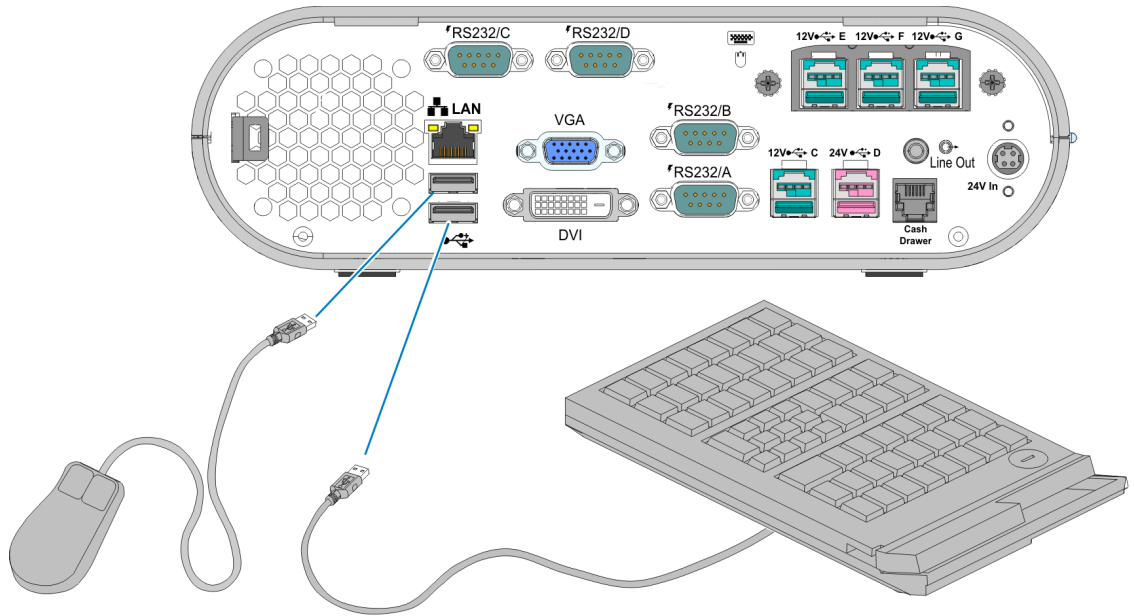
Installing the Terminal

1. Connecting the External Cables
2. Connect the external cables to the connectors located on the rear of the unit. There is also a USB connector on the Front Panel. See the following sections for each component.



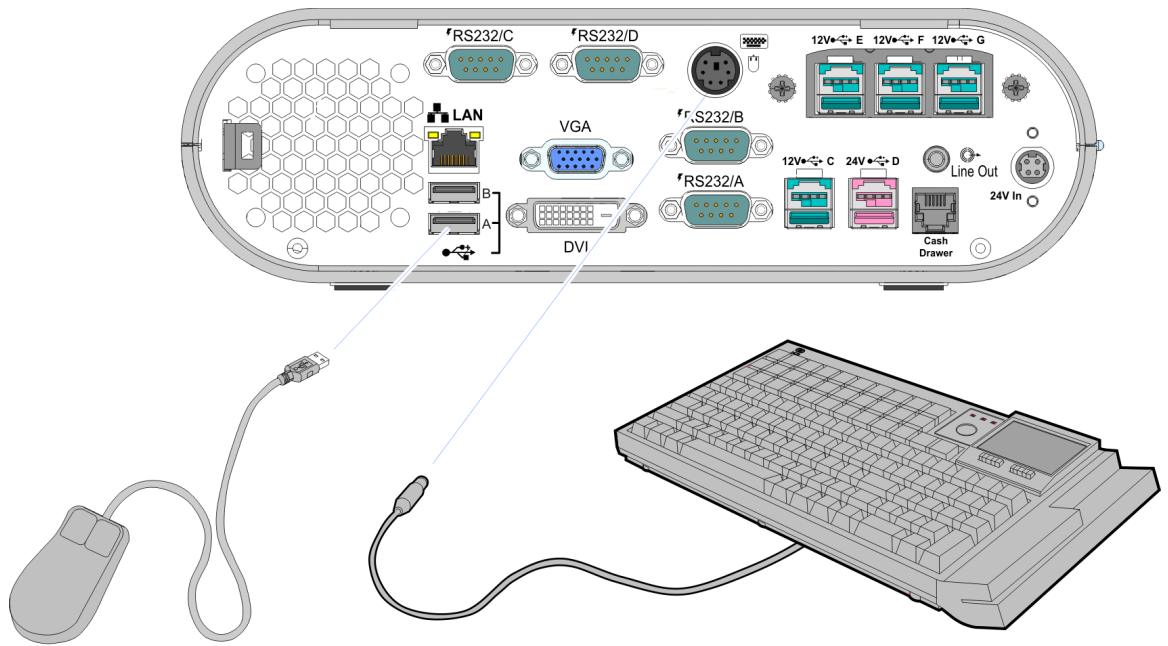
Installing the Keyboard and Mouse

The 7601 supports USB and PS/2 type keyboards. Only USB mice are supported. See the following examples of supported configurations.



28572

USB Keyboard and USB Mouse

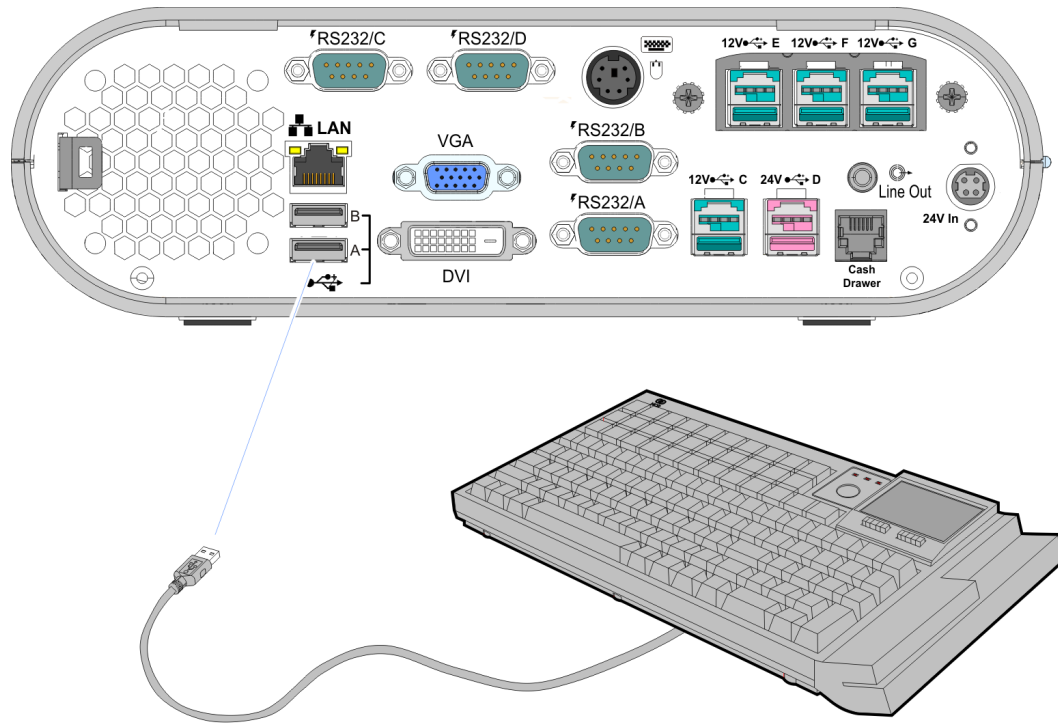


28573a

PS/2 Keyboard and USB Mouse



Note: PS/2 Extension Cables cannot be used on PS/2 Keyboards with a Glide Pad.



28575

USB Keyboard w/Glide Pad

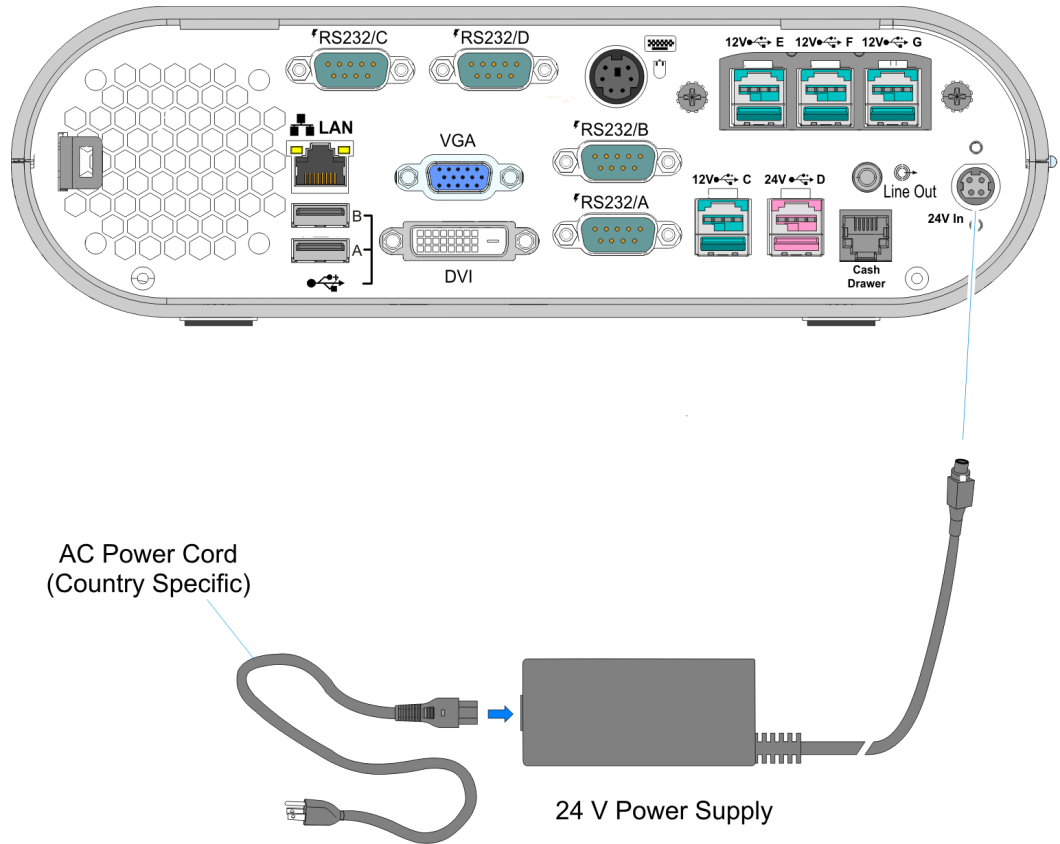
Connecting AC Power

The 7601 power supply is an external 24 V power brick.



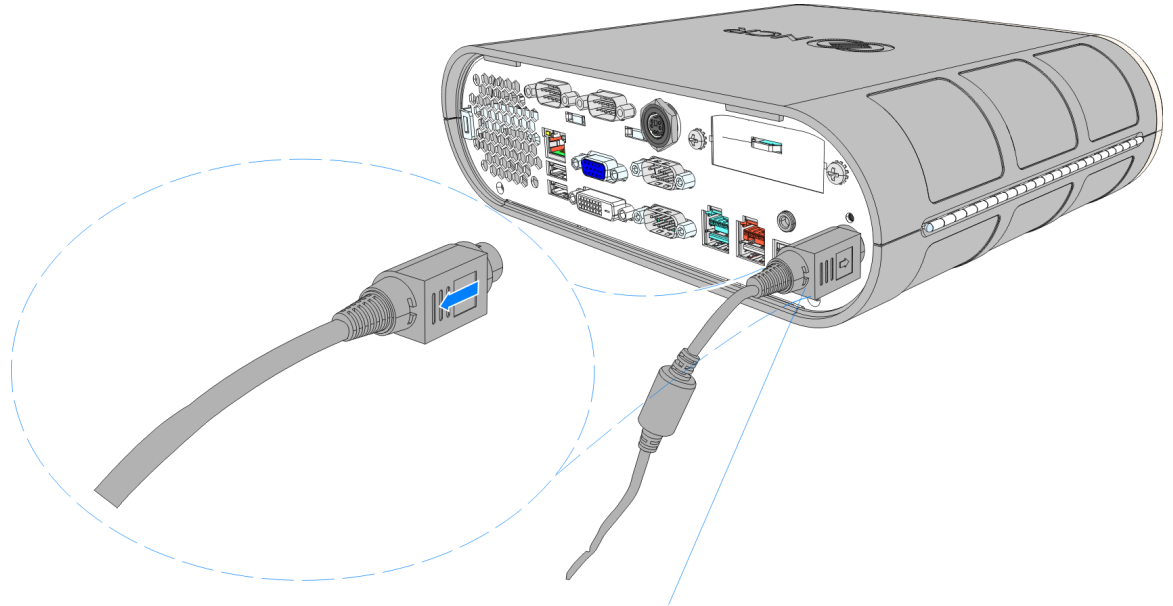
Caution: The 7601 requires the NCR 24 V power supply that is shipped with the terminal. Use of other power bricks may cause damage to the unit.

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.



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.

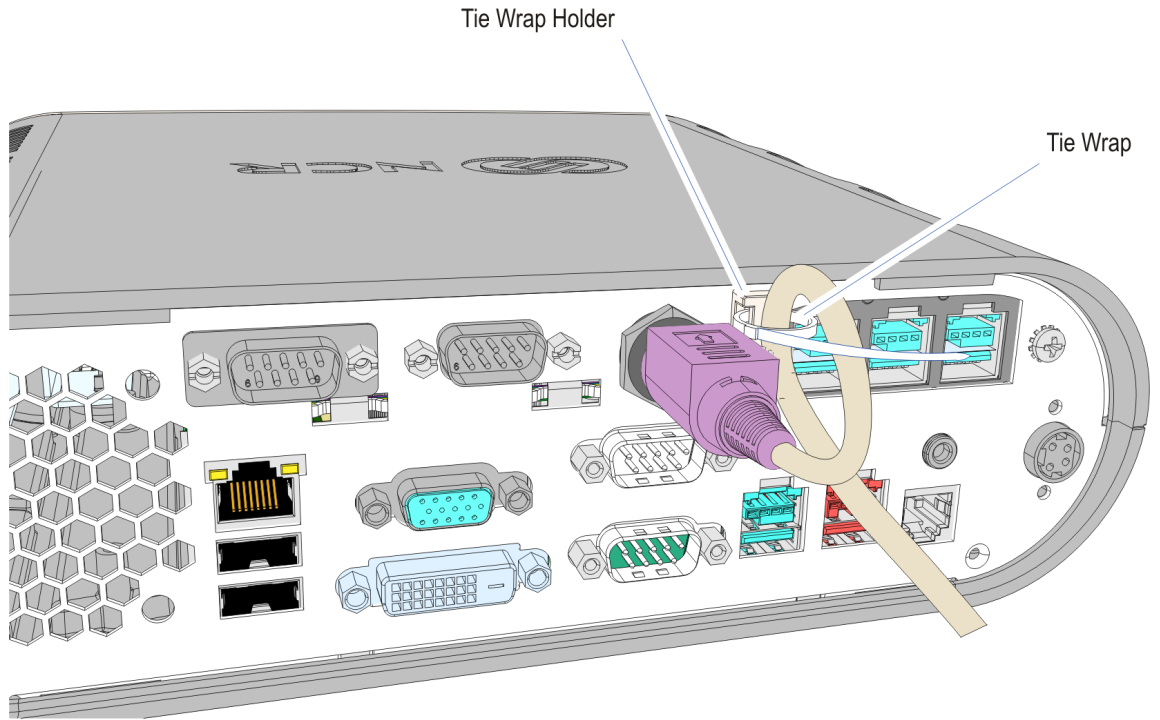


Terminal Power Cable

28690

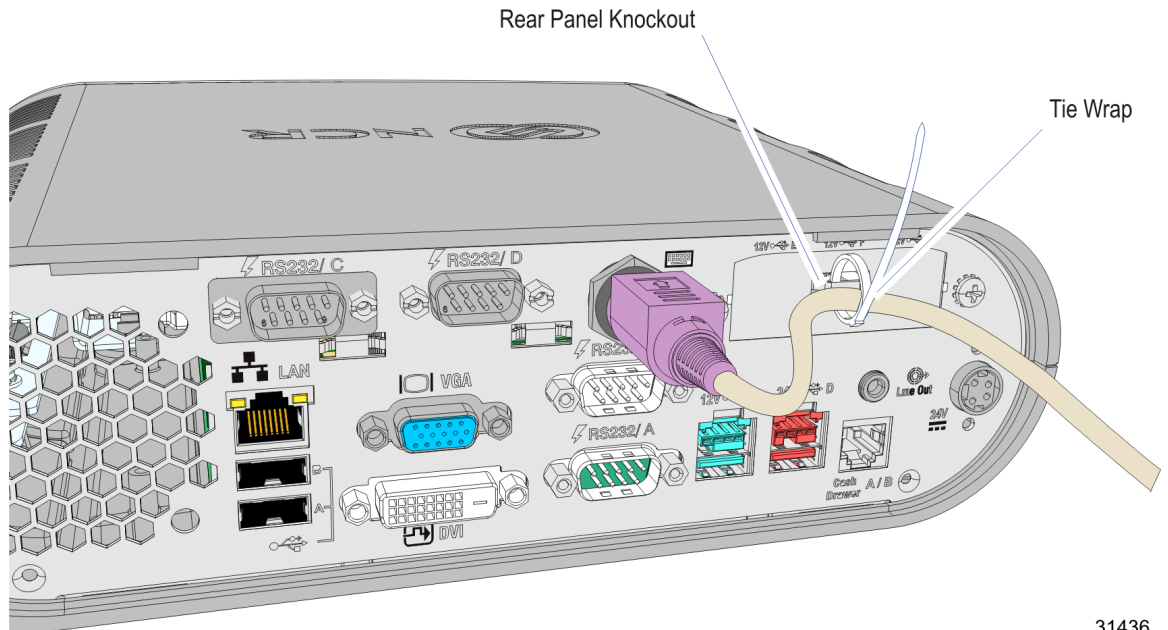
PS/2 Cable Connection

The PS/2 Cable should be secured with a Tie Wrap. On units configured with an Extended I/O Daughter Card the Tie Wrap Holder is used to secure the Cable.



31435

If the Daughter Card is not present the cable is secured to the hook located on the Rear Panel Knockout.



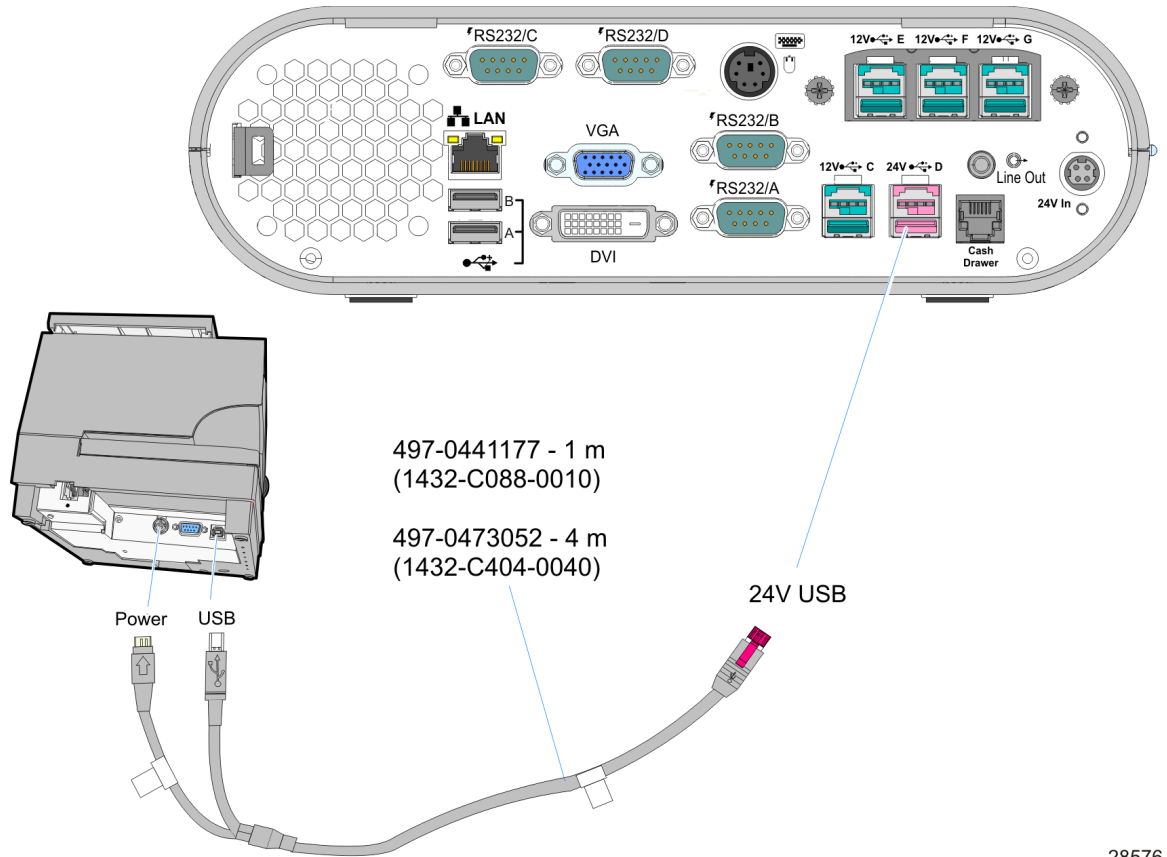
31436

Installing a Transaction Printer

The printers can connect through a USB connector or an RS-232 connector.

USB Installation

Connect the Powered USB Printer Interface Cable to the *USB Connector* and *Power Connector* on the printer and to the *24 V Powered USB Connector* on the terminal.



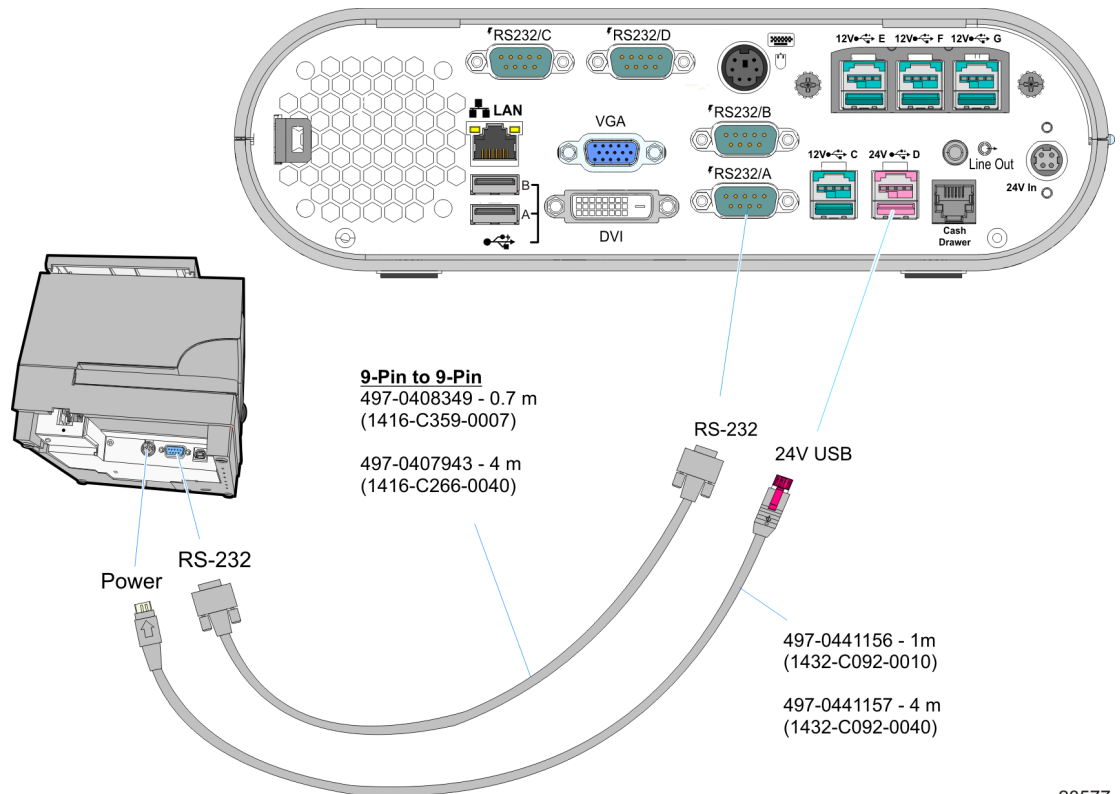
RS-232 Installation

1. Connect the RS-232 Printer Interface Cable to the RS-232 connector on the printer and to a **non-powered** RS-232 connector on the terminal.



Note: The factory default setting for the RS-232 ports is **powered**. See the Appendix: Powered Serial Port Settings.

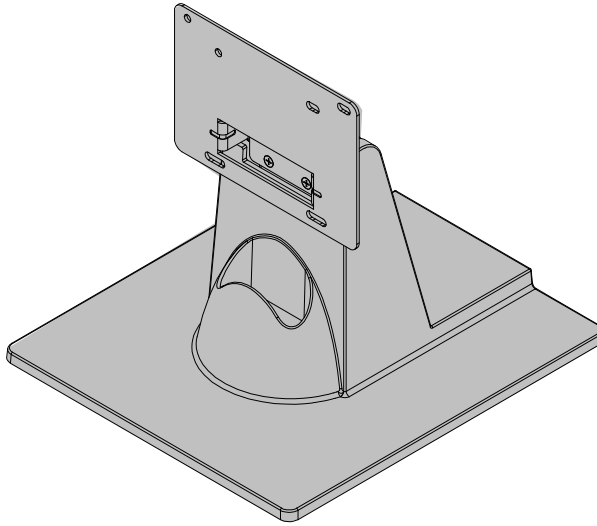
2. Connect the Powered USB Printer Interface Cable to the *Power Connector* on the printer and to the *24V Powered USB Connector* on the terminal.



Installing a Remote Display

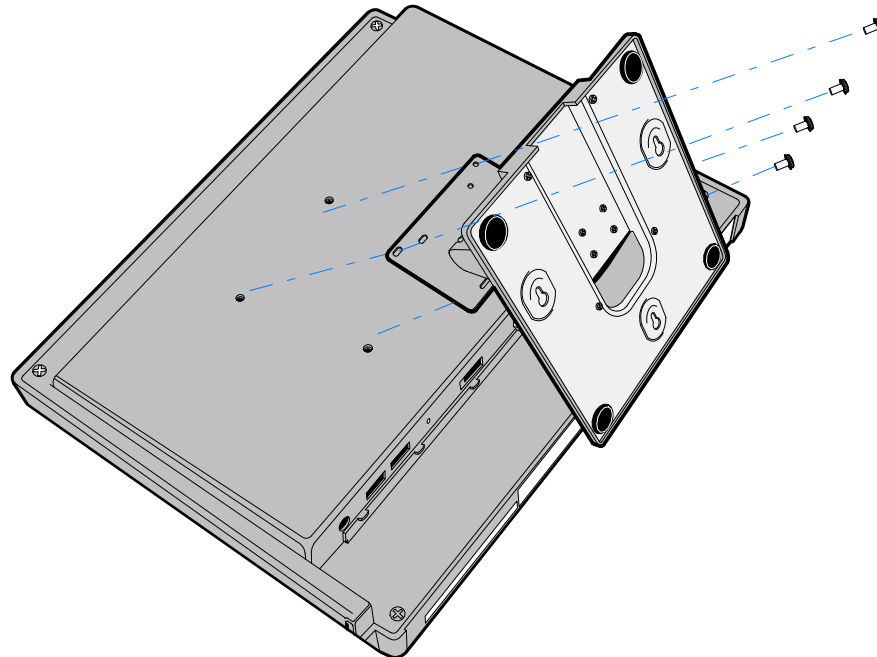
The Standard Remote Mount (5964-K031) is used to mount the following NCR displays.

- NCR RealPOS 5943 12.1-Inch Monitor
- NCR RealPOS 5943 15-Inch Monitor
- NCR RealPOS 5967 12.1-Inch Touch Monitor
- NCR RealPOS 5967 15-Inch Touch Monitor



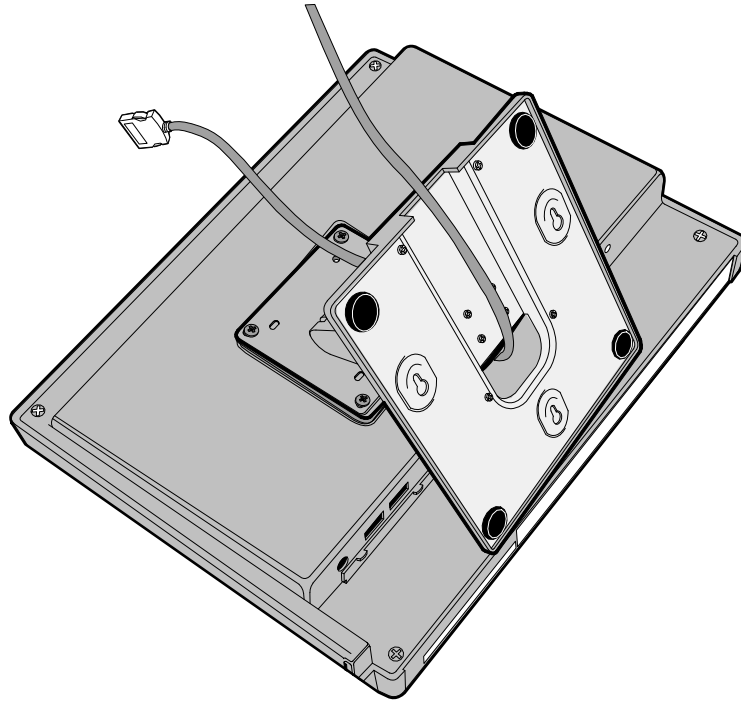
21151b

1. Install the mount onto the back of the Operator Display (4 screws).



26473

2. Route the cable(s) down through the mount and out the back of the base.



26474

3. Connect the cable to the proper connector on the host terminal. See the following sections for cable connections to the host terminal.

NCR 5943/5967 12-inch LCD Cable Connections

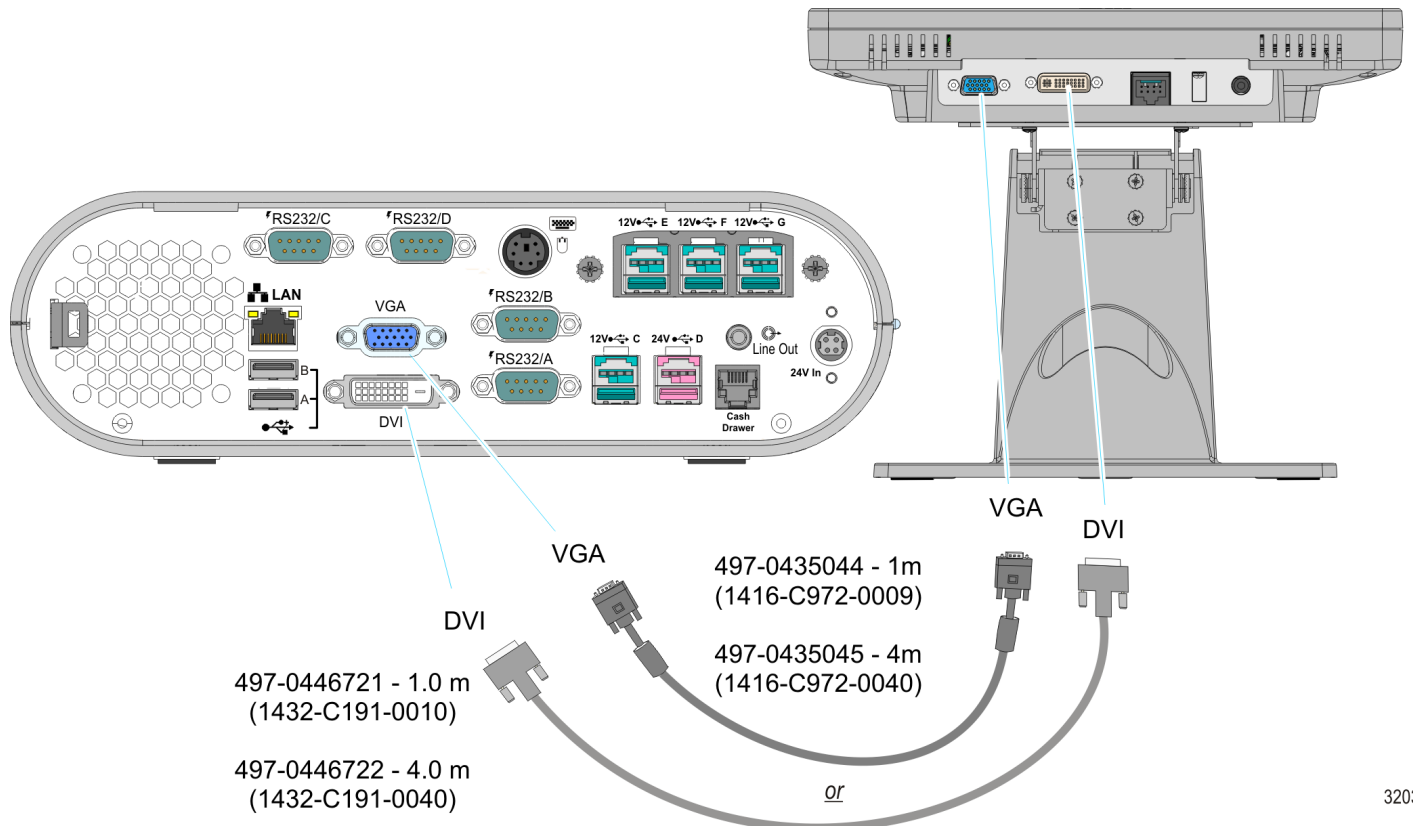


The following illustrations show the cable connections for the 5943 LCD and the 7601 terminal. There are two cables required.

- VGA or DVI cable for video
- Powered Universal Serial Bus (USB) for data and power

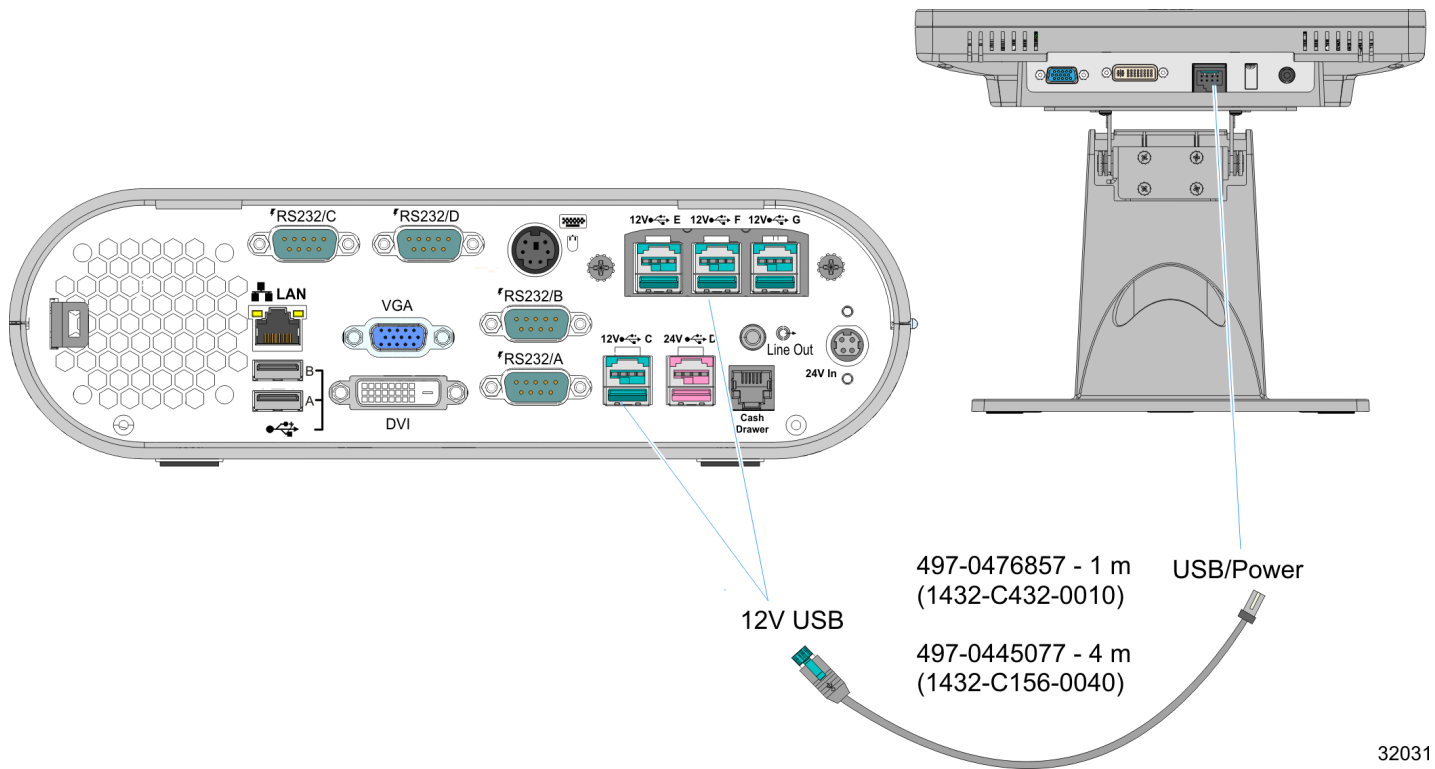
VGA/DVI Connections

Connect either a VGA or a HDMI to DVI cable.



Powered USB Cable Connections

Connect the Powered USB Cable to the 5943 LCD and to one of the 12V Powered USB connectors on the 7601 terminal.



32031

For more information see:

- the *NCR RealPOS 5943 12" LCD User Guide* (B005-0000-2043)
- the *NCR RealPOS 5967 12" LCD User Guide* (B005-0000-2182)

NCR 5943/5967 15-inch LCD Cable Connections

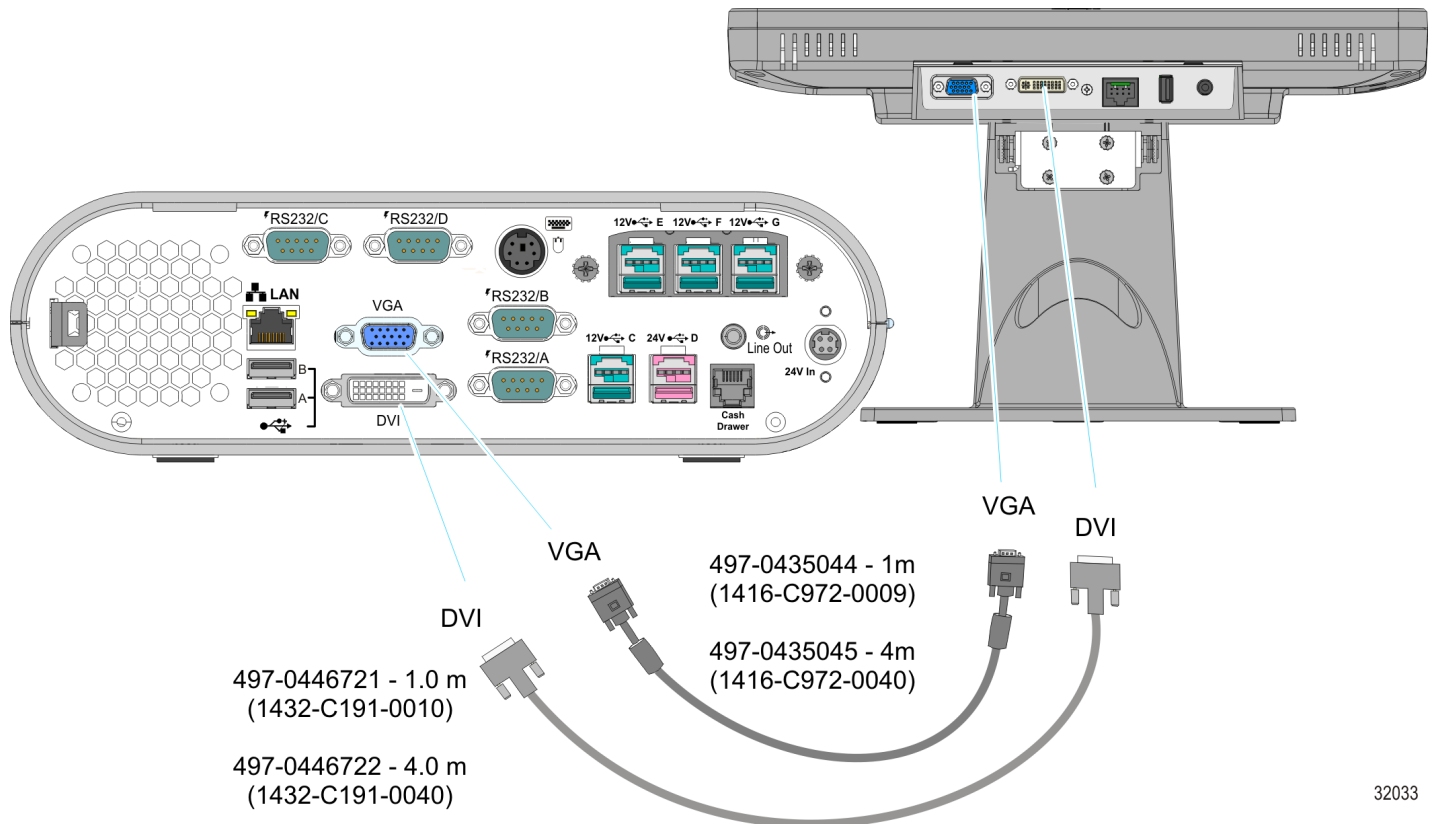


The following illustrations show the cable connections for the 5943 LCD and the 7601 terminal. There are two cables required.

- VGA or DVI cable for video
- Powered Universal Serial Bus (USB) for data and power

VGA/DVI Connections

Connect either a VGA or an HDMI to DVI cable.

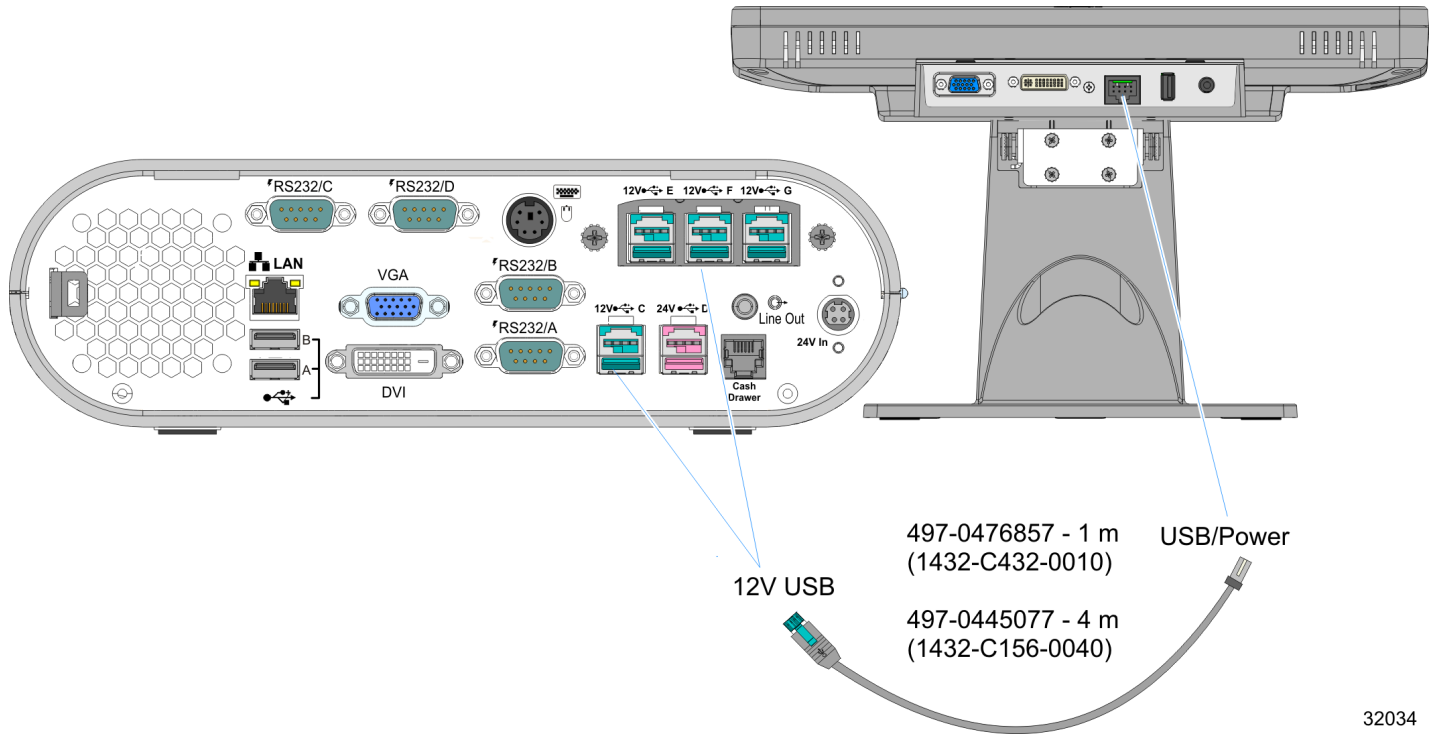


Powered USB Cable Connections

Connect the Powered USB Cable to the 5943 LCD and to one of the 12V Powered USB connectors on the 7601 terminal.

For more information see:

- the *NCR RealPOS 5943 15" LCD User Guide* (B005-0000-2182)
- the *NCR RealPOS 5967 15" LCD User Guide* (B005-0000-2193)



NCR 5954 USB DynaKey Cable Connections

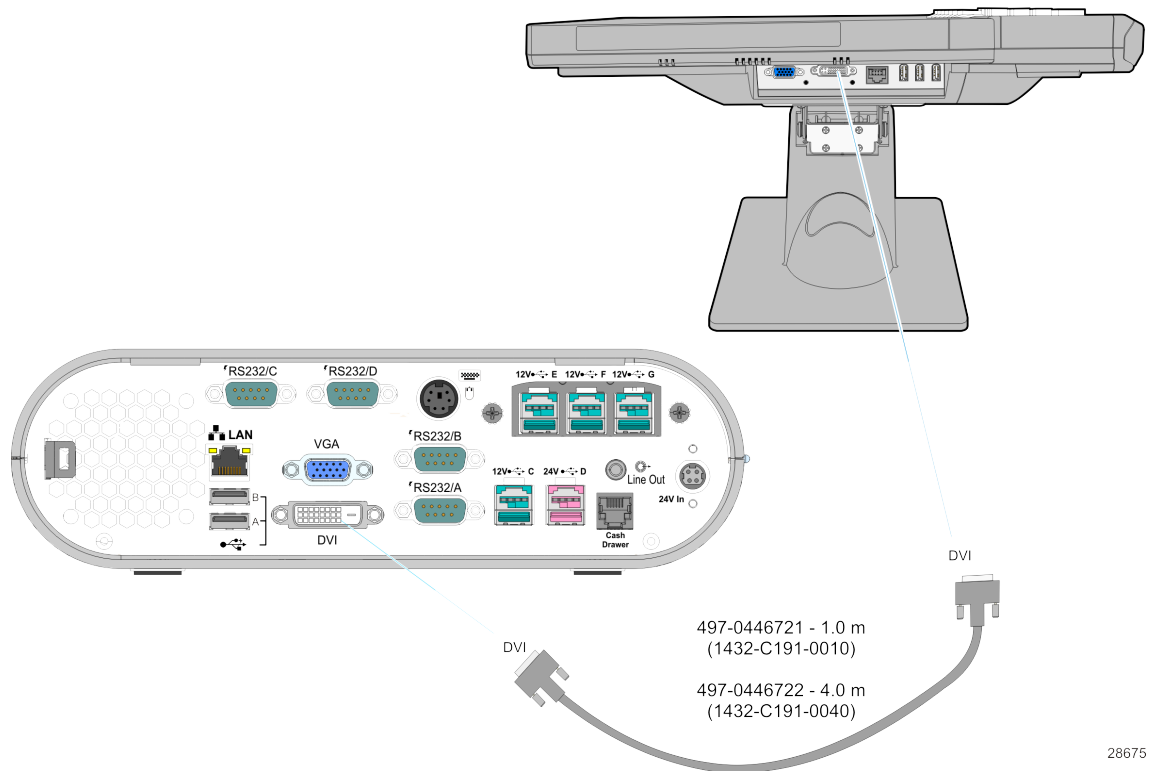


The DynaKey connects to the terminal via two cables.

- DVI or VGA cable for video
- Powered Universal Serial Bus (USB) for data and power

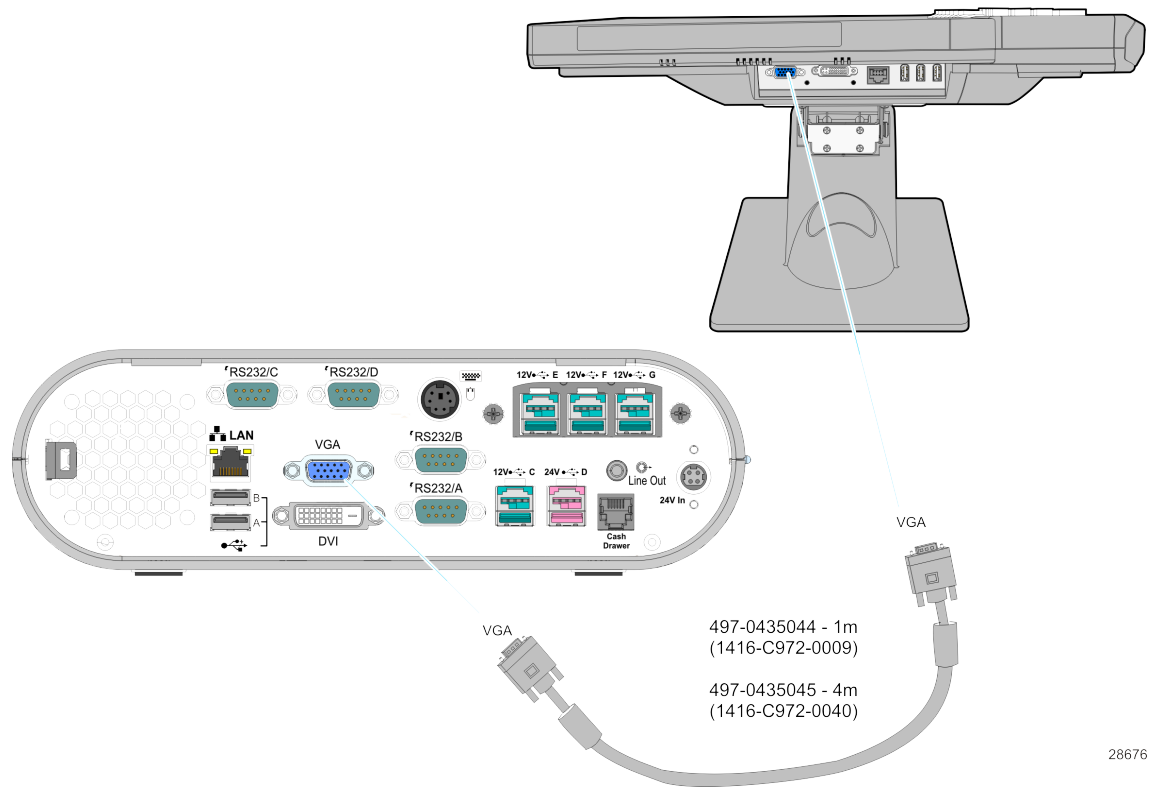
DVI Cable Connections

Connect the cable to the *DVI* connectors on the DynaKey and terminal.



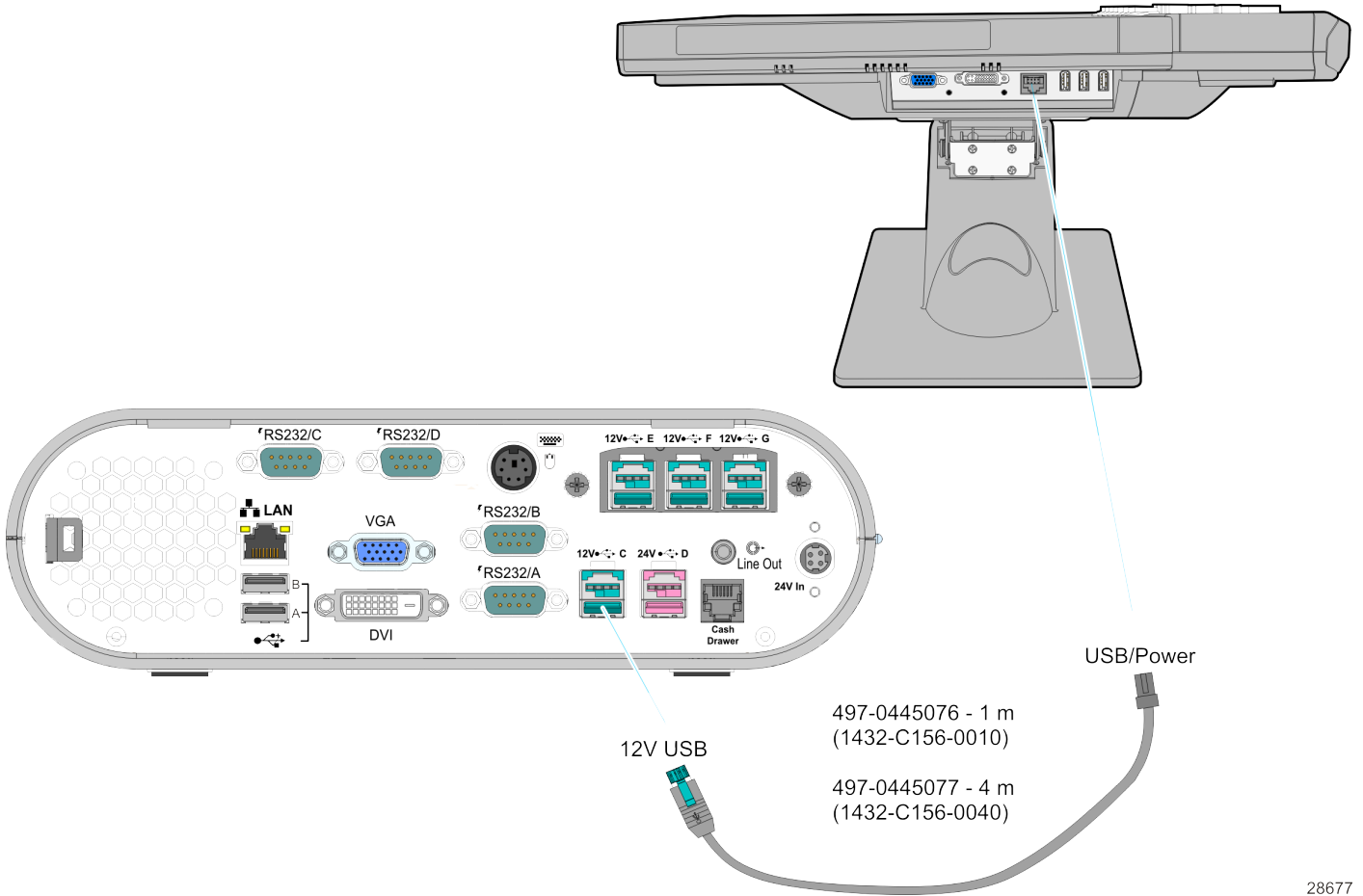
VGA Cable Connections

Connect the cable to the *VGA* connectors on the DynaKey and terminal.



Powered USB Cable Connections

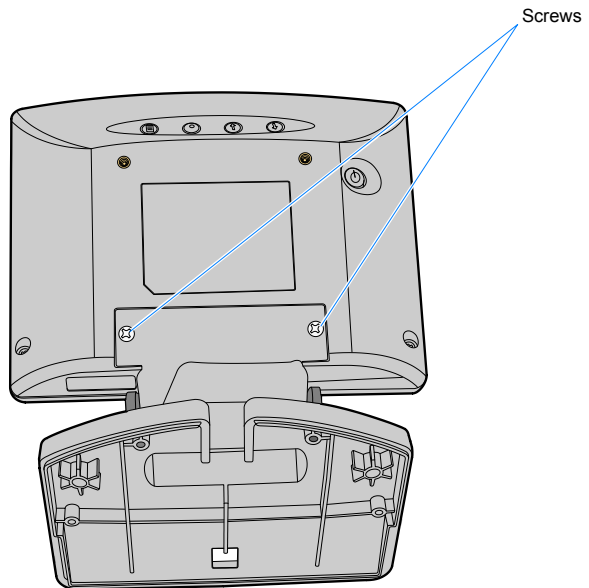
Connect the Powered USB Cable to the DynaKey and to one of the *Powered USB* connectors on the terminal.



Installing an NCR 5982 6.5-Inch LCD



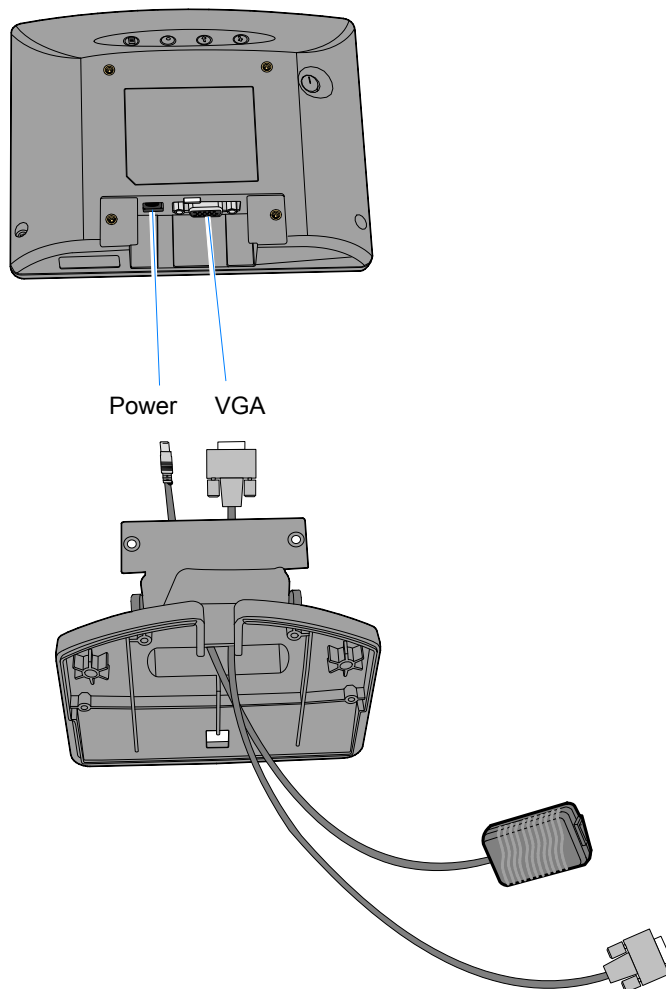
1. Remove the Base from the Display (2 screws).



2. Route the VGA and Power cables up through the bottom of the Base and connect them to the Display.



Note: The power cable can be either an External Power Supply or a Powered USB cable.



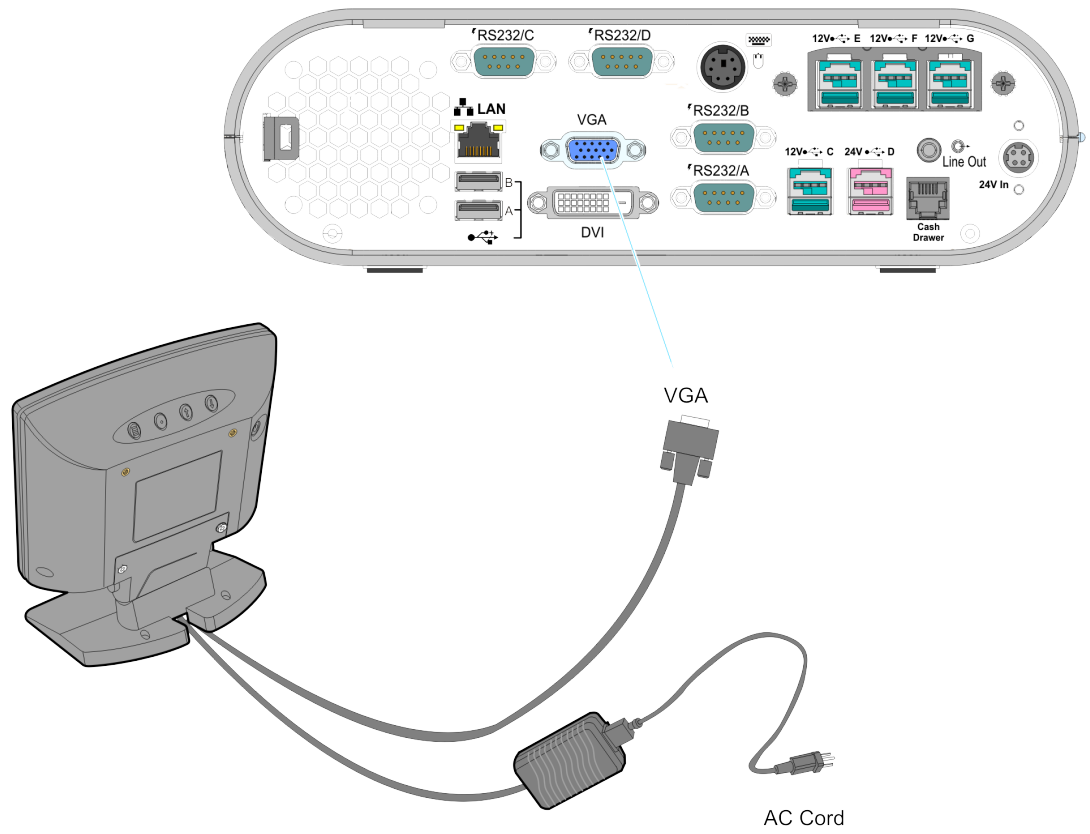
23435

3. Install the Base to the Display (2 screws).
4. Route the cables out the rear of the Base.

5. Connect the Power Cable:

External Power Supply

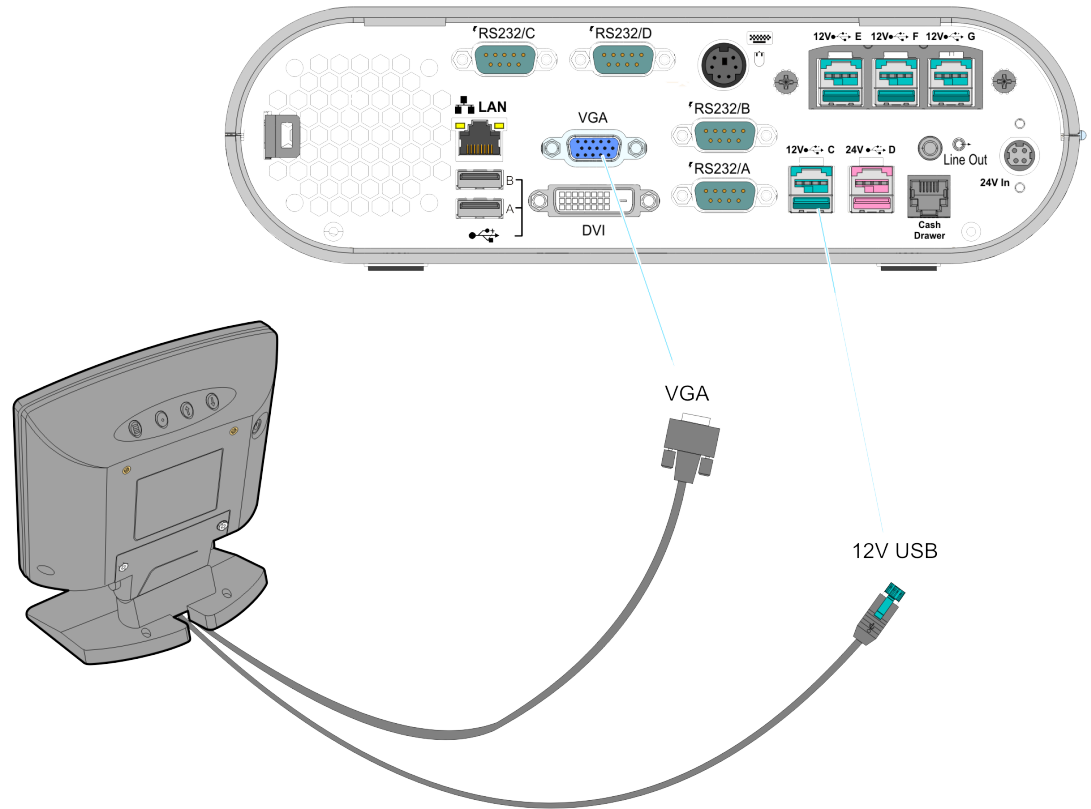
- a. Connect the VGA cable to the VGA port on the host terminal.



- b. Connect the AC Cord to the Power Supply and to an AC source.

Terminal Powered (7446-30303131)

- a. Connect the VGA cable to the VGA port on the host terminal.
- b. Connect the Power Cable to the Powered 12V USB port on the host terminal.

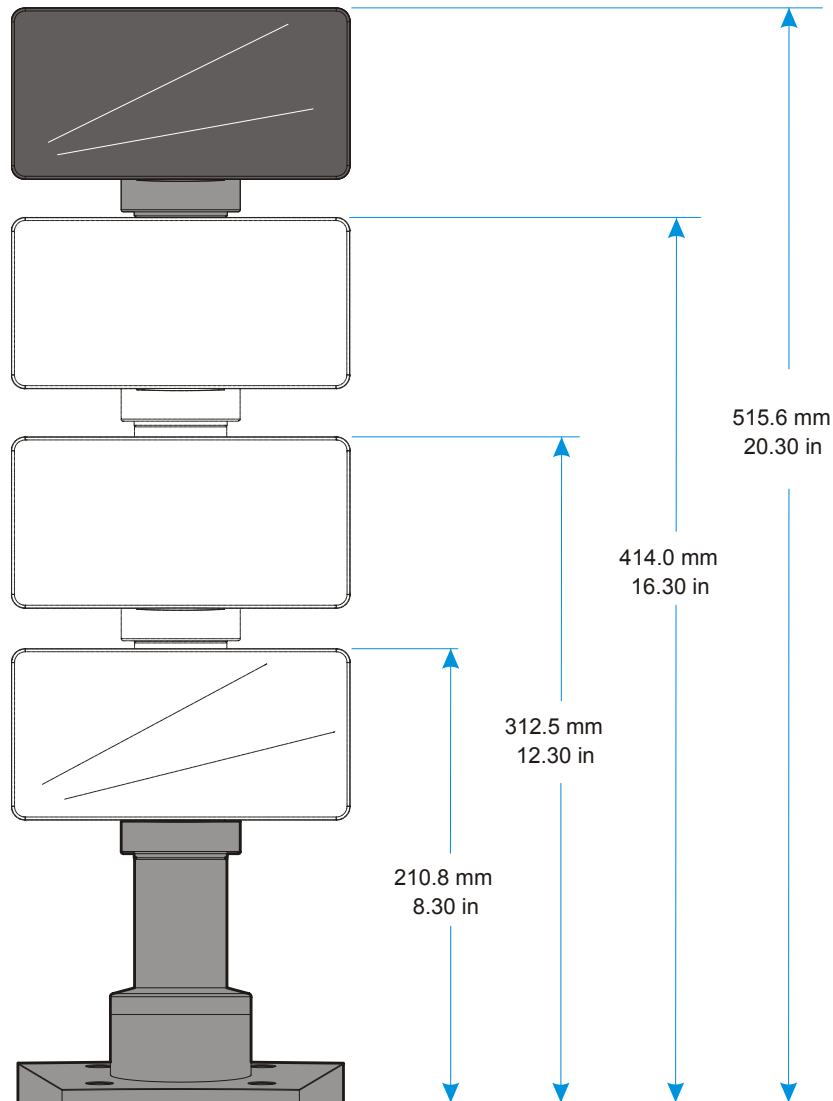


Installing a 5975/5976 Customer Display

The terminal supports two customer displays.

- NCR 5975 Graphical Customer Display (VFD)
- NCR 5976 Remote Customer Display (LCD)

There are four different length posts available, in four inch increments.

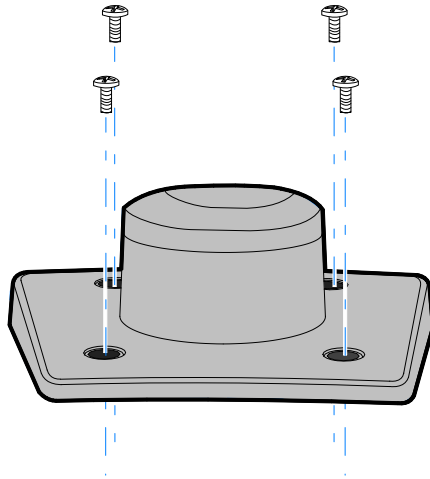


31177



Note: Heights greater than 215 mm (8.5 in.) should be screwed to the counter top.

1. Locate the Display Mount within 4 meters (13 ft.) of the host terminal.
2. Determine if the cable should be routed down through the mounting surface or if it should be run on top of the surface. Drill a hole if necessary.
3. If you are installing with a post greater than 215 mm (8.5 in.) secure the Base Plate with screws (4) that are appropriate for the surface that you are installing the Base Plate to.

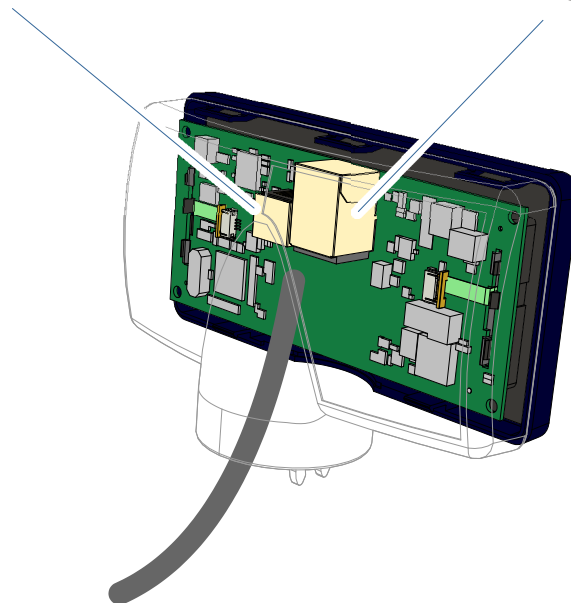


22930

4. Connect the Interface Cable to the Display Module, either RS-232 or USB.

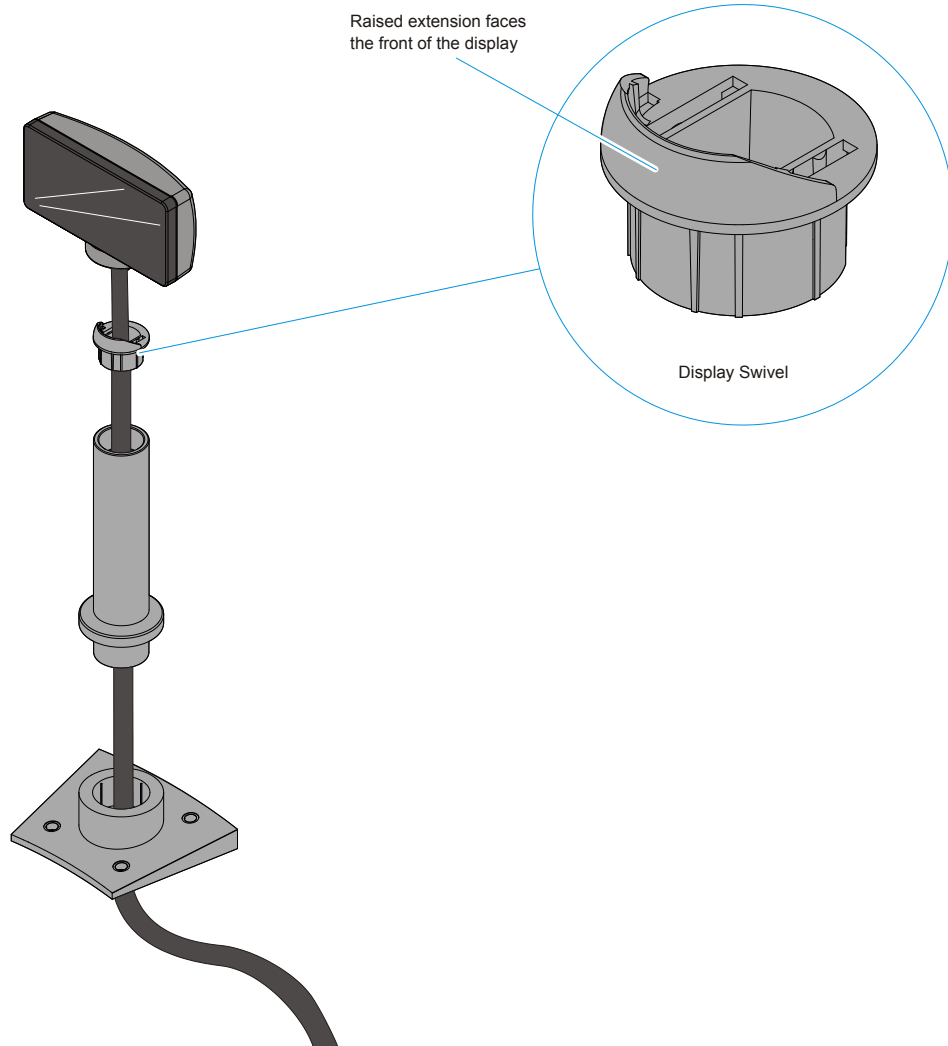
RS-232 Connector

USB Connector



31174

5. Route the Interface Cable through the Post and assemble the Post components.



29354

6. Connect the Display Cable to the terminal.

RS-232 Interface

Connect the I/F cable to a powered RS-232 connector on the terminal.



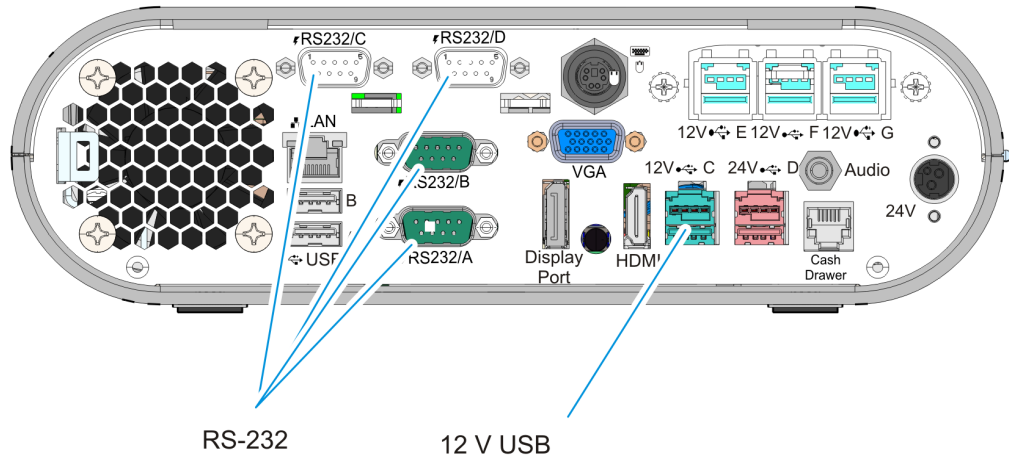
Note: The factory default settings for the COM1 and COM2 ports are powered by default. To change a port to non-powered see the *Powered Serial Port Settings* appendix.

Configure the terminal serial port as follows:

9600 baud, 8 data bits, 1 start bit, 1 stop bit, No parity

USB Interface

Connect the I/F cable to the powered 12V Powered USB connector on the terminal.



Installing a Secondary Display (Dual Display)

The Motherboard uses an integrated video controller. This controller supports a Monitor port (VGA) and a Digital Display port (DVI) on the motherboard connector row. These two ports provide a single display mode (DVI or VGA) or a dual display mode (DVI and VGA). Dual display mode can be a clone (same video data displayed on both displays) or an extended desktop (the desktop spans across both displays).

The dual mode is configured using the *Intel® Graphics Media Accelerator* control panel.

1. Power down the system.
2. Connect the secondary display.



Note: Both displays must be connected to the 7610 before powering up the system.

3. Apply power to the system.
4. **Right click** the Desktop and then select **Graphics Properties** from the menu to start the control panel. The following screen indicates the system was previously configured with a single VGA display (Monitor).



Extended Desktop Dual Display

1. Select **Multiple Displays**.



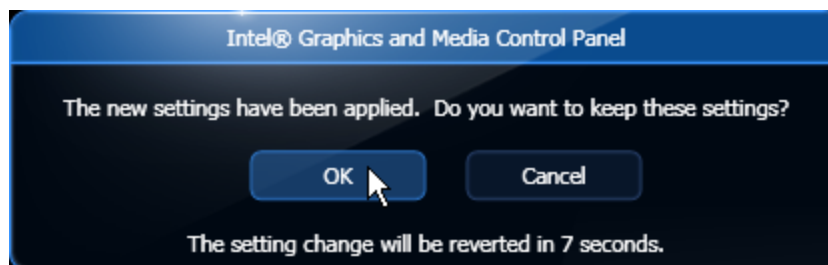
2. From the Operating Mode drop-down menu select **Extended Desktop**.
3. Select **PrimaryDevice**: Monitor or Digital Display. (This display has the Start button and Taskbar)
4. Select **SecondaryDevice**: Digital Display or Monitor. (This display is the desktop extension)

You can re-position the displays as desired by dragging the 1 or 2 icons in the Position box.

5. Select **Apply**.



6. Select **OK** within 15 seconds to accept the new settings.



6. Select **OK** to close the Control Panel.

Dual Display Clone

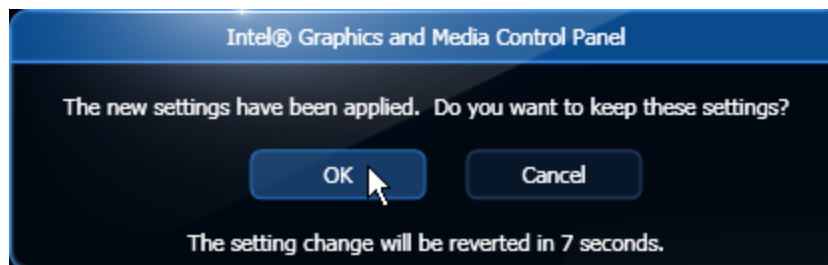
1. Select **Multiple Displays**.



2. From the Operating Mode drop-down menu select **Clone Display**.
3. Select the Primary Device: **Monitor** or **DigitalDisplay**.
4. Select the Secondary Device: **DigitalDisplay** or **Monitor**.
5. Select **Apply**.



6. Select **OK** within 15 seconds to accept the new settings.



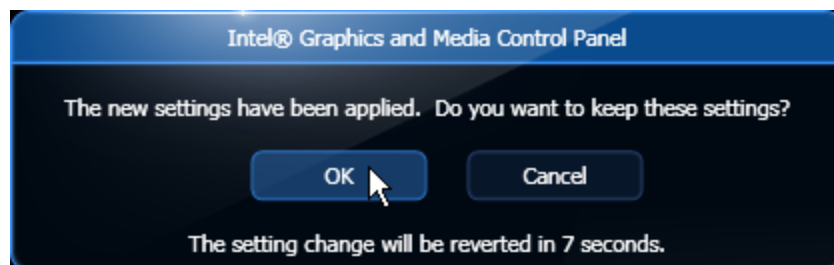
7. Select **OK** to close the Control Panel.

Single Display Mode

1. Select **Multiple Displays**.



1. From the Operating Mode drop-down menu select Single Display
2. Select **Monitor** (or **DigitalDisplay**).
3. Select **Apply**.
4. Select **OK** within 15 seconds to accept the new settings.



5. Select **OK** to close the Control Panel.

Intel Graphics Controller Hot Keys

Hot Keys provide the same functionality as the Intel Graphics Control Panel with specific keystrokes on the keyboard. These hotkeys are listed in the Intel Control Panel under the Hot Keys tab. The most useful Hot Keys are:

[CTRL][ALT][F1] - Monitor in single display mode

[CTRL][ALT][F4] - Digital Display in single display mode



Note: The Hot Keys can be used to recover from a blank display in Windows. This is true only if Windows Desktop loads completely; meaning, if Windows is waiting for a login/password entry or if Plug and Play is waiting for operator input, the Hotkeys are not yet active.

Installing a Cash Drawer

The small footprint of the RealPOS 60 permits the terminal to rest directly on most cash drawers. However, other peripherals like the keyboard or printer may or may not fit. The Cash Drawer can connect to the Cash Drawer connector or to the transaction printer.

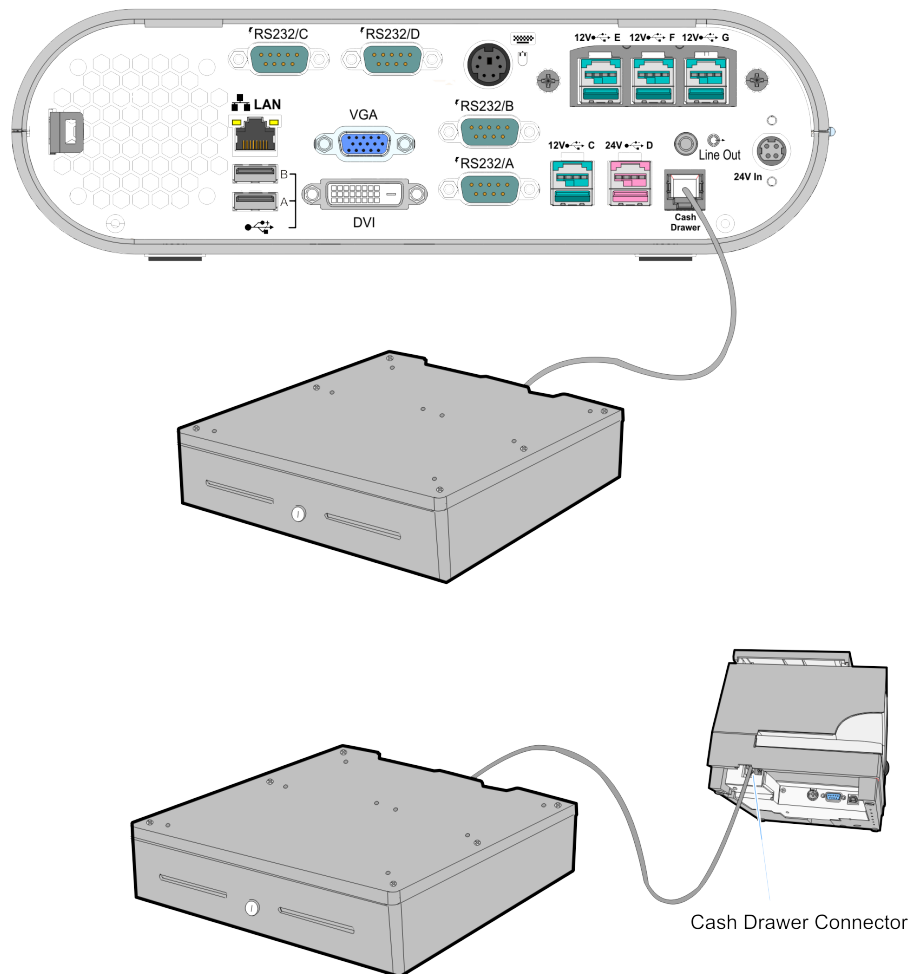


Note: The 7601 is not designed for integration with any current NCR cash drawer.

The 7601 supports the following Cash Drawers:

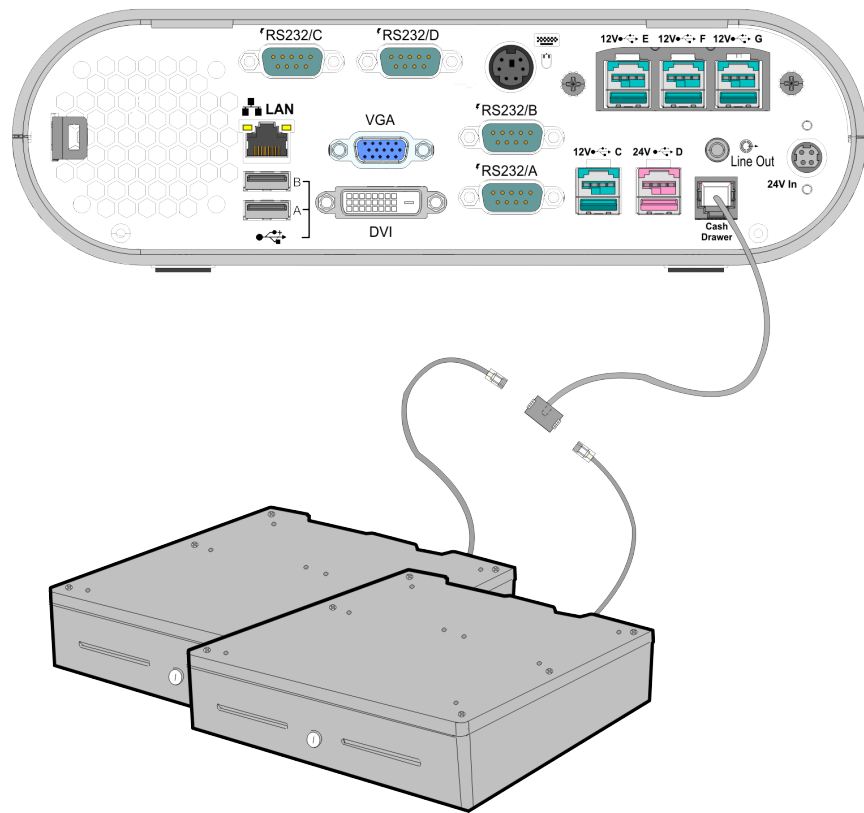
- 2181 Full-Size Cash Drawer
- 2183 Mid-Range Cash Drawer
- 2186 Compact Cash Drawer
- 2189 Full-size Cash Drawer

The Cash Drawer can be connected to the Back Panel on the 7601 or to the Cash Drawer Connector on the transaction printer.



Installing Two Cash Drawers

The 7601 supports a 2-drawer configuration with a Y-cable (1416 C372 0006).



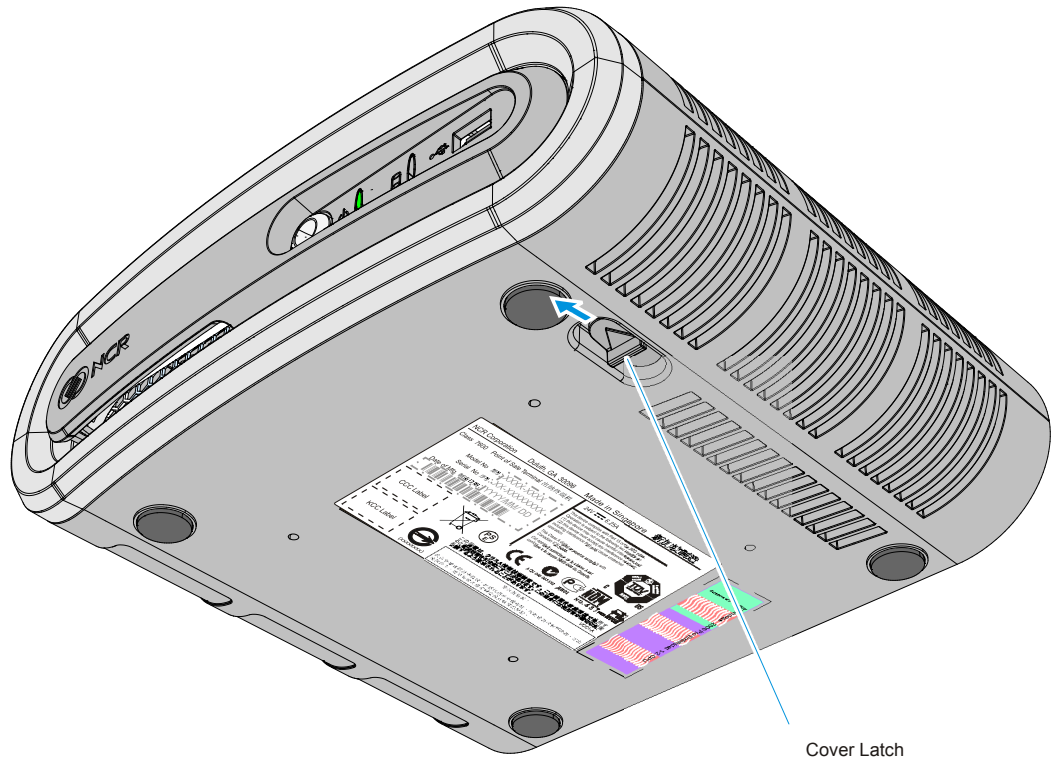
Replacing the Hard Disk Drive

The Hard Disk Drive (HDD) is mounted on the inside of the Top Cover.

1. Slide the Cover Latch on the bottom of the unit forward to unlock the Top Cover.



Note: First remove the Security Lock on the rear if present.

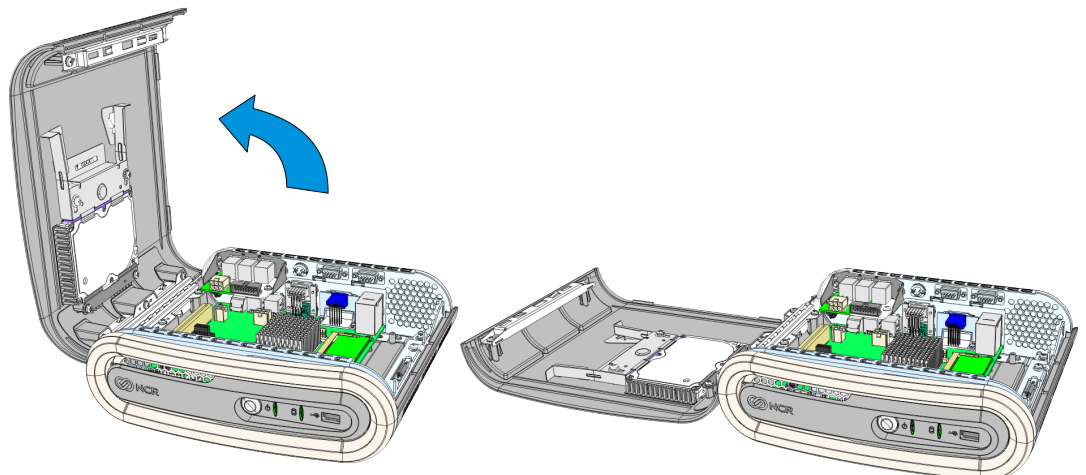


28591

2. Pivot the Top Cover open and gently rest it on the table surface.

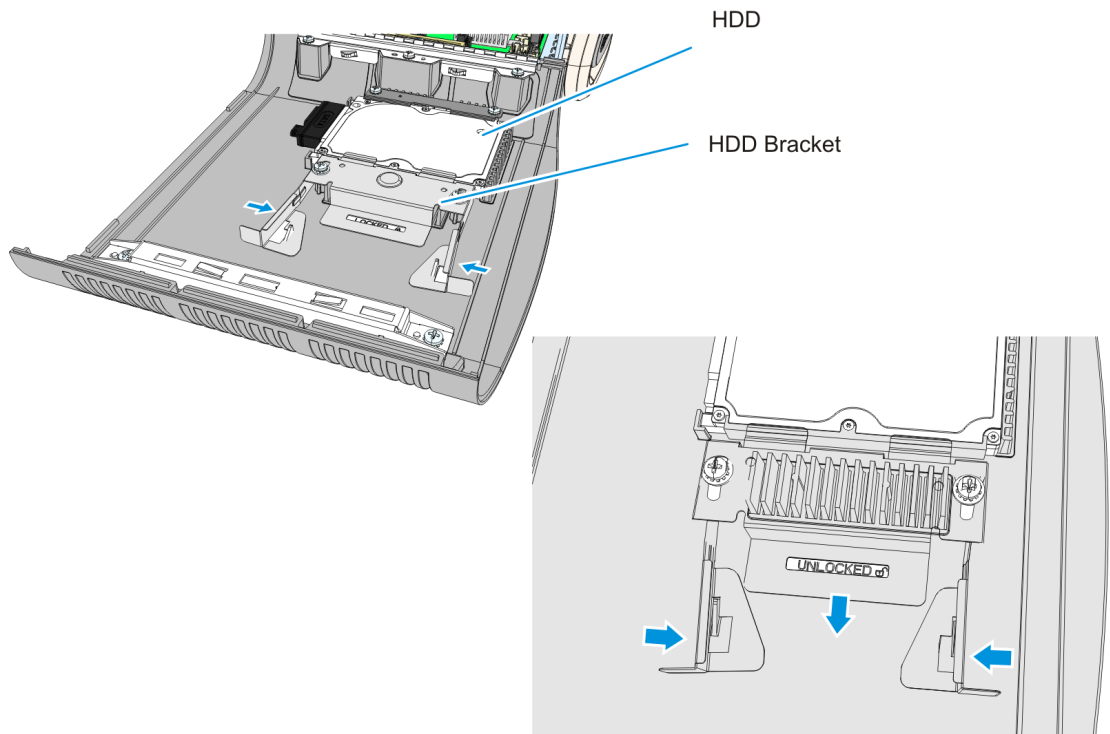


Caution: When opening the cover, do not allow it to drop onto the table surface. The mechanical shock can damage the HDD.



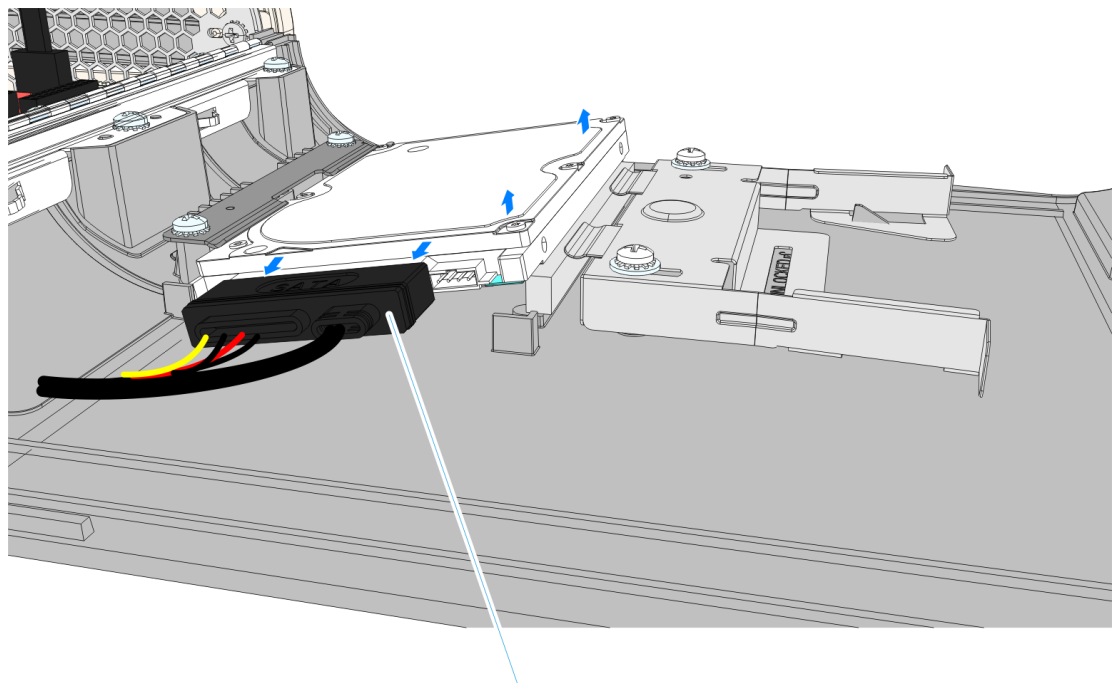
28592

3. Squeeze the latches on the HDD Bracket as shown to unlock the bracket from the Top Cover and slide the HDD Bracket as shown until you see Unlocked displayed in the opening in the HDD Bracket.



28593

4. Remove the HDD from the Top Cover Bracket and disconnect the cables.



HDD Data/Power Connector

28596

5. Install the new HDD using the reverse procedure.

Chapter 3: BIOS Setup

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**] and then [**Enter**] when the confirmation message is displayed. 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**].



Note: The 7610 Motherboard is used on other products and has a jumper that is used to select the proper BIOS defaults. If the Motherboard is replaced be sure this jumper is set to the RSD setting.

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

BIOS Default Values

NCR BIOS Version: 8.5.6.0

Main Menu

System Time	(variable)
System Date	(variable)
System Information	(Displays System Information)
Boot Features	
NumLock	[On]
Error Manager	
View Error Manager Log	[Enter]
Clear Error Manger Log	[Enter]

Advanced Menu

Network PCE Loading	[Disabled]
Mass Stprage [topm ROM Loading	[Enabled]
► PCI Subsystem Settings	
<i>PCI Option ROM Handling</i>	
PCI ROM Priority	[EFI Compatible ROM]
<i>PCI 64bit Resources Handling</i>	
Above 4G Decoding	[Disabled]
<i>PCI Common Settings</i>	
PCI Latency Timer	[32 PCI Bus Clocks]
VGA Palette Snoop	[Disabled]
PERR# Generation	[Auto]
PERR# Generation	[Disabled]
SERR# Generation	[Disabled]
Port CF9 Full Reset	[Enabled]

. ► PCI Express Settings

. *PCI Express Device Register Settings*

. Relaxed Ordering	[Disabled]
. Extended Tag	[Disabled]
. No Snoop	[Enabled]
. Maximum Payload	[Auto]
. Maximum Read Request	[Auto]

. *PCI Express Link Register Settings*

. ASPM Support	[Disabled]
. Extended Synch	[Disabled]
. Link Training Retry	[5]
. Link Training Timeout (uS)	100
Unpopulated Links	[Kiip Link ON]

► **ACPI Settings**

Enable ACPI Auto Configuration	[Disabled]
Enable Hibernation	[Disabled]
ACPI Sleep State	[Suspend Disabled]
Lock Legacy Resources	[Disabled]
S3 Video Repost	[Disabled]
ACPI S5 Shutdown	[Enabled]

► **Trusted Computing**

Configuration

TPM SUPPORT	[Enabled]
-------------	-----------

► **CPU Configuration**

Hyper-threading	[Enabled]
Active Processor Cores	[All]
Limit CPUID Maximum	[Disabled]
Execute Disable Bit	[Enabled]
Intel Virtualization Technology	[Enabled]
Hardware Prefetcher	[Enabled]

Adjacent Cache Line Prefetch	[Enabled]
TCC Activation offset	0
PrimaryPlane Current value	0
Secondary Plane Current value	0
▶ SATA Configuration	
SATA Controller(s)	[Enabled]
SATA Mode Selection	[IDE]
SATA Test Mode	[Disabled]
IDE Legacy / Native Mode Selection	[Legacy]
▶ ASF Configuration	
ASF Support	[Enabled]
▶ Intel TXT(LT) Configuration	
Secure Mode Extensions (SMX)	[Disabled]
Intel TXT(LT) Support	[Disabled]
▶ AMT Configuration	
Intel AMT	[Disabled]
BIOS Hotkey Pressed	[Disabled]
MEBx Selection Screen	[Disabled]
Hide Un-Configure ME Confirmation	[Disabled]
MEBx Debug Message Output	[Disabled]
Un-Configure ME	[Disabled]
Amt Wait Timer	0
Disable ME	[No]
ASF	[Enabled]
Activate Remote Assistance process	[Disabled]
USB Configure	[Enabled]
PET Progress	[Enabled]
AMT CIRA Timeout	0
WatchdDog	[Disabled]

. OS Timer	0
. BIOS Timer	0
► HDD S.M.A.R.T. Status	
SATA Port0 (SATA 3-1)	ST250VT000-1BS (250.0)
SMART Status	Supported /OK
SATA Port1 (SATA 3-2)	Not Present
SMART Status	N/A
SATA Port1 (SATA 2-1)	Not Present
SMART Status	N/A
SATA Port1 (SATA 2-2)	Not Present
SMART Status	N/A
► USB Configuration	
Legacy USB Support	[Enabled]
USB3.0 Support	[Enabled]
XHCI Hand-off	[Enabled]
EHCI Hand-off	[Disabled]
Port 60/64 Emulation	[Enabled]
<i>USB hardware delays and time-outs:</i>	
USB transfer time-out	[20 sec]
Device reset time-out	[20 sec]
Device power-up delay	[Auto]
► Info Report Configuration	
Summary Screen	[Disabled]
► SMART Settings	
SMART Self Test	[Disabled]
► System Super IO Configuratoin	
<i>. ► Serial Port 1/A Configuration</i>	
. Serial Port	[Enabled]
. Device Settings	IO=3F8h; IRQ=4;
. I/O Base Address	[0x3F8]

. IRQ	[IRQ4]
. Device Mode	[Standard Serial Po. . .]
. ► <i>Serial Port 2/B Configuration</i>	
. Serial Port	[Enabled]
. Device Settings	IO=2F8h; IRQ=3;
. I/O Base Address	[0x2F8]
. IRQ	[IRQ3]
. Device Mode	[Standard Serial Po. . .]
. ► <i>Serial Port 3/C Configuration</i>	
. Serial Port	[Enabled]
. Device Settings	IO=3E8h; IRQ=11;
. I/O Base Address	[0x3E8]
. IRQ	[IRQ11]
. Device Mode	[Standard Serial Po. . .]
. ► <i>Serial Port 4/D Configuration</i>	
. Serial Port	[Enabled]
. Device Settings	IO=2E8h; IRQ=10;
. I/O Base Address	[0x2E8]
. IRQ	[IRQ10]
. Device Mode	[Standard Serial Po. . .]
. ► <i>Parallel Port Configuration</i>	
. Parallel Port	[Disabled]
► H/W Monitor	
Smart Fan Mode	[Automatic Mode]
Fan OFF temperature limit	50
Fan Start temperature limit	60
Fan Start PWM	70
PWM Slope	[8 PWM]
<i>Hardware Health Monitoring</i>	
	Typical (Acceptable Range)

CPU Die Temperature	+46°C (<i>less than 55°C</i>)
CPU VRM Temperature	+51°C (<i>less than 55°C</i>)
System Temperature	+51°C (<i>less than 55°C</i>)
CPU Fan Speed	[5192] (<i>min 2500</i>)
System Fan Speed	[N/A]
VDIMM	+1.488 V (<i>1.4 - 1.6 V</i>)
VCORE	+1.088 V (<i>0.25 - 1.52 V</i>)
VCC3	+3.344 V (<i>3.04 - 3.57 V</i>)
+12V	+12.096 V (<i>11.2 - 12.8 V</i>)
VCC5	+5.004 V (<i>4.6 - 5.4 V</i>)
VAXG	+0.416 V (<i>0.25 - 1.52 V</i>)
VBAT	+2.912 V (<i>< 2.9 V</i>)
► Serial Port Console Redirection	
<i>COM0 (Disabled)</i>	
Console Redirection	Port is Disabled
<i>COM1(Pci Bus0,Dev0,Func0) (Disabled)</i>	
Console Redirection	Port is Disabled
<i>Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)</i>	
Console Redirection	[Disabled]
. ► Console Redirection Settings	
. Out-of-Band Mgmt Port	[COM0 (Disabled)]
. Terminal Type	[BT-UTF8]
. Bits per second	[115200]
. Flow Control	[None]
. Data Bits	8
. Parity	None
. Stop Bits	1
► Network Stack	
Network Stack	[Disable Link]

▶ CPU PPM Configuration

EIST	[Enabled]
CPU C3 Report	[Enabled]
CPU C6 Report	[Enabled]
CPU C7 report	[Enabled]
Config TDP LOCK	[Disabled]
Long duration power limit	0
Long duration maintained	28
Short duration power limit	0
ACPI T State	[Disabled]

▶ Switchable Graphics

SG Mode Select	[Muxless]
----------------	-----------

Chipset Menu

▶ PCH-IO Configuration	
. ▶ PCI Express Configuration	
. PCI Express Clock Gating	[Enabled]
. DMI Link ASPM Control	[Disabled]
. DMI Link Extended Synch Control	[Disabled]
. PCIe-USB Glitch W/A	[Disabled]
. Subtractive Decode	[Disabled]
. ▶ PCI Express Root Port 1,2,4,5,6,7,8	
. PCI Express Root Port 1,2,4,5,6,7,8	[Enabled]
. ASPM Support	[Auto]
. . URR	[Disabled]
. . FER	[Disabled]
. . NFER	[Disabled]
. . CER	[Disabled]
. . CTO	[Disabled]
. . SEFE	[Disabled]
. . SENFE	[Disabled]
. . SECE	[Disabled]
. . PME SCI	[Enabled]
. . Hot Plug	[Disabled]
. PCIe Speed	[Auto]
. Extra Bus Reserved	0
. Reserved Memory	10
. Reserved I/O	4
. ▶ USB Configuration	
. EHCI1	[Enabled]
. EHCI2	[Enabled]
. USB Ports Per-Port Disable Control	[Disabled]
. ▶ PCH Azalia Configuration	

. Azalia	[Auto]
. Azalia Docking Support	[Disabled]
. Azalia PME	[Disabled]
. Azalia Internal HDMI Codec	[Disabled]
. ► BIOS Security Configuration	
. SMI Lock	[Disabled]
. BIOS Lock	[Disabled]
. GPIO Lock	[Disabled]
. BIOS Interface Lock	[Enabled]
. RTC RAM Lock	[Enabled]
PCH LAN Controller	[Enabled]
. Wake on LAN	[Enabled]
Display Logic	[Enabled]
CLKRUN# Logic	[Enabled]
SB CRID	[Disabled]
<i>High Precision Event Timer Configuration</i>	
High Precision Timer	[Enabled]
SLP_S4 Assertion Width	[4-5 Seconds]
Restore AC Power Loss	[Power On]
► System Agent (SA) Configuration	
CHAP Device (B0:D7:F0:)	[Disabled]
Thermal Device (B0:D4:F0:)	[Disabled]
Enable NB Crid	[Disabled]
BDAT ACPI Table Support	[Disabled]
. ► <i>Graphics Configuration</i>	
. IGFX VBIOS Version	2168
. IGFX Frequency	650 MHz
. Graphics Turbo IMON Current	31
. Primary Display	[Auto]
. Internal Graphics	[Auto]

. GTT Size	[2MB]
. Aperture Size	[256M]
. DVMT Pre-Allocated	[64MB]
. DVMT Total Gfx Mem	[256MB]
. Gfx Low Power Mode	[Enabled]
. ► <i>LCD Control</i>	
. . Primary IGFX Boot Display	[VBIOS Default]
. . LCD Panel Type	[VBIOS Default]
. . SDVO-LFP Panel Type	[VBIOS Default]
. . Panel Scaling	[Auto]
. . Backlight Control	[PWM Inverted]
. . BIA	[Auto]
. . Spread Spectrum Clock Chip	[Pff]
. . TV1 Standard	[VBIOS Default]
. . TV2 Standard	[VBIOS Default]
. . ALS Support	[Disabled]
. . Acive LFP	[Int-LVDS]
. . Panel Color Depth	[18 Bit]
. ► <i>DMI Configuration</i>	
. . DMI Vc1 Control	[Enabled]
. . DMI Vcp Control	[Enabled]
. . DMI Vcm Control	[Enabled]
. . DMI LinkASPM Control	[L0sL1]
. . DMI Extended SynchControl	[Disabled]
. . DMI Gen 2	[Auto]
. ► <i>NB PCIe Configuration</i>	
. . PEGO - Gen X	[Auto]
. . PEGO ASPM	[Auto]

.. Enable PEG	[Auto]
.. De-emphasis Control	[-3.5 dB]
.. PEG Sampler Calibrate	[Auto]
.. Swing Control	[Full]
.. Gen3 Equalization	[Enabled]
... Gen3 Eq Phase 2	[Auto]
.. ► PEG Gen3 Root Port Preset Value for each Lane	
.... Lane 0 - 15	8
.. ► PEG Gen3 End Point Preset Value for each Lane	
.... Lane 0 - 15	0
.. ► PEG Gen3 End Point Hint Value for each Lane	
.... Lane 0 - 15	0
., . Gen3 Eq Preset Search	[Disabled]
.. Fast PEG Init	[Enabled]
.. RxCDem Loop back	[Disabled]
. ► <i>Memory Configuration</i>	
.. Memory Thermal Management	[Enabled]
. ► <i>GT - Power Management Control</i>	
.. RC6(Render Standby)	[Enabled]
.. RC6+(Deep RC6)	[Enabled]
.. GT OverClocking Support	[Disabled]

Boot Menu

Boot Configuration	
Setup Prompt Timeout	1
Bootup NumLock State	[On]
Quiet Boot	[Disabled]
Enable F8 BBS Boot Menu	[Disabled]
Boot Type	[Cold Boot]
Power Button 4 sec. Operation	[Power OFF]
Fast Boot	[Disabled]
Video Delay in Seconds	5
CSM16 Module Version	07.68
GateA20 Active	[Upon Request]
Option ROM Messages	[Force BIOS]
Interrupt 19 Capture	[Disabled]
CSM Support	[Enabled]
Boot mode select	[Legacy]
<i>Fixed Boot Order Priorities</i>	
Boot Option #1	[CD/DVDE]
Boot Option #2	[Hard Disk: ST250VT . . .]
Boot Option #3	[USAB CD/DVDE]
Boot Option #4	[USB Hard Disk]
Boot Option #5	[USB Floppy]
Boot Option #6	[USB Key]
Boot Option #7	[Network]
<i>. ► Hard Disk Drive BBS Priorities</i>	
. . Boot Option #1	[SATA PM: ST250VT0 . . .]

Chapter 4: BIOS Updating Procedure

Introduction

This chapter discusses procedures on how to recover the Operating System. The software is distributed on bootable CD/DVD/USB Flash Drive media.

There are two methods that can be used.

- Bootable USB DVD Drive
- USB Flash Drive (64-Bit Operating Systems)
- Network - Refer to the *NCR Retail Systems Manager (RSM) Software User's Guide*, (B005-0000-1518) for information about this procedure.

Prerequisites

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

- Bootable CD/DVD-ROM drive
- Keyboard

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

- USB Keyboard
- BIOS Software. Download 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 60 Rel. 2.0 (7601-2xxx) >> BIOS.**
3. Select the desired BIOS File.
 - ISO Image - Used with CD ROM boot device
 - Disk Image - Used with Floppy Disk boot device
 - Network Image - Used with Network boot
 - USB Memory Key Image - Used with USB boot device
4. 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 drive.
4. Open a DOS command window.
5. Change directory to the USB Memory Drive.
6. Execute the following command:

```
Syslinux -fma <USB drive letter>
```

Example: Syslinux -fma f:

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

If the resulting USB memory drive is not bootable, try the following command. This runs slower but is more effective.

```
Syslinux -sfma <USB drive letter>
```

Important: Do not run syslinux by double-clicking on it because it may affect the boot drive of the terminal being used to create the drive.

Windows 7 Note: The above commands must be executed as administrator. Failure to run as administrator results in an MBR write failure. To open a command shell with administrator privileges perform the following:

Start → **All Programs** → **Accessories** → **Command Prompt** →
[right-click] **"Run as"** → **Administrator**

BIOS Updating Procedures

1. Insert the media containing the BIOS update software into the terminal.
2. Connect a USB keyboard.
3. Press **[F8]** during boot (when you see the NCR logo) to enter the Boot Select menu.
4. Select **USB:[name of device]**.
5. The terminal boots and displays the 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 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. 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.

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

```

1 Update BIOS - No prompt for Serial/Model/Class unless invalid
***** Forced Update of Serial/Model/Class Information *****

2 Update BIOS - Always enter Serial/Model/Class

3 Update DMI only - Serial/Model/Class update ONLY (no BIOS Update)
***** For Service Personnel Only *****

4 Update BIOS - Default Serial/Model/Class

```

Option 1 - Update 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 BIOS and automatically reboots the terminal.

Option 2 - Update of BIOS - Always enter 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 2 and press **[ENTER]**.
2. At the prompt press **[ENTER]** to enter the Class/Model/Serial Number information (DMI). Follow the onscreen format instructions.

Example: 7610-1000-8801**[ENTER]**
54-19378230**[ENTER]**

3. Press **[1]** to confirm the data and to continue.
4. The Flash Program updates the BIOS and automatically reboots the terminal.

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

This option lets you enter the DMI information only. The BIOS is 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: 7610-1000-8801**[ENTER]**
54-19378230**[ENTER]**

3. Press **[1]** to confirm the data and to continue.
4. Remove the USB device before the system boots.
5. System is ready for operation.

Option 4 - Update BIOS - Default Serial/Model/Class information

This option is for Service Personnel only. It updates the 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 4 and press **[ENTER]**.
2. The BIOS are updated and the system reboots.
3. Remove the BIOS Update media before the system boots.
4. System is ready for operation.

Chapter 5: Operating System Recovery

Introduction

This chapter discusses procedures on how to recover the Operating System. The software is distributed on bootable CD/DVD/USB Flash Drive media.

There are two methods that can be used.

- Bootable USB DVD Drive
- USB Flash Drive (64-Bit Operating Systems)
- Network - Refer to the *NCR Retail Systems Manager (RSM) Software User's Guide*, (B005-0000-1518) for information about this procedure.

Prerequisites

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

- Bootable CD/DVD-ROM drive
- Keyboard

Windows XP Pro/POSReady 2009

1. Insert the *NCR Partition Image Application CD (D370-0605-0100)* into the CD/DVD 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. Select **USB:[name of device]**.
6. You should see a message during boot, indicating that the device 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
```

8. At the prompt, insert the CD containing the operating system image (disk 1 if OS occupies more than one disk). Wait until the LED on the DVD drive stops blinking and then press **[Enter]**.
9. Press **[A]** at the following prompt to accept the arguments and to begin the restore process. Press **[Enter]**.

```
Confirm Pending Operation
```

```
Mode is: restore
```

```
2) Drive is: USB/SATA Storage A Size: 250GB
3) Directory path is: /Images/
4) Filename is: nnnnnaaa
5) Reboot after operation complete: yes
6) Resize last data partition if possible: no
7) Resize last data partition to: Full Disk
8) Write zeros to drive before restore: no
9) RAID - restore to 2nd drive: none
```

- A) Accept these arguments
- V) View OS Documentation
- Q) Quit and reboot

10. At the following prompt replace the CD with the next CD. Press **[Enter]** to continue.

```
+-----+ Automatic mount +-----+
|
| Please, press "ok" to mount          |
| [/dev/cdrom] on [mnt/cdrom]         |
|               +-----+            |
|               |  Ok  |              |
|               +-----+            |
+-----+-----+-----+-----+
```

11. Repeat the previous step for each CD as required.
12. Remove the last CD before the system reboots.
13. Complete the OS installation as required per OS.

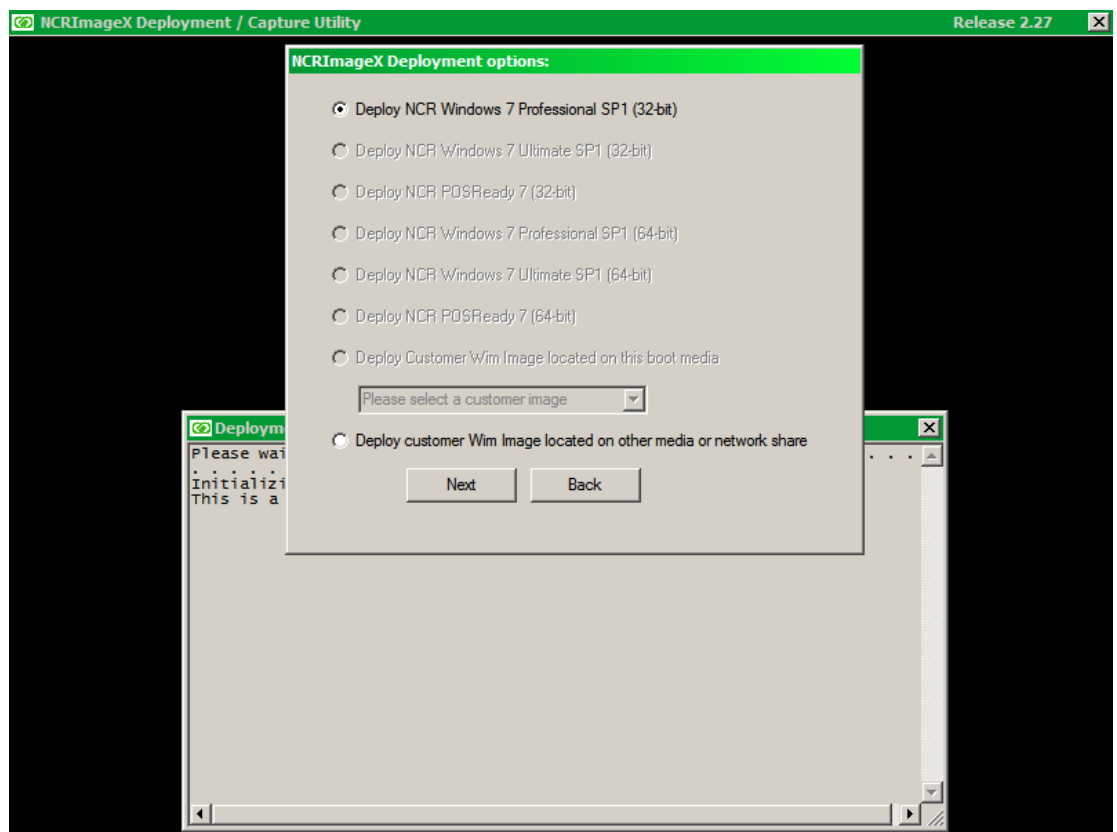
Windows 7/POSReady 7

The *NCRImageX Deployment/Capture Utility* application is used to deploy and capture Windows images. It is available on a bootable DVD along with the operating system image.

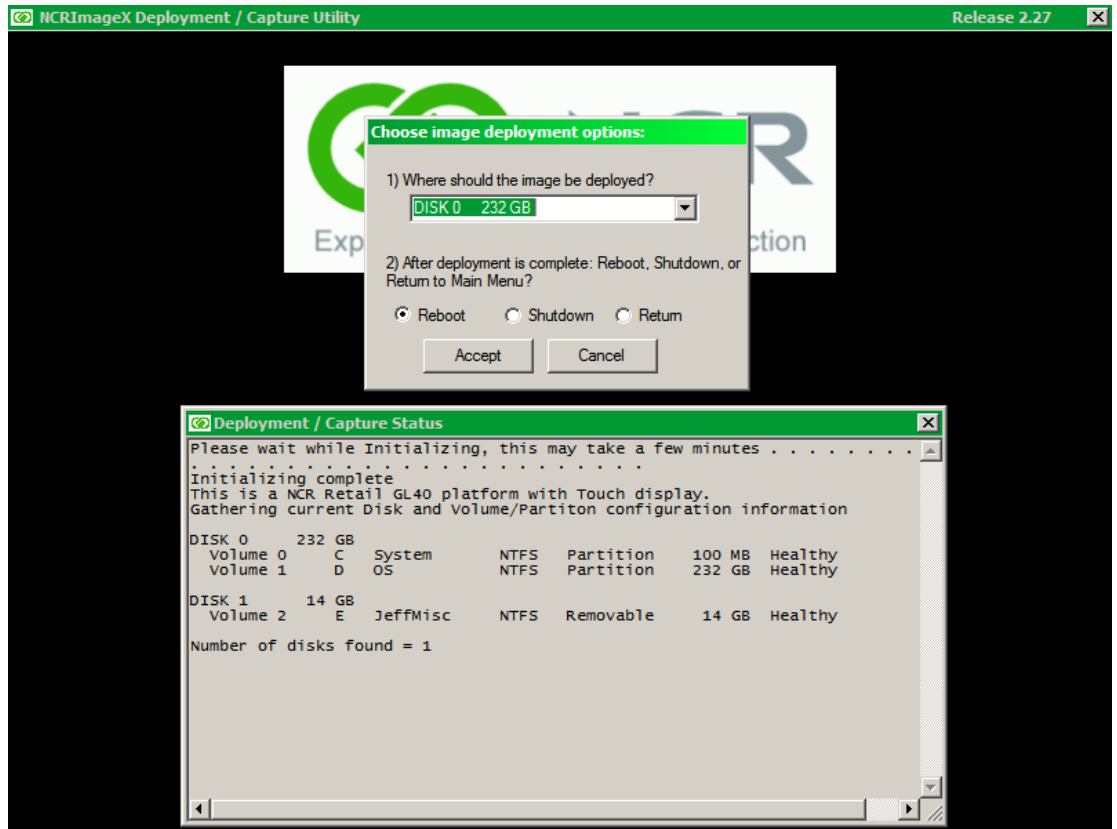


Note: If you are recovering a dual drive system that is configured as a RAID you should change the system back to a non-RAID configuration before performing the OS recovery. After recovering the primary disk you can then re-configure the RAID.

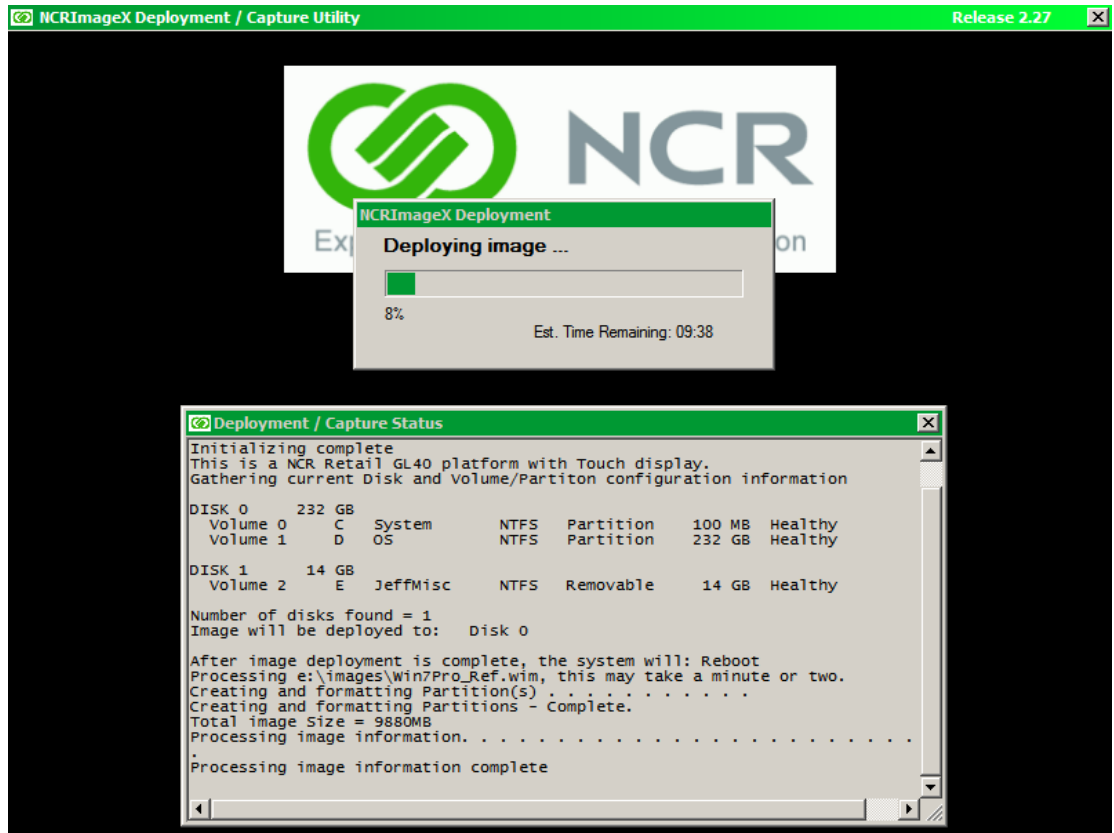
1. Connect a keyboard to the terminal.
2. Insert the imaging utility DVD into the DVD drive (USB Flash Drive for 64-Bit)
3. Apply power to the terminal.
4. Press **[F8]** during boot (when you see the NCR logo) to enter the Boot Select menu.
5. Select **USB:[name of device]**.
6. You should see a message during boot, indicating that the device has been recognized.
7. The Options Menu displays the available operating systems on the media. Verify it is the correct OS and then select **Next**.



8. Select the destination where the image should be deployed from the drop down menu. Also select the radio button to reboot the terminal after the image has been installed. Select **Accept**.




9. As the image is deployed a progress bar indicates the status.



10. After the image has been put on to your terminal, you are given the message "Press OK to Reboot". Select **OK**.
11. Remove the DVD before the system reboots.
12. Complete the Windows 7/POSReady 7 setup.

Chapter 6: 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 dis-solvent. 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.
4. Do not use sharp objects to clean around the edges of the touch screen

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

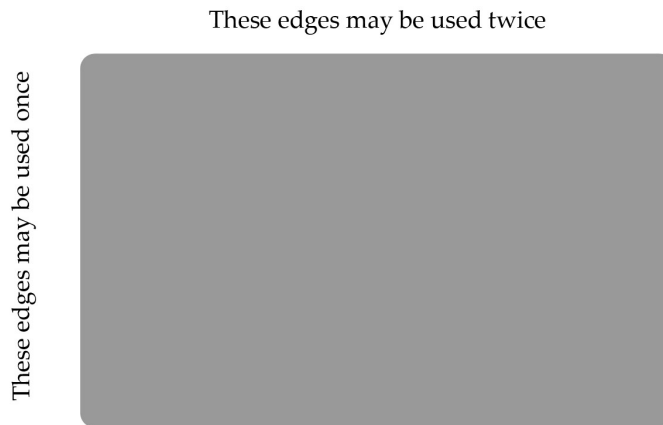
MSR Treatment Card

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:

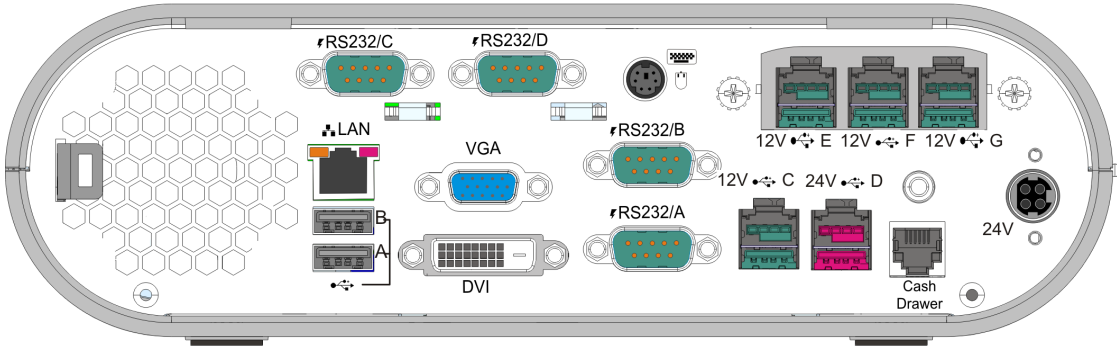
Prior to placing in operation, the MSR device should be swiped with the MSR Treatment Card.

Existing MSR:

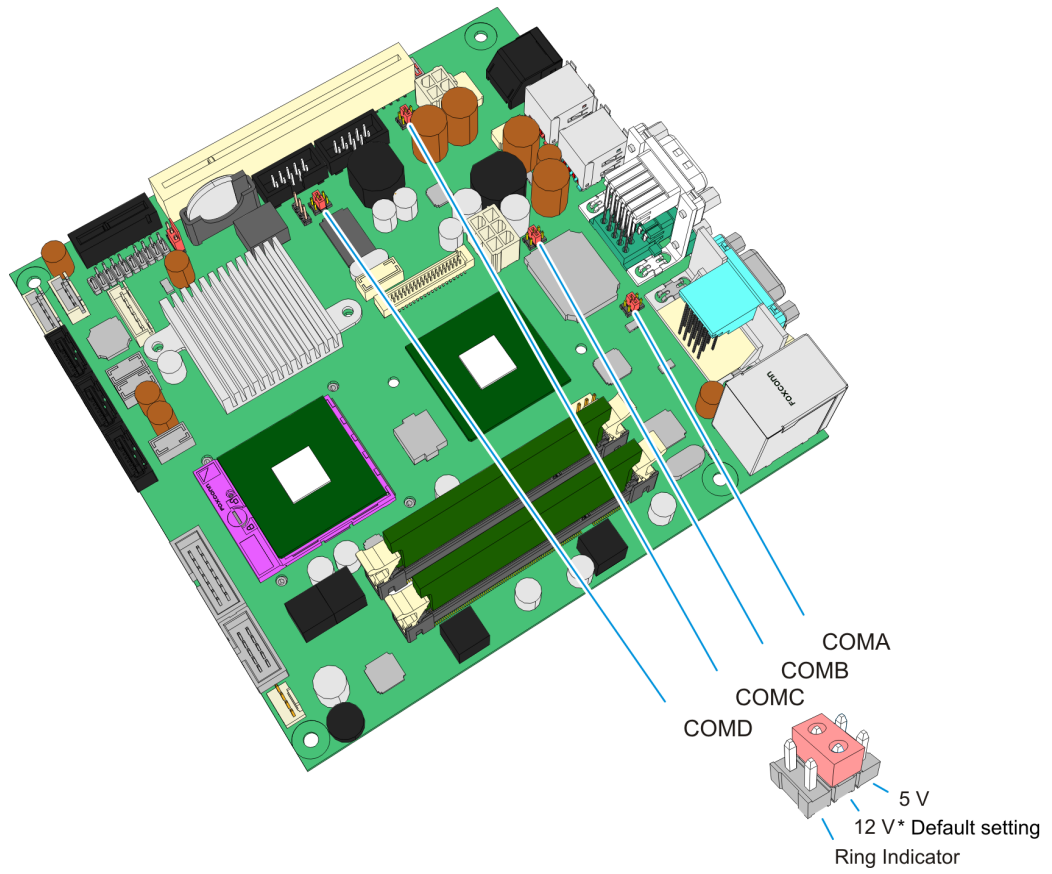
An existing MSR should be cleaned using an MSR Cleaning Card before treating it with a MSR Treatment Card. For low use retail establishments, the cleaning and treatment procedures should be followed at least once per month. In areas of extremely high traffic (in excess of 500 swipes per day) or an operating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

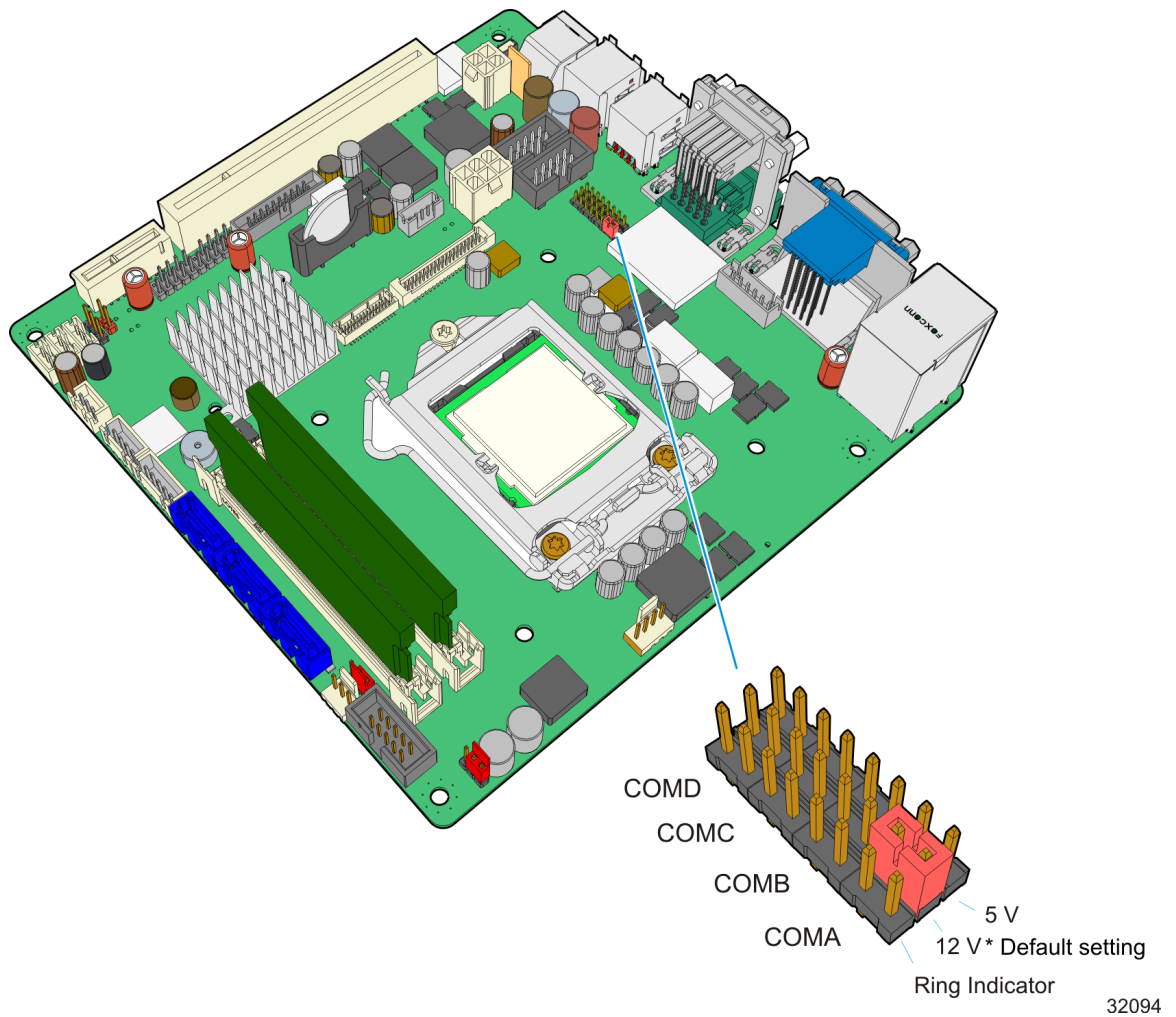
Appendix A: Powered Serial Port Settings

The serial ports on the 7601 can be configured as powered or not. The default setting for all the ports is 12 V powered. To change the settings open the Top cover and change the jumpers on the Motherboard using the illustrations below.



Motherboard 1.x





Motherboard 2.x

