

User Guide

NCR CX7 All-in-One POS (7772)



BCC5-0000-5363
Issue A



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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 CX7 All-in-One POS (7772)* 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.

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.**

Out of Box Failure (OBF)

If you experience an out of box failure (OBF) during installation or staging related to a missing, wrong or defective unit or item, simply provide NCR with a detailed description of the issue and the item will be replaced free of charge. For assistance with this process send an email to CustomerSat.Retail@ncr.com with the following details:

- NCR Sales Order # (Sales Order # are located on the box)
- Date of Product Installation
- Product Model #
- Unit Serial #
- NCR part # of defective/missing/wrong component
- Description of Failure (please be specific. For example: “display will not power on”)
- Customer/Requestor’s contact name, phone number and/or e-mail address
- Address to ship replacement part(s)

Transport the product in its original packaging to prevent impact damages.

If you do not have access to a computer, you may leave a voice message at: 1-800-528-8658 (USA), or (International) +1-770-623-7400. When leaving a message, please provide a phone number and/or an email address so NCR can contact you if additional details are needed.



Note: Used equipment that experiences a failure does not qualify as an OBF and should go through the NCR warranty process.

Warranty

Warranty terms vary by region and country.

All parts of this product that are subject to normal wear and tear are not included in the warranty. In general, damages due to the following are not covered by the warranty.

- Improper or insufficient maintenance
- Improper use or unauthorized modifications of the product.
- Inadequate location or surroundings. Site installation must conform to guidelines listed in the *NCR CX7 All-in-One POS (7772) Site Preparation Guide* (BCC5-0000-5364) and the *NCR Workstation and Peripheral AC Wiring Guide* (BST0-2115-53).

For detailed warranty arrangements please consult your contract documents.

Returning Defective Hardware for Service

Use the following procedure to report/return defective hardware.

Call the *NCR Customer Care Center* at 1-800-262-7782 and have the following information available when you place the call.

- Class/Model number of the defective equipment
- Serial Number of the defective equipment
- Equipment location in the store
- Description of the problem, including any system error codes, error condition, or guidance to the area of failure.

The NCR Agent will provide you with a work order number, which serves as your Return Material Authorization (RMA). Please provide the RMA on the outside of the shipping box.



Note: A work order must be opened for each device that is shipped for repair.

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Revision Record

Issue	Date	Remarks
A	Jul 2019	First Issue

Chapter 1: Product Overview



CCP-76587

The NCR CX7 All-in-One POS (7772), powered by Intel's 8th Generation Coffee Lake chipset, features a sleek design, packed with superior performance. The new, stylish design provides a wide range of configuration versatility. The ability to configure with an I/O board that accommodates environments with more USB devices or an I/O board that accommodates environments with more serial devices gives customers the flexibility that prevents additional expansion boards or hubs.

The CX7 offers two I/O configurations for the base:

- Retail I/O Base
- Hospitality I/O Base

I/O Board Connectors	Retail I/O	Hospitality I/O
USB-C to Head	1	1
12V Powered USB	3	1
24V Powered USB	1	1
Serial	1 x RJ50 1 x DB9	4 x RJ12 2 x RJ45
USB 3.0 (5V)	2	2
DisplayPort	1	1
Cash Drawer (12/24 V)	1 (dual port)	2

I/O Board Connectors	Retail I/O	Hospitality I/O
LAN	1	1

Both I/O boards are connected to the CX7 core motherboard through a single USB Type-C connector. In addition to the integration of the board in the base, each I/O can be configured for a wall mount solution, pole mount solution, or ordered in a remote chassis to permit placement under the counter.

Base Models

Model	Description
7772-1216-8801	15.6" PCAP RGB w/ Intel Celeron, 8GB DDR4 memory, No HDD, No Power Supply
7772-1316-8801	15.6" PCAP RGB w/ Intel i3, 8GB DDR4 memory, No HDD, No Power Supply
7772-1516-8801	15.6" PCAP RGB w/ Intel i5, 8GB DDR4 memory, No HDD, No Power Supply

Features

Feature		Description
Memory	F134	8GB, DDR4 2400MHz (Add On)
	F136	16GB, DDR4 2400MHz (Add On)
Storage Media	F241	SSD 120 GB, M.2 SATA
	F242	DUAL SSD 120 GB, M.2 SATA
	F253	SSD 240 GB, M.2 NVMe (PCIe)
	F255	SSD 480 GB, M.2 NVMe (PCIe)
Port A (Right Side) Features	F140	No Peripheral Filler Plate
	F141	NCR Encrypted MSR
Port B (Left Side) Features	F150	No Peripheral Filler Plate
	F151	Biometrics
Port C (Bottom/ Chin) Features	F160	No Peripheral Filler Plate
	F165	Wireless Card and Antenna
Port D Features	F450	No Customer Display - Logo Badge
	F452	7" Non-Touch LCD (XL7) Customer Display
	F453	7" Touch LCD (XL7) Customer Display
Base Display	F457	No Base Display Option
Base and Power Supply	F033	Base for Retail I/O, Remote Power Supply
	F035	Base for Hospitality I/O, Remote Power Supply
Power Cord	F100	US Power Cord
	F101	International Power Cord
	F102	UK Power Cord
	F103	Australia Power Cord
	F104	China Power Cord
	F105	SEV Power Cord
	F106	India Power Cord
	F108	Argentina Power Cord
	F109	Power Cord 120V Twist Lock
	F119	No Power Cord

Optional Features

Optional Feature		Description
Ethernet Cable	F110	7772 10/100/1000 Ethernet Cable

Operating Systems

The OS image and base platform drivers will be pre-loaded on the solid state drive prior to shipment. The POS must be configured with a solid state drive.

Product ID	Product ID Description	Configuration Notes
7772-F700	No Operating System	Approval required
7772-F720	Windows 10 IoT Enterprise 2019 LTSC Value 64 bit (UEFI) Embedded Operating System	Pre-installed in the factory
7772-F740	Orderman Windows 10 IoT Enterprise 2019 LTSC Value 64 bit (UEFI) Embedded Operating System	Pre-installed in the factory
7772-F790	SUSE Linux Enterprise Server (SLES) 15 64 bit Operating System	Pre-installed in the factory

Base client and third-party software are also available on the public NCR Platform Software Website: http://www.ncr.com/support/support_drivers_patches.asp?Class=External\display

Specifications

Model Specs	Good	Better	Best
Chipset	Intel Q370 "Coffee Lake"		
Processor	Intel® Celeron® G4900T	Intel® Core™ i3-8100T	Intel® Core™ i5-8500T
Clock Speed	2.9GHz	3.1GHz	2.1GHz
Turbo Boost for Peak Loads	N/A	N/A	Up to 3.5 GHz
Level 2 Cache	2MB	4MB	6MB
Thermal Design Power	35 Watts	35 Watts	35 Watts
AMT	No	Yes	Yes
Intel vPro	No	No	Yes
Image Recovery Button	Yes	Yes	Yes
Odometer Chip	Yes	Yes	Yes
RAID Support	Yes	Yes	Yes
TPM	Yes	Yes	Yes
Memory			
Memory Type	DDR4-2133MT	DDR4-2133MT	DDR4-2133MT
Form Factor	SODIMM	SODIMM	SODIMM
Memory Slots	2	2	2
Standard Memory	8GB (1 x 8GB)	8GB (1 x 8GB)	8GB (1 x 8GB)
Maximum Memory	32GB (2 x 16GB)	32GB (2 x 16GB)	32GB (2 x 16GB)
Storage			
SSD - Solid State Drive (M.2 SATA)	120GB SSD	120GB SSD	120GB SSD
SSD - Solid State Drive (M.2 NVMe)	240GB SSD	240GB SSD	240GB SSD
SSD - Solid State Drive (M.2 NVMe)	480GB SSD	480GB SSD	480GB SSD

Model Specs	Good	Better	Best
Dual Solid State Drive (M.2 SATA)	Dual 120GB SSD	Dual 120GB SSD	Dual 120GB SSD
Integrated Touch Display			
15.6" Projected Capacitive 1366 x 768 10-point touch	Yes	Yes	Yes
Brightness	400 nits	400 nits	400 nits
Screen Life	50K Hours to half brightness	50K Hours to half brightness	50K Hours to half brightness
Integrated Speaker	Standard	Standard	Standard
Peripherals			
3-track Encrypted MSR	Option	Option	Option
Integrated Wireless 802.11 AC & Bluetooth	Option	Option	Option
Integrated Biometric Reader	Option	Option	Option
Imager	Option	Option	Option
2-in-1 Sign-in Device	Option	Option	Option
Consumer Displays			
APA customer display	Option	Option	Option
7" Color LCD (Touch or Non-touch)	Option	Option	Option
10" Color LCD (Touch or Non-touch)	Option	Option	Option
Dimensions/Weight			
CX7 terminal with base	<ul style="list-style-type: none"> Dimensions (w x d x h) 14.95" x 7.81" x 12.08" (379.7 mm x 198.4 mm x 306.8 mm) Weight 11.35 lbs (5.15 kg) 		

Model Specs	Good	Better	Best
CX7 terminal without base	<ul style="list-style-type: none"><li data-bbox="727 241 1247 359">• Dimensions (w x d x h) Width 14.95" x 1.26" x 9.32" (379.7 mm x 32.0 mm x 236.6 mm)<li data-bbox="727 369 1000 443">• Weight 5.30 lbs (2.40 kg)		

Mounting Configurations

Base with Remote Power Supply (F033/F035)

- with Retail I/O (F033)
- with Hospitality I/O (F035)



CCP-76587

Base with Integrated Power Supply

7772-K032 provides an option to permit integration of the power supply in the base.

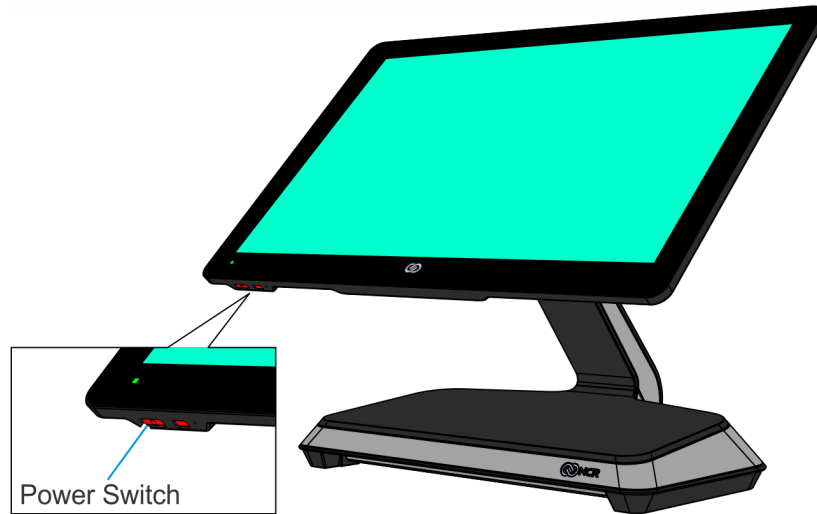


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Operator Controls

Power Switch

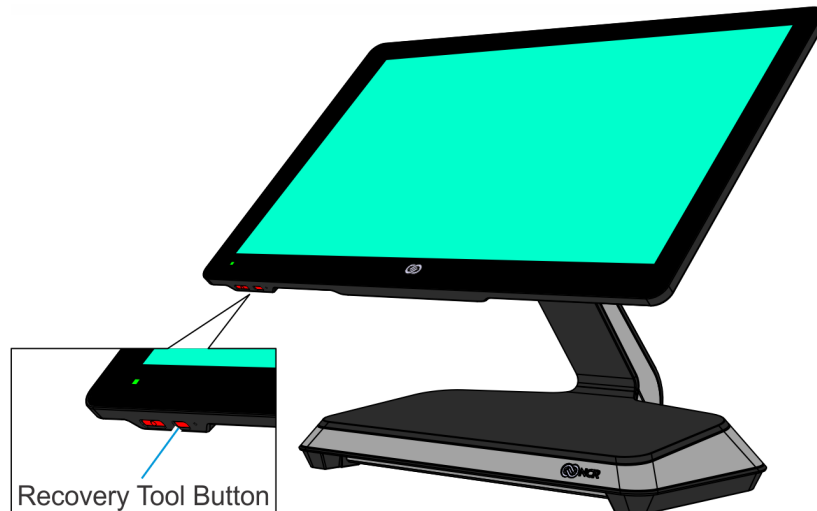
The Power Switch is located on the bottom of the display. This switch is a momentary contact, push-on-push-off switch.



CCP-76588

Recovery Tool Button

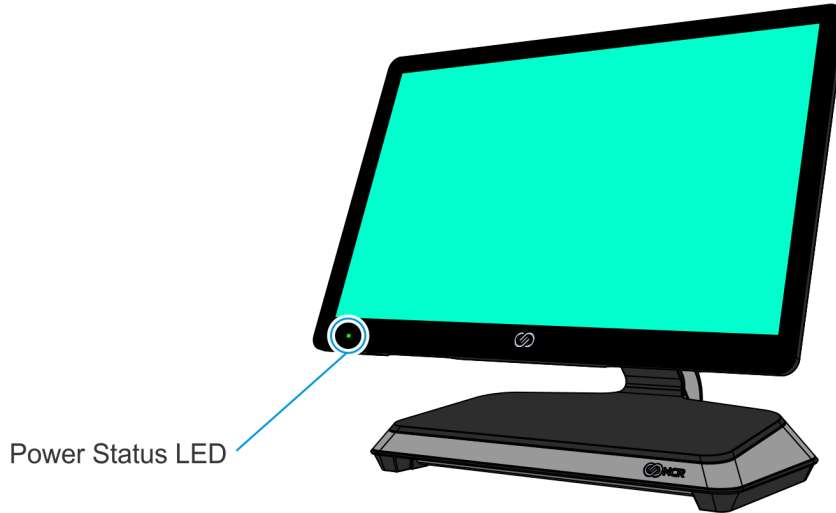
The Recovery Tool Button is for the OS Recovery Tool option. The recessed button is located on the bottom of the display. The button is a momentary contact, push-on-push-off switch.



CCP-76590

LED Indicators

Power Status LED



CCP-76589

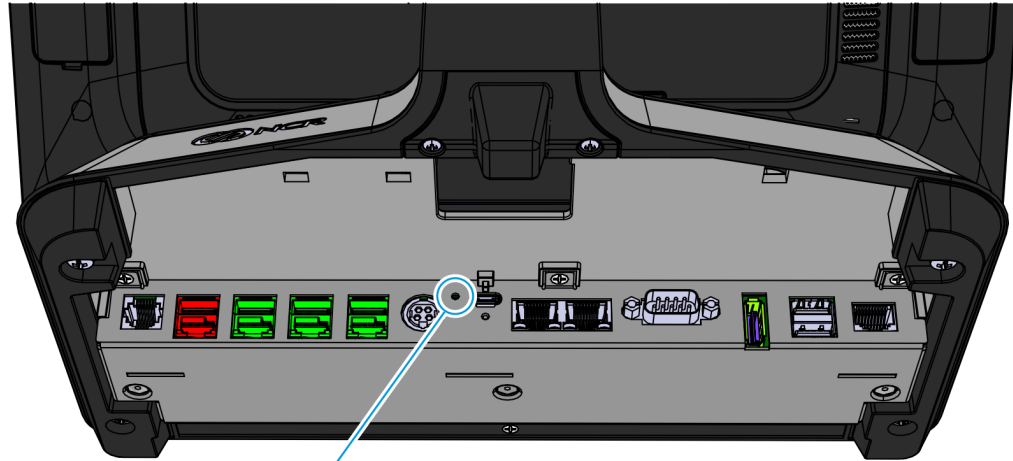
The Power Status LED, located on the front of the display, has multiple functions as defined below.

Color	Description
Solid Green	Terminal is ON and all voltages from power supply and motherboard are okay.
Blinking Green	Terminal is in SUSPEND (S3/S4) mode.
Solid Red	Processor over temperature.

I/O Panel LED

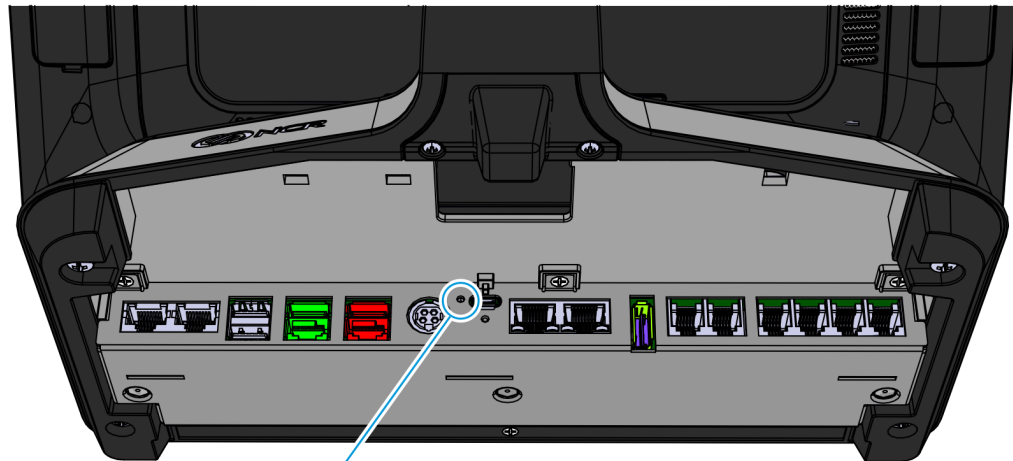
The Status LED is located on the I/O Panel on the Base.

RETAIL I/O



LED Diagnostic Indicator

HOSPITALITY I/O



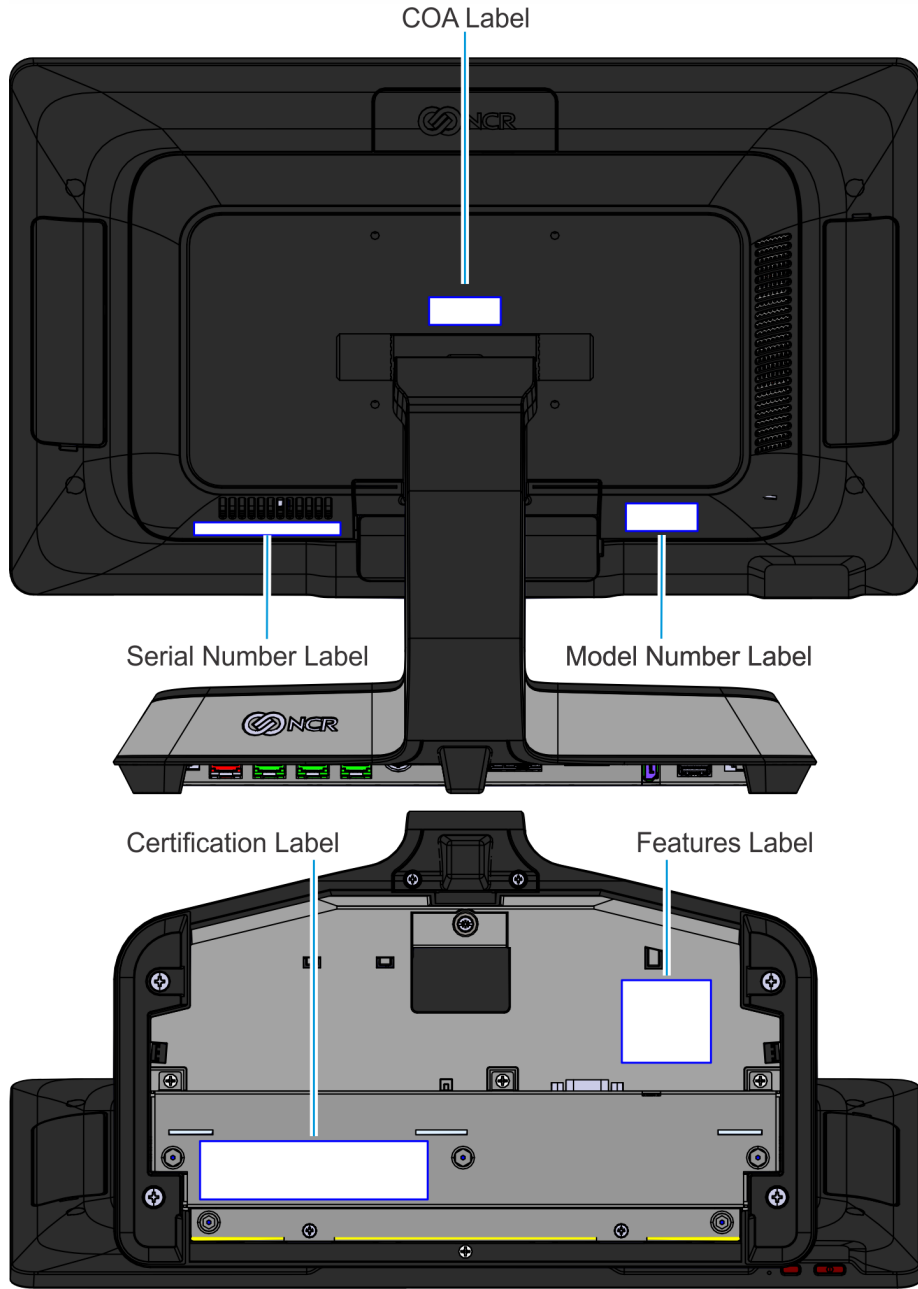
LED Diagnostic Indicator

CCP-76591

Color	Description
Green	On
Orange	S3
Off	Off

Label Locations

CX7 with Base



Chapter 2: Hardware Installation

Installation Restrictions

- The NCR CX7 All-in-One POS (7772) conforms to all applicable legal requirements. To view the compliance statements see the [NCR RealPOS Terminals Safety and Regulatory Statements](#) (B005-0000-1589).
- Install the CX7 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 CX7 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 CX7 terminal.



Warning: 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.

Ergonomic Workplace

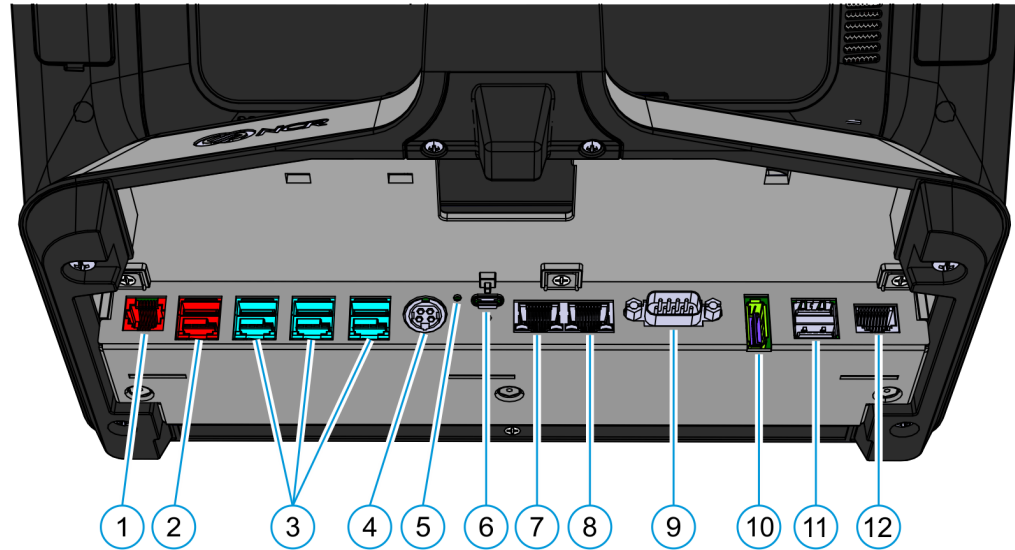
The NCR CX7 All-in-One POS (7772) has a high-brightness LCD with an anti-glare screen. For best results, please observe the following when considering the terminal workplace:

- Avoid direct-glaring and reflective-glaring light. Locate the terminal in a controlled luminance surrounding. When installed next to windows position the terminal so it does not reflect the outside light.
- If possible, avoid reflective glaring caused by electric light sources.
- Position the terminal for ideal viewing angles.

I/O Ports

Retail I/O

The following are the default I/O ports for the NCR CX7 All-in-One POS (7772) with a Retail I/O Base.

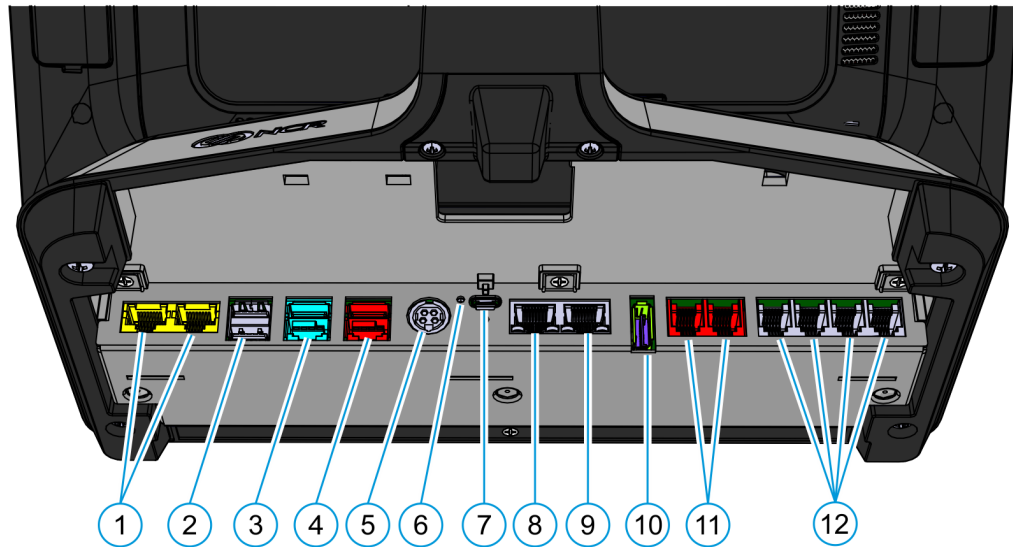


CCP-76592

Callout	Port Name
1	Cash Drawer
2	USB 24V
3	USB 12V
4	24V Power In
5	LED
6	USB-C
7	LAN Out
8	LAN In
9	DB9 Serial
10	DisplayPort
11	Dual USB 3.0
12	RJ50 Serial

Hospitality I/O

The following are the default I/O ports for the NCR CX7 All-in-One POS (7772) with a Hospitality I/O Base.



CCP-76593

Callout	Port Name
1	RJ45 Serial
2	Dual USB 3.0
3	USB 12V
4	USB 24V
5	24V Power In
6	LED
7	USB-C
8	LAN Out
9	LAN In
10	DisplayPort
11	Cash Drawer
12	RJ12 Serial

I/O Board Connector Pinouts

12V USB + Power

The I/O Board provides latching 12V Powered USB port (Foxconn P/N UB11123-GHT2-4F or NCR approved equivalent). The 12V Powered USB port is capable of supplying 12V at 2.0A max. The color of the connector is teal.

The 12V of each port is fused with a self-healing poly-fuse (Polytronics Everfuse P/N SMD2920P300TF/15 or NCR approved equivalent). An overcurrent signal is used to detect when this fuse is open. This signal is connected to a GPIO on the Super I/O.

Current limiting power switches are provided on the 5V VBUS pins with a limit current of 1A.

The Retail I/O Board provides three 12V Powered USB ports, while the Hospitality I/O Board provides one 12V Powered USB port.

Signal Name	Pin	Pin	Signal Name
USB PWR	1	5	GND
USB D-	2	6	+12V
USB D+	3	7	+12V
GND	4	8	GND
FRAME GND	9	10	FRAME GND
FRAME GND	11	12	FRAME GND

24V USB + Power

The I/O Board provides one latching 24V Powered USB port (Foxconn P/N UB11123-GHR3-4F or NCR approved equivalent). The 24V Powered USB port is capable of supplying 24V at 2.3A continuous and 3.0A peak. The color of the connector is red.

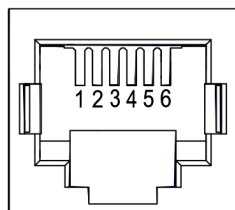
The 24V is fused with a resettable fuse (Tyco RUEF250U or NCR approved equivalent). An overcurrent signal is used to detect when this fuse is open. This signal is connected to a GPIO on the Super I/O. A separate return line, 24V_RET, is used instead of ground to provide noise isolation.

Signal Name	Pin	Pin	Signal Name
USB PWR	1	5	24V_RET
USB D-	2	6	+24V
USB D+	3	7	+24V
GND	4	8	24V_RET
FRAME GND	9	10	FRAME GND
FRAME GND	11	12	FRAME GND

Cash Drawer

Cash Drawer Connector for Retail I/O

The Retail I/O Board provides a single 6-position RJ12 connector (Molex 44248-0065 or NCR approved equivalent).

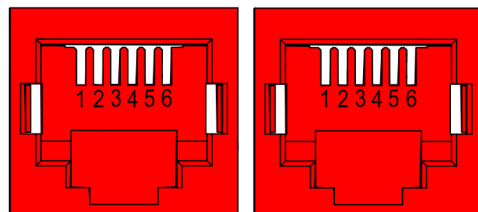


CCP-77004

Pin	Signal Name
1	Frame Gnd
2	Solenoid A
3	Drawer A/B
4	+24V/12V
5	Solenoid B
6	Logic Gnd

Cash Drawer Connector for Hospitality I/O

The Hospitality I/O Board provides a dual package RJ12 connector. The color of the connector is red. When using a legacy Y-cable adapter, only Cash Drawer Port A of the adapter will be functional.



A

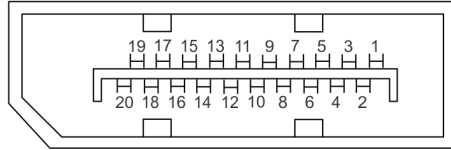
B

CCP-77004

Pin	Signal Name
1	Frame Gnd
2	Solenoid A
3	Drawer A/B
4	+24V/12V
5	NC
6	Logic Gnd

DisplayPort

The I/O Board provides a 2-lane DisplayPort. Lanes 2 and 3 of the DisplayPort are not connected internally.



CCP-76975

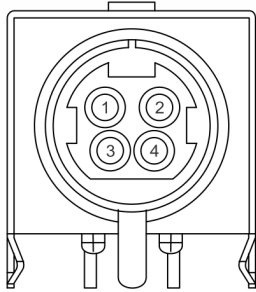
Pin	Signal Name
1	ML_Lane0 (p)
2	GND
3	ML_Lane0 (n)
4	ML_Lane1 (p)
5	GND
6	ML_Lane1 (n)
7	ML_Lane2 (p)
8	GND
9	ML_Lane2 (n)
10	ML_Lane3 (p)
11	GND
12	ML_Lane3 (n)
13	CONFIG1
14	CONFIG2
15	AUX CH (p)
16	GND
17	AUX CH (n)
18	Hot Plug Detect
19	Return
20	DP_PWR

LAN

The I/O Board provides Gigabit Ethernet support on an RJ45 connector using a pass-through connection to the motherboard. The connector does not feature an LED indicator.

Power In

Both Retail and Hospitality I/O Boards accept +24V DC voltage input from an external power supply. The Power In connector is a 4-pin DIN - CUI PD-40S or equivalent.

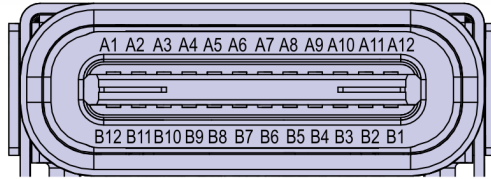


CCP-76976

Pin	Signal Name
1	GND
2	24V
3	GND
4	24V

USB-C

The I/O Board is connected to the motherboard through a non-standard USB Type C connector. The I/O Board provides a +24V power to the motherboard through the VBUS lines of the USB-C connector.



CCP-73981

Signal	Pin	Pin	Signal
GND	A1	B12	GND
USB 3.0 TX1+	A2	B11	USB 3.0 RX1+
USB 3.0 TX1-	A3	B10	USB 3.0 RX1-
+V (24V)	A4	B9	+V (24V)
CC1 (GPIO1)	A5	B8	SBU2
USB 2.0 A D+	A6	B7	USB 2.0 B D-
USB 2.0 A D-	A7	B6	USB 2.0 B D+
SBU1	A8	B5	CC2 (GPIO2)
+V (24V)	A9	B4	+V (24V)
Display Port	A10	B3	Display Port
Display Port	A11	B2	Display Port
GND	A12	B1	GND

Since reversibility is not required, the CC1 and CC2 signals will be re-purposed for the following functions:

Signal	Pin	Function
CC1 (GPIO1)	A5	Power Status from Motherboard
CC2 (GPIO2)	B5	Display Port Hot Plug Detect

USB 3.0

The I/O Board provides a dual-stack USB 3.0 Type A connector. Each standard +5V USB port is capable of supplying 5V at 900mA which is controlled via load switch.

DB-9 Serial

The Retail I/O Board provides one full RS-232 serial port through a DB-9 connector. The port has a shunt to select between +12V (default), +5V, or normal RI functionality. Maximum power capability is 1A from this port. The power output from this port is protected by a self-healing fuse.

Pin	Signal Name
1	DCD
2	DSR
3	RXD
4	RTS
5	TXD
6	CTS
7	DTR
8	GND
9	RI

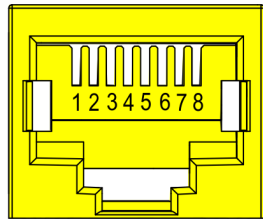
RJ12 Serial

The Hospitality I/O Board provides a quad-package RJ12 serial port. The RJ12 port is an unshielded 6-pin. The color of the connector is black.

Pin	Signal Name
1	RTS
2	GND
3	TX
4	RX
5	GND
6	CTS

RJ45 Serial

The Hospitality I/O Board provides one dual package RJ45 serial port. The RJ45 port is an unshielded 8-pin. The color of the connector is yellow.



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Pin	Signal Name
1	DSR
2	DCD
3	DTR/5V
4	GND
5	RX
6	TX
7	CTS
8	RTS/12V

RJ50 Serial

The Retail I/O Board provides one full RS-232 serial port through an RJ50 connector. The port has a shunt to select between +12V (default), +5V, or normal RI functionality. Maximum power capability is 1A from this port. The power output from this port is protected by a self-healing fuse.

Pin	Signal Name
1	NC
2	DCD
3	DSR
4	RXD
5	RTS
6	TXD
7	CTS
8	DTR
9	GND
10	RI

Installing the Terminal

The terminal can be mounted using the following mounts:

- Base for Retail I/O with Remote Power Supply (F033)
- Base for Hospitality I/O with Remote Power Supply (F035)

This chapter explains how to perform an "Out-of-box" installation of a CX7 configured with the Base and how to connect optional peripheral devices.

The CX7 comes fully assembled and ready to use. All that is required to install is connect the AC Power Cord, LAN Cable, and peripheral device cables.

For more information about the CX7 I/O ports, refer to:

- [Retail I/O](#) on page 16
- [Hospitality I/O](#) on page 17

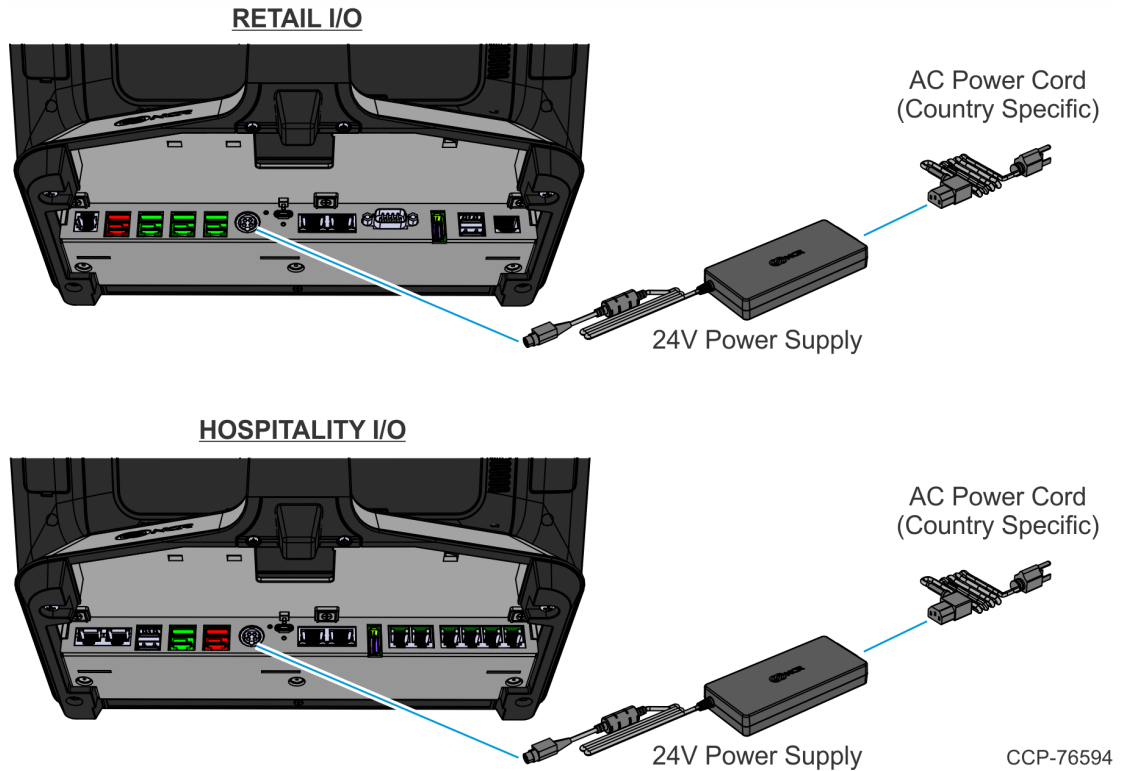
Connecting AC Power

The CX7 receives power from an external 24V power brick.



Caution: The CX7 requires the NCR 24V 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 Power In connector on the Base.
2. Connect the AC Power Cord to the Power Supply and to an AC outlet.



Caution: Do not connect or disconnect the Power Cable from the terminal with the AC Power Cord connected to an AC outlet.

Connecting to a Network

Most business configurations require the terminal to connect to a network. Connecting to a network enables communicating with other systems and devices also on the network. Depending on business configurations, connecting to a network may allow connection to the Internet.

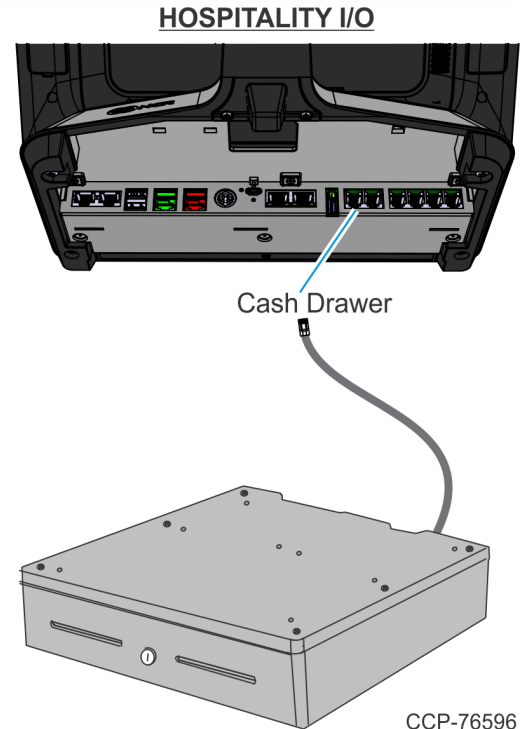
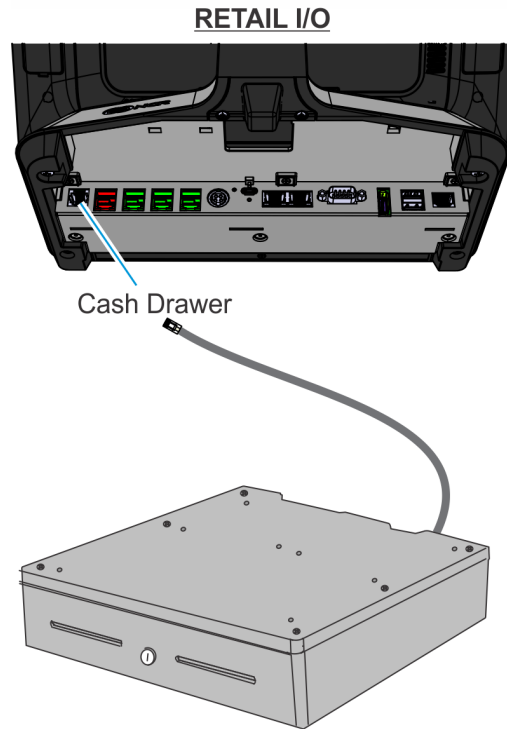
To connect the CX7 terminal to a network, connect the 10/100/1000 Ethernet cable to the port labeled LAN In on the I/O panel of the Base. The other end of the 10/100/1000 Ethernet cable should be connected into the network hub.



Note: Consult with your business Information Technology (IT) representative to determine the available connection, and to locate the network hub.

Installing the Cash Drawer

The Cash Drawer can be connected to the Cash Drawer connector on the Base.



Installing the Second Cash Drawer

A second Cash Drawer can be installed on terminals with a:

- Retail I/O Base — For more information, refer to [Second Cash Drawer for Retail I/O](#) below.
- Hospitality I/O Base — For more information, refer to [Second Cash Drawer for Hospitality I/O](#) on the next page.

Second Cash Drawer for Retail I/O

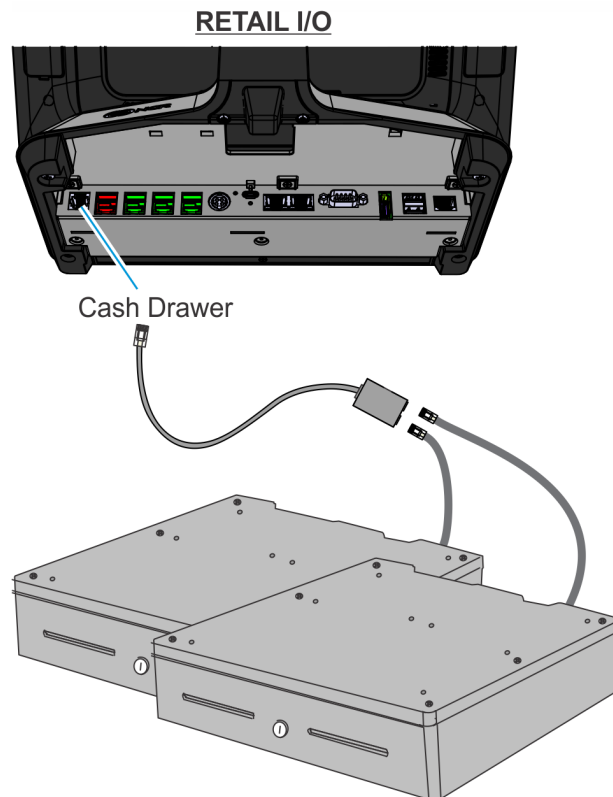
The Retail I/O supports a 2-drawer configuration with a Dual Cash Drawer Cable. Connect this cable to the Base or transaction printer cash drawer connector.

There are two versions of the Dual Cash Drawer Cable for the Retail I/O:

- 1432-C516-0009 (24V)
- 1432-C517-0009 (12V)



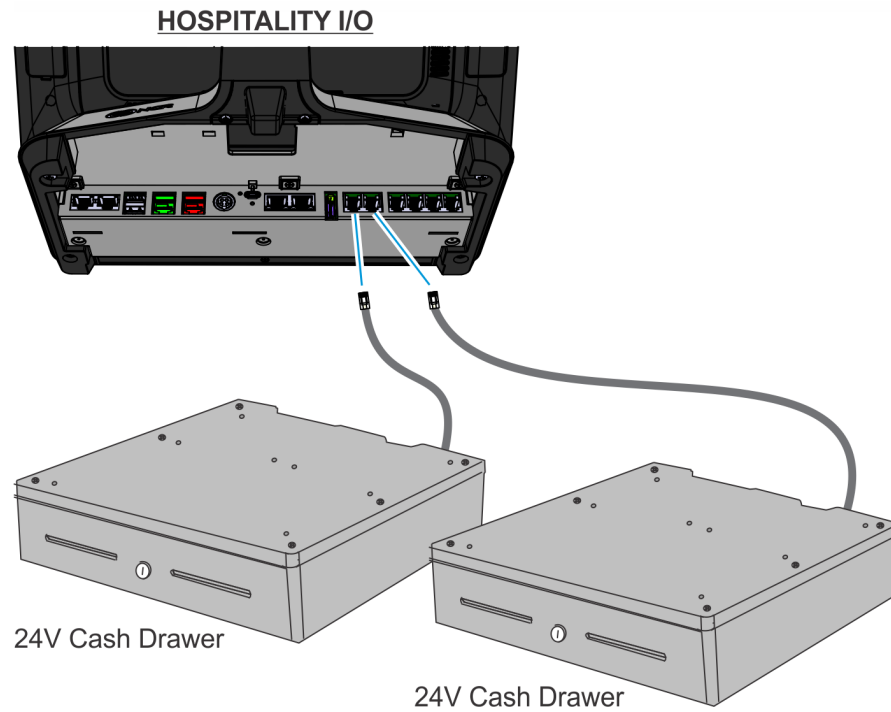
Caution: The two cables look very similar. Make sure to use the correct one. Connecting the wrong cable can cause system damage.



Second Cash Drawer for Hospitality I/O

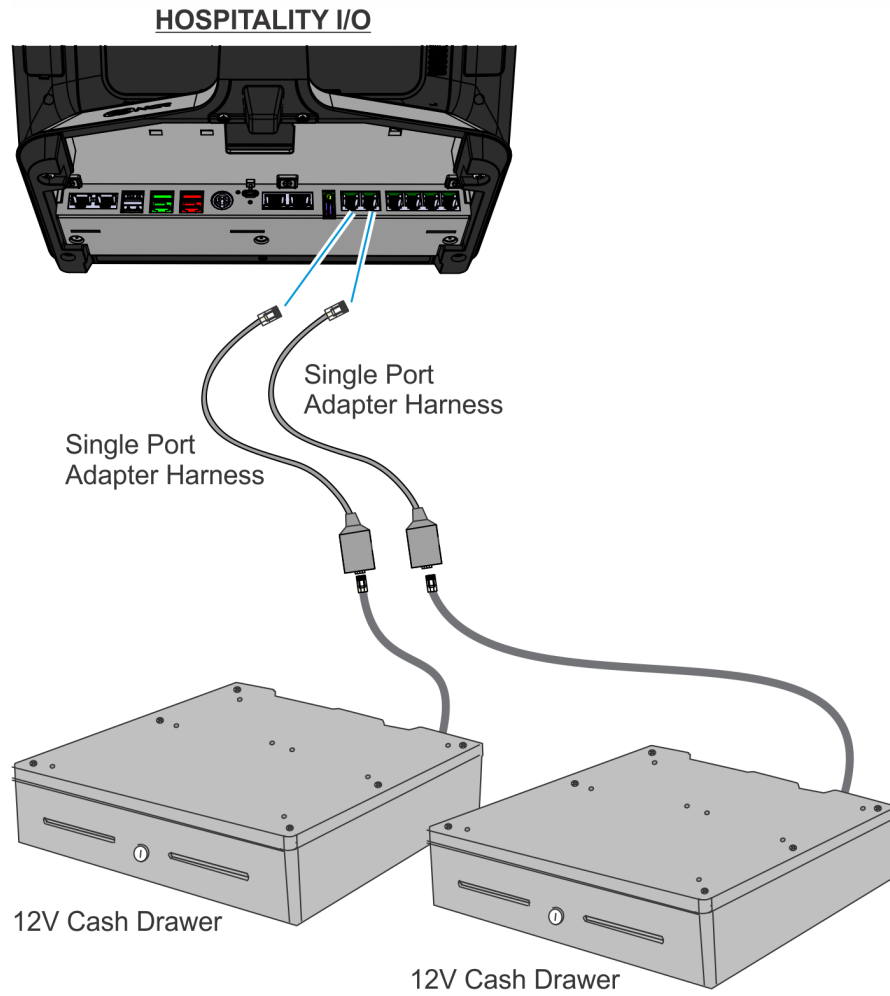
24V Cash Drawers

24V Cash Drawers can be connected to the Cash Drawer connectors on the Hospitality I/O.



12V Cash Drawers

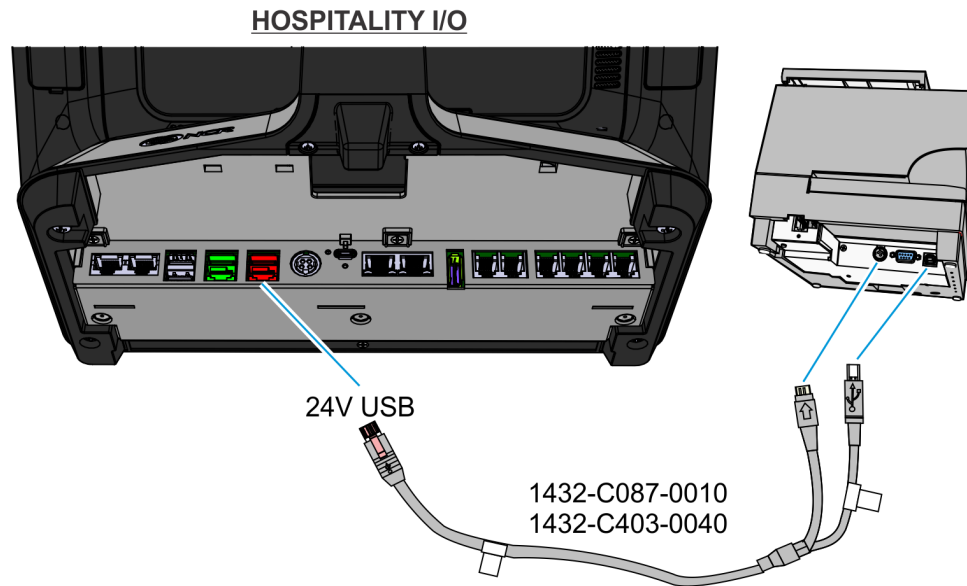
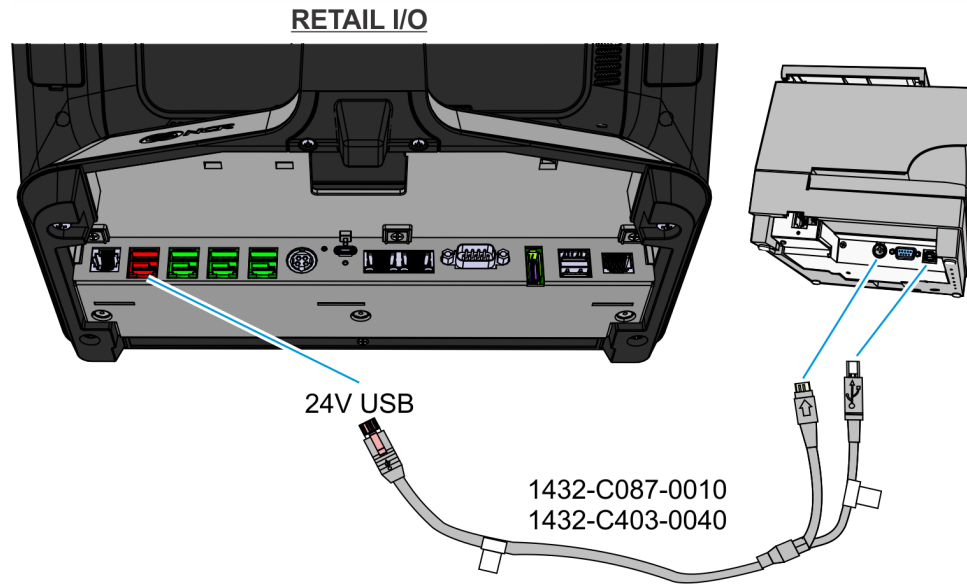
Single port adapter cables (1432-C828-0010) are required to connect 12V Cash Drawers to the Hospitality I/O.



Installing the Transaction Printer

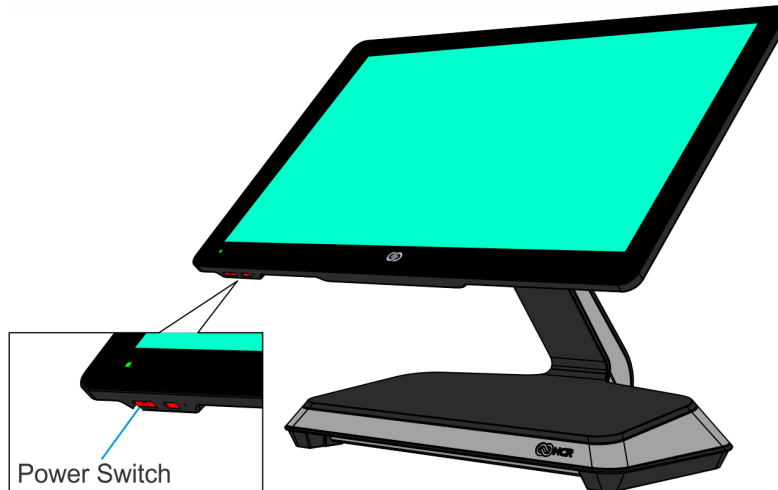
Warning: Do not hot plug the printer when connecting the POS terminal. Always power down the POS prior to connecting the printer to prevent damage to the POS and/or printer.

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



Powering Up the Terminal

1. After installing the terminal, power up the system by pressing the Power Switch, which is located on the bottom of the display.



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The system installs the system devices, system settings, and then reboots to continue setup. Complete the System Setup. This varies from OS to OS but the following is typical.

2. The initial setup procedures are performed:
 - Starting Windows
 - Preparing the computer for first time
 - Checking video performance
3. Accept the **License Terms Agreement**.



Note: Depending on the installed operating system and the selected settings, the amount of time it takes to boot up may vary.

Chapter 3: Operation and Cleaning

Touchscreens

The NCR CX7 All-in-One POS (7772) has a Projected Capacitive (PCap) Touchscreen.

Projected Capacitive Touchscreen

PCap touchscreens have all the benefits of normal capacitive touchscreens and more.

- Fast processing of touch information
- High sensitivity (use conductive pencils, with hands, and with thin gloves)
- Multi-touch capability (10-finger)
- High resolution
- Improved legibility and display brightness due to optimal light transmission

In addition, the technology of PCap touchscreens is characterized by significantly higher robustness and stability than common capacitive touchscreens because the active touch surface is located on the back side of the touchscreen. instead of the front side. Therefore, the active surface is not directly touched and does not wear off by normal use.

Since most surface contamination do not cause interference to the touchscreen the NCR CX7 All-in-One POS (7772) can be used in public or severe environmental conditions.

Using the PCap Touchscreen

The PCap touchscreen responds to the lightest touches. Touching with a single finger resembles the left mouse button. Two fingers are used to zoom IN (fingers brought together) or zoom OUT (fingers pulled apart). Circular motion can be used to rotate an element on the screen. This function must be supported by either the Operating System or the application.

Cleaning the Touchscreen

1. Using a soft cloth dampened with isopropyl alcohol or a mild non-abrasive soap & water solution, gently wipe the touchscreen 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 touchscreen.

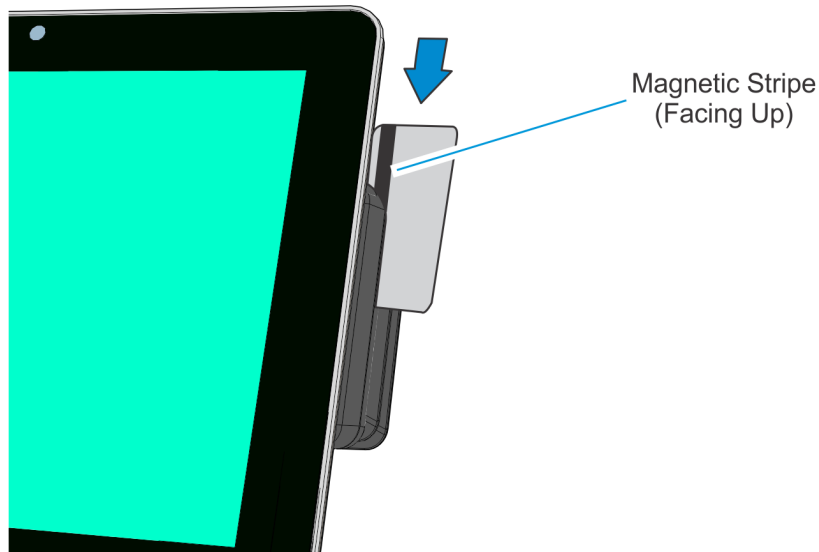
Magnetic Stripe Reader

The Magnetic Stripe Reader (MSR) for the CX7 is an ISO 3-Track (Encrypted).

The card reading is bi-directional and can be mounted on Port A (right side) of the display.

Using the MSR

Swipe the card through the slot in the MSR in a quick and steady movement. The magnetic stripe must be facing up and with the stripe in the slot.



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Care of Cards

- Cards should never come in contact with liquids.
- Cards should never be bent or folded in any way.
- Cards should never come in close proximity of a magnetic field.

Card Thickness

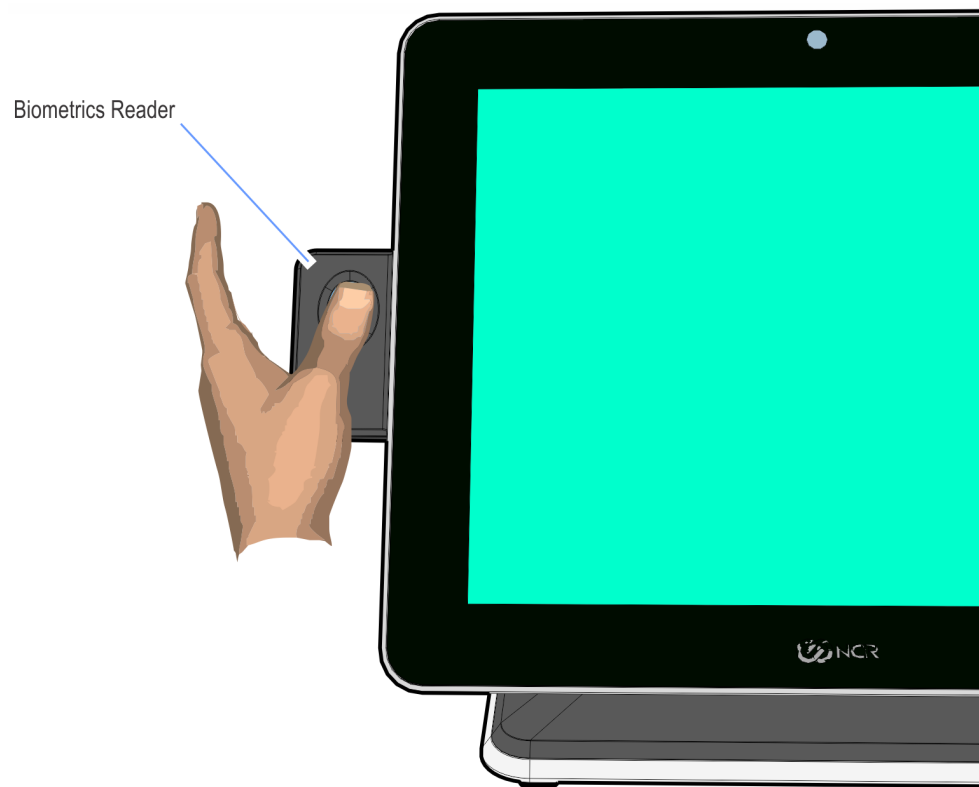
The MSR module accepts standard cards within the thickness range of 0.68–0.84 mm.

Biometrics Fingerprint Reader

High quality fingerprint templates are imperative for the security of the biometric security system. Low quality fingerprint templates can impact future read rates. Therefore, using the Biometrics Module should be done very carefully. In case of inexperienced users who are using the module for the first time, the process should be assisted (guided) by an administrator or experienced user.

Using the Biometrics Reader

Place your thumb/finger flat and straight on the sensor. If this is not possible, try to place your thumb/finger on the sensor in the same angle every time.



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Under normal usage conditions dirt, residue, oils, and other materials can collect on users' fingers. This can possibly cause poor collection of fingerprint data, which can cause performance degradation. For the best results it is recommended that the user keep their fingers relatively clean and free of residues that may alter the sensor performance.

Scotch tape can be used to clean fingers. Adhere the tape to the finger and then pull it off.

Cleaning the Sensor

Before each authentication, it is recommended that the user first clean the sensor. Place adhesive tape onto the sensor and then pull it off. This assures that residue from previous usage is removed.



Caution: Do not use abrasive materials to clean the sensor.

Software Drivers

The CX7 biometrics reader is a digitalPersona U.ARE.U 4500 Module. Please visit the Crossmatch website for drivers and application developer tools.

<https://www.crossmatch.com/company/support/request/>

Cleaning the Cabinet

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.



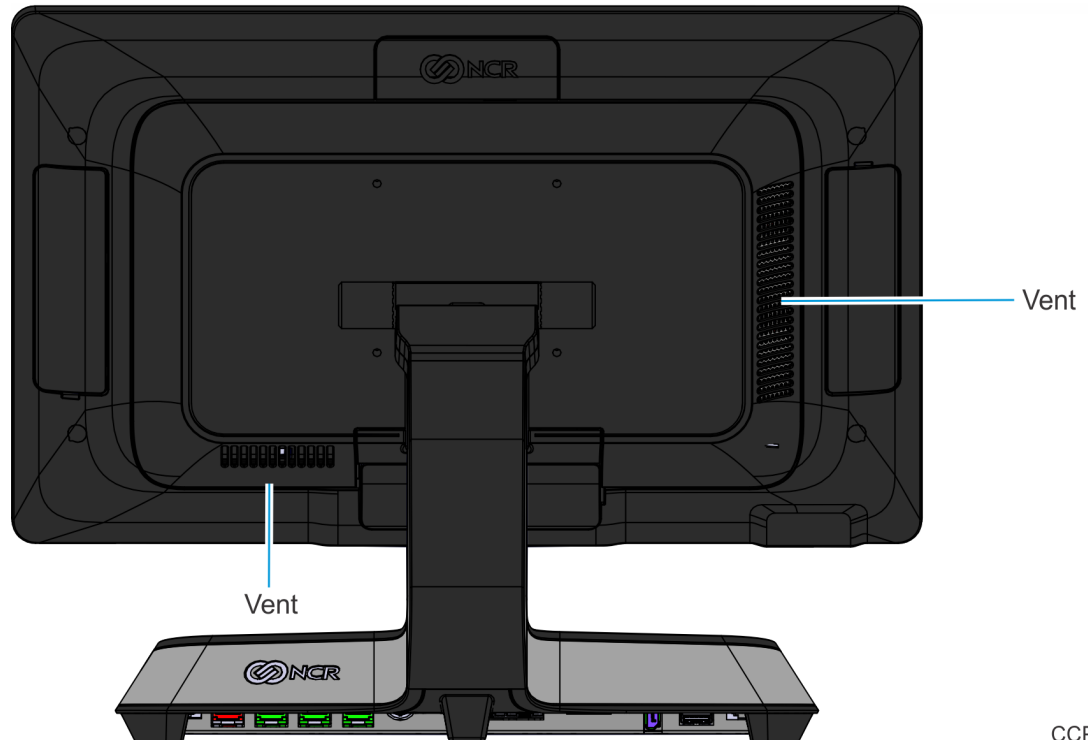
Warning: Do not use any other types of cleaners such as vinegar, solvents, degreasers, or ammonia-based cleaners. These can damage the unit.

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.

Cleaning the Cooling Vents

The air vents on the back of the terminal should be cleaned periodically to maintain optimum cooling for the CPU.

Use the hose attachment on a standard household vacuum cleaner to remove the dust from the vents.



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Chapter 4: Disk Image Backup and Recovery Tool

Introduction

This section discusses procedures on how to backup or recover the POS image. The terminal has a recovery tool that performs a complete backup of the whole HDD/SSD. This includes the operating system, all files, data and the database itself if it is installed on the HDD/SSD, making an exact duplicate of everything contained on the terminal. The Recovery Tool uses the Windows Image (.WIM) file format to store the OS image. This is a file-based format for use with the ImageX and DISM tools that Microsoft created for use with Windows Vista and later OS versions. The format can also be used to capture and restore XP-based OS images. More information on the ImageX tool and .WIM format can be found at:

[http://technet.microsoft.com/en-us/library/cc722145\(W.S.10\).aspx](http://technet.microsoft.com/en-us/library/cc722145(W.S.10).aspx)

The *Recovery Tool* is designed to create a complete backup of, or restore, a previously saved image to the terminal.

The Recovery Tool offers the following functions and features:

- Multi-language support for the following languages: EN; DE; FR; IT; ES
- Check and Repair Disk
- Backup the System
- Restore the System to a previous state
- Password Protection
- Network support

You can save and restore your backup from different locations:

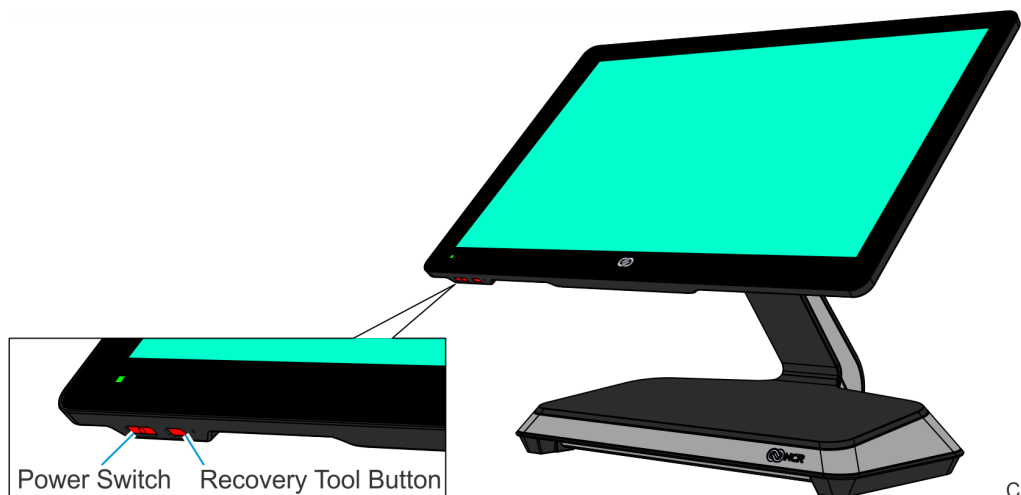
- Network
- USB Drive
- Hard Drive/Solid State Device (if present on the terminal)

Running the Recovery Tool

Starting the Recovery Tool

The Recovery Tool Button is located on the bottom of the display.

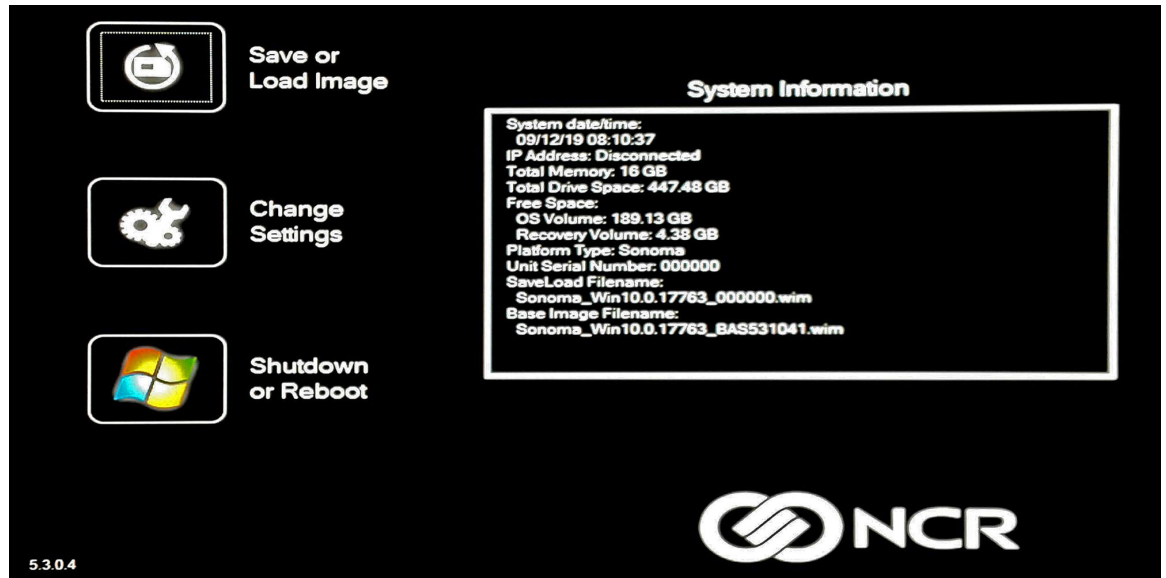
1. Begin with the terminal OFF.
2. Press and hold the recessed **Recovery Tool Button**. While holding the **Recovery Tool Button**, momentarily press the **Power Switch**.
3. Continue holding the **Recovery Tool Button** until the NCR logo has flashed on the screen.



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Main Screen

When the terminal boots the *Main Screen* is displayed.



Save or Load Image

This button opens the *Backup and Recovery* screen.

Change Settings

This button opens a dialog screen to let you set/change the password and to configure the network settings.

Shutdown or Reboot

This button opens the screen to properly *Shutdown* and *Reboot* the POS.

System Information

This is where useful information of the POS is displayed, such as Serial Number and Image Names.

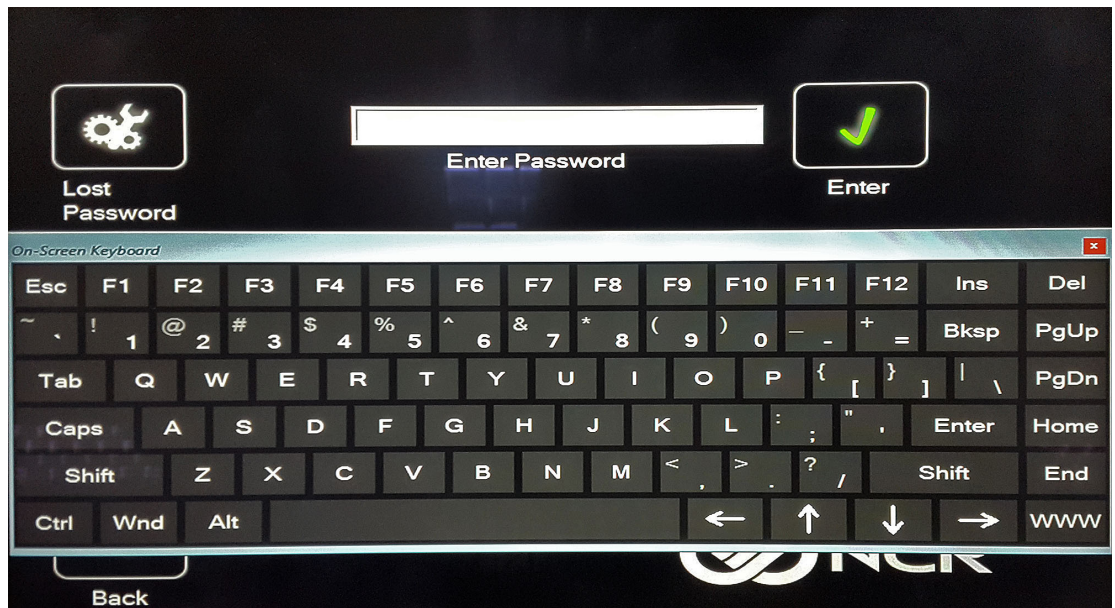
Save or Load Image

This function is used to either *Save* or *Load* an image from a device.

1. On the *Main Screen*, select **Save or Load Image**.

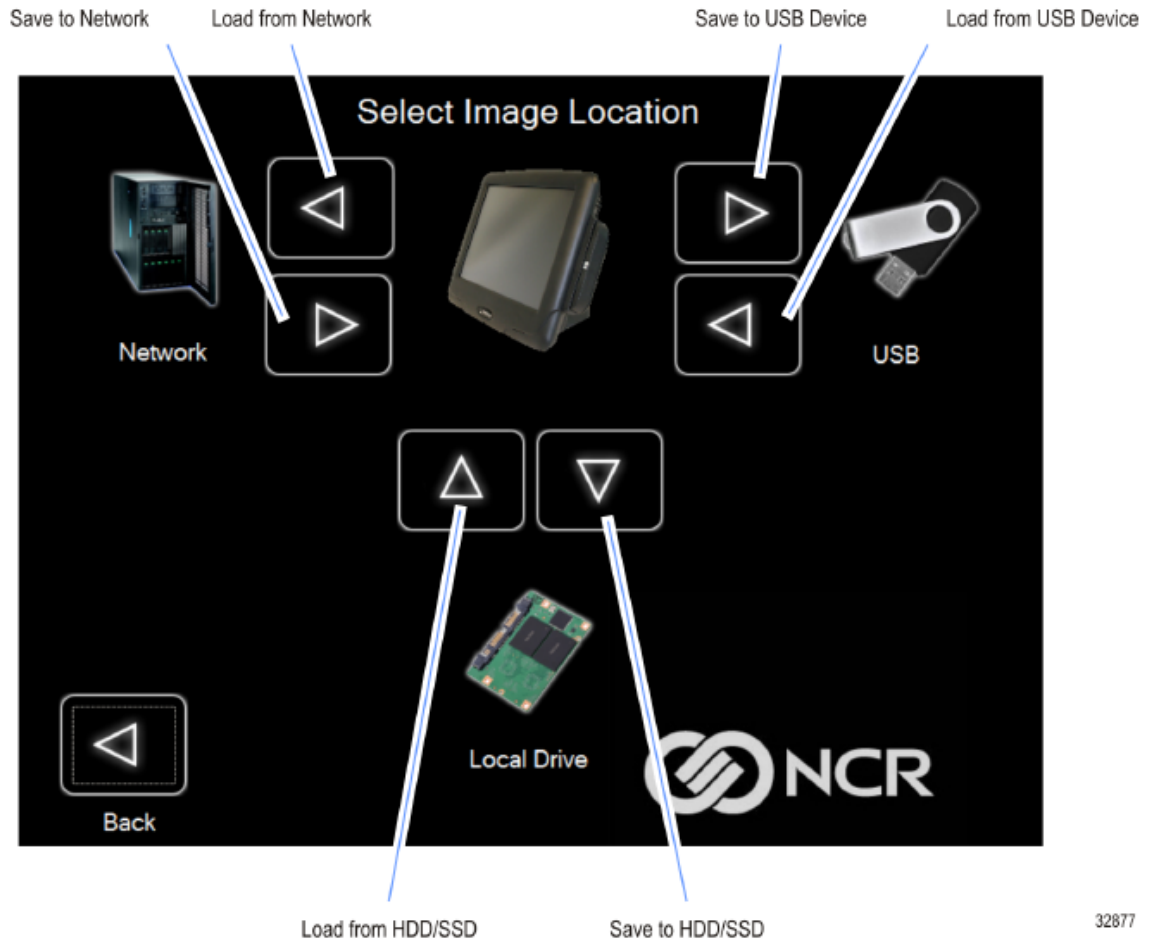


2. Enter the **Password**. The factory default password is **Recovery1234**.



Saving an Image

The *Select Image Location* screen displays a terminal with three sets of *In/Out* arrow buttons, indicating the direction of data flow when selected. Arrows pointing away from the terminal are used to *Save* images to a device. Arrows pointing towards the terminal are used to *Load* an image.



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Recovery Partition Size

The size of the Recovery Partition is limited to 8GB on the local drive. The USB and network options can be used to store / backup larger images. The total size is comprised of the base factory image + the user and site backups and the roughly 300MB of space used by WinPE and apps. USB/Network backups are limited only by the hardware that they are being stored to.

After the factory image is copied into the Recovery Partition, there is approximately 3GB remaining in the 8GB partition. Any data stored as an incremental backup to this location is compressed. A typical, large POS software installation will not outpace the constraints of the local storage.

Backups to separate *slots* in the Recovery Tool only increase the total storage required by the amount of data *added* to the image. When the contents of the OS partition become too large to store in the 8GB local Recovery Partition, then one of the alternate storage methods available (USB or network) should be used to store backups.

Output Options

There are three output options:

- Hard Disk Drive/Solid State Device
- USB Device
- Network



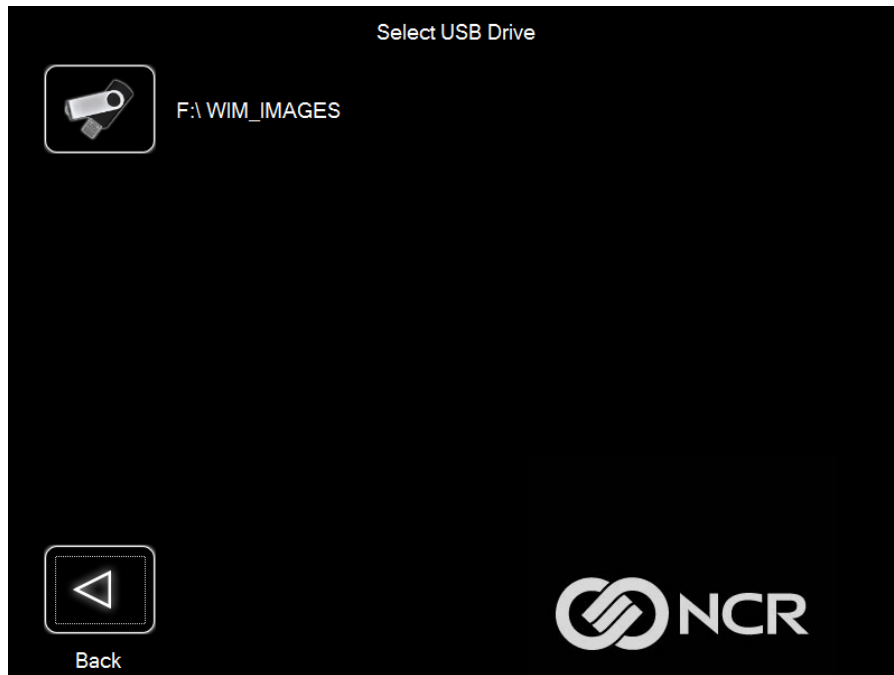
Note: Windows 7 images require a minimum of 4GB available on the Network, Local Drive, or USB drive. POSReady requires a minimum of 2GB. Make sure there is enough space available on the storage media. Image sizes vary depending on applications and database sizes.

1. Select the arrow that points to the desired output.

Example: Select the **USB Save Button**.



2. Select the **USB Button**.



If this is the first backup performed on this POS, the image is automatically saved as a *Site* backup.

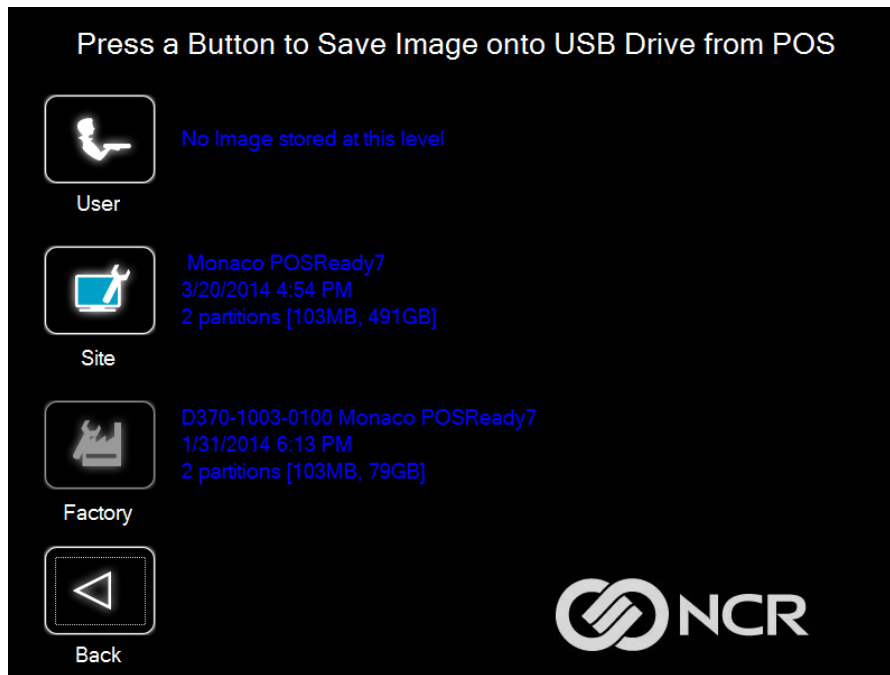


If a backup already exists, you have the choice of performing either a *Site* or *User* backup.

- **Site Image** – Use this option immediately after all application components have been loaded and set up for initial operation, or for base image updates.
- **User Image** – Use this option for routine day-to-day or periodical backups.



Note: *Site* and *User* backups are separate independent backups.



The image information is updated with the new image date.

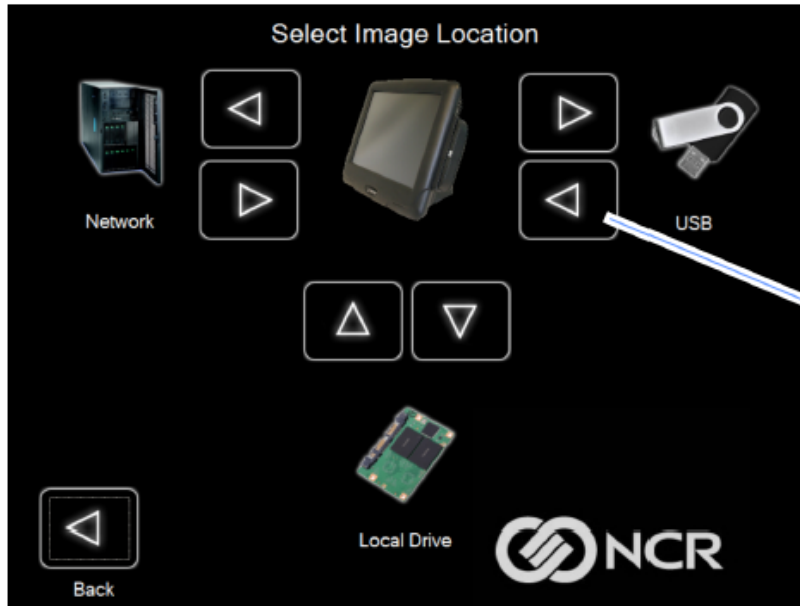
Loading An Image



Caution: Do NOT remove power during an Image Load. Complete the Operating System setup and then shut down Windows properly. Removing power prematurely will corrupt the image and display various messages like "Windows failed to load" or "missing or corrupt registry". If this happens you can do an Image load of the Factory image with the Recovery Tool.

1. Select the arrow that points from the desired load device to the terminal.

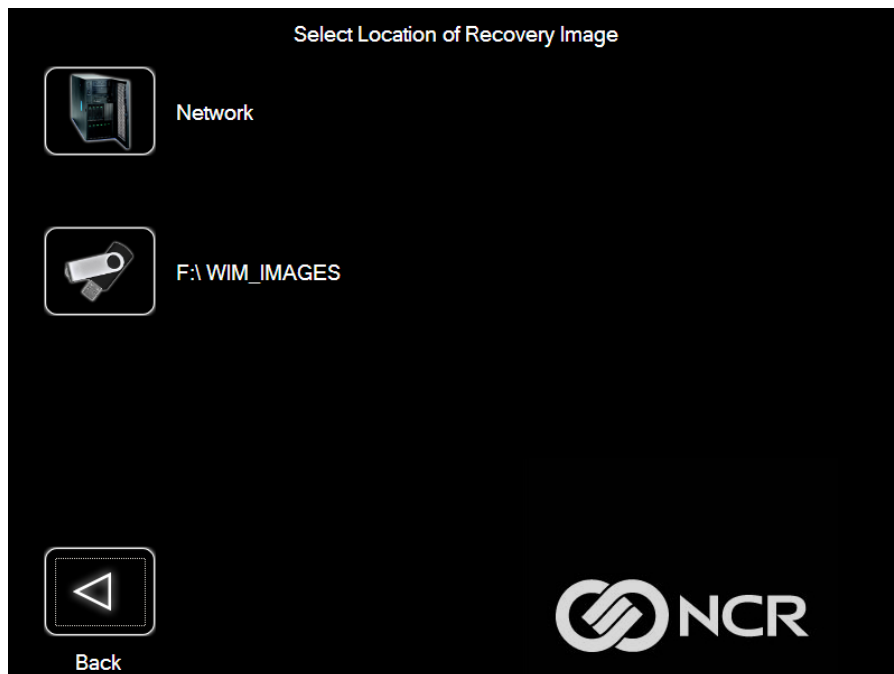
Example: Select the **USBLoad Button**.



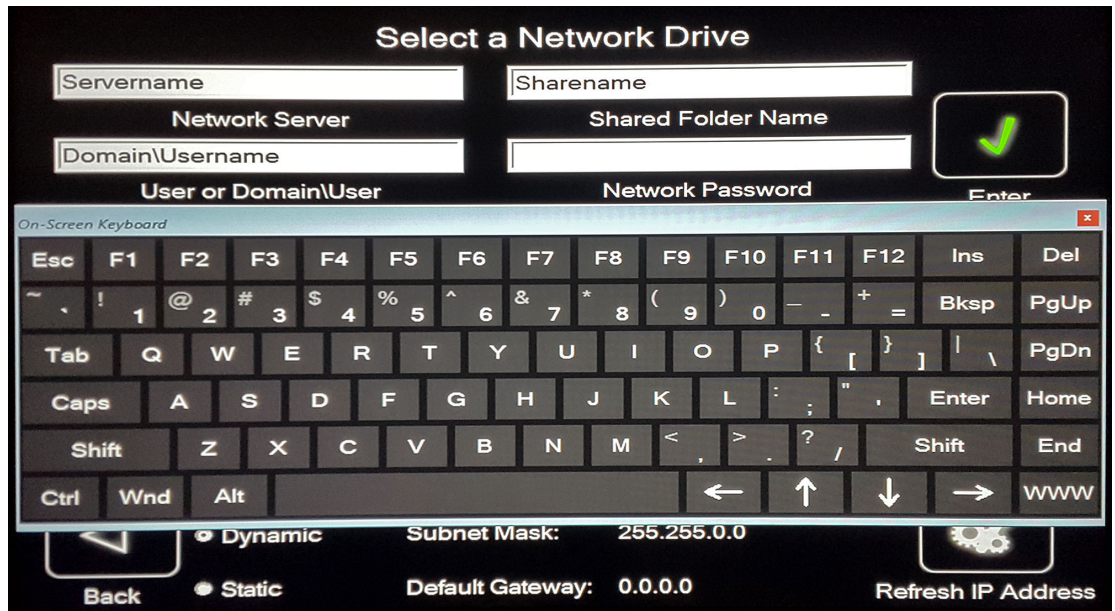
Load From a USB Device

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2. Select the **USB Button**.

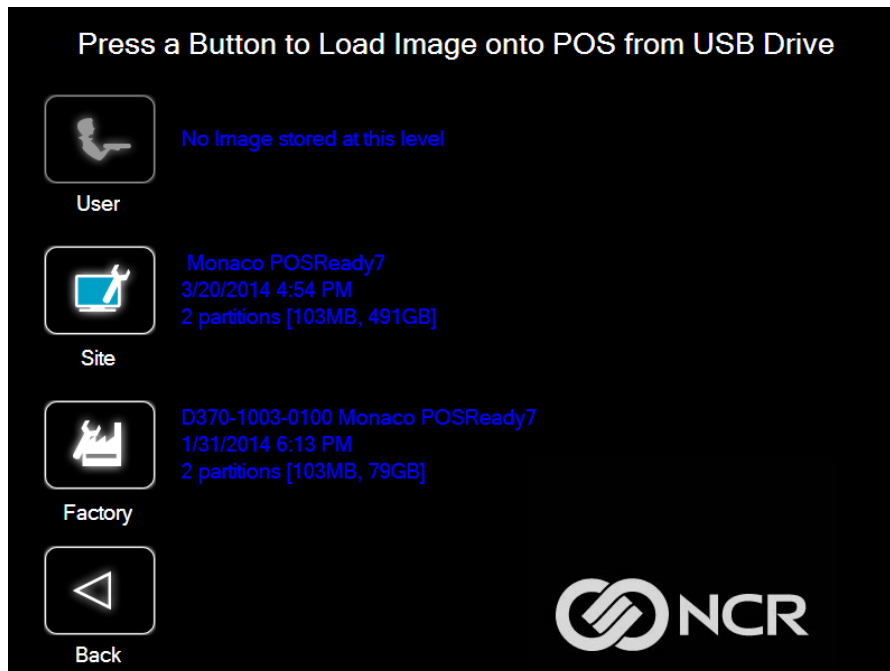


If you are loading from a network, the *Select a Network Drive* dialog screen will open.




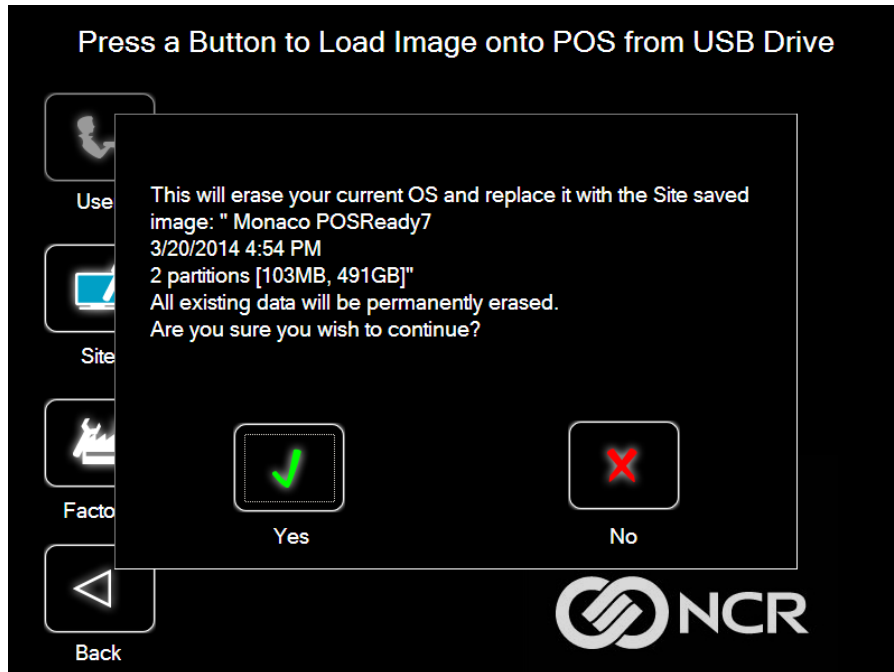
3. Select the *Image Type*.

- **User Image** – Most recent routine backup.
- **Site Image** – Image of the terminal after application components were loaded.
- **Factory Image** – The NCR Base Image as shipped from the factory.

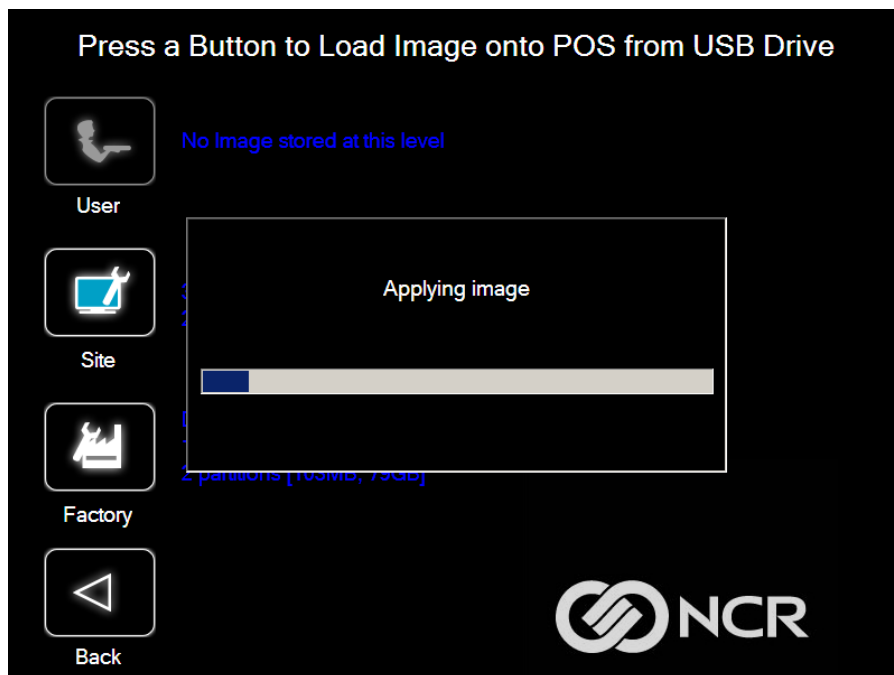


- 4. Select **Yes** to apply the image.

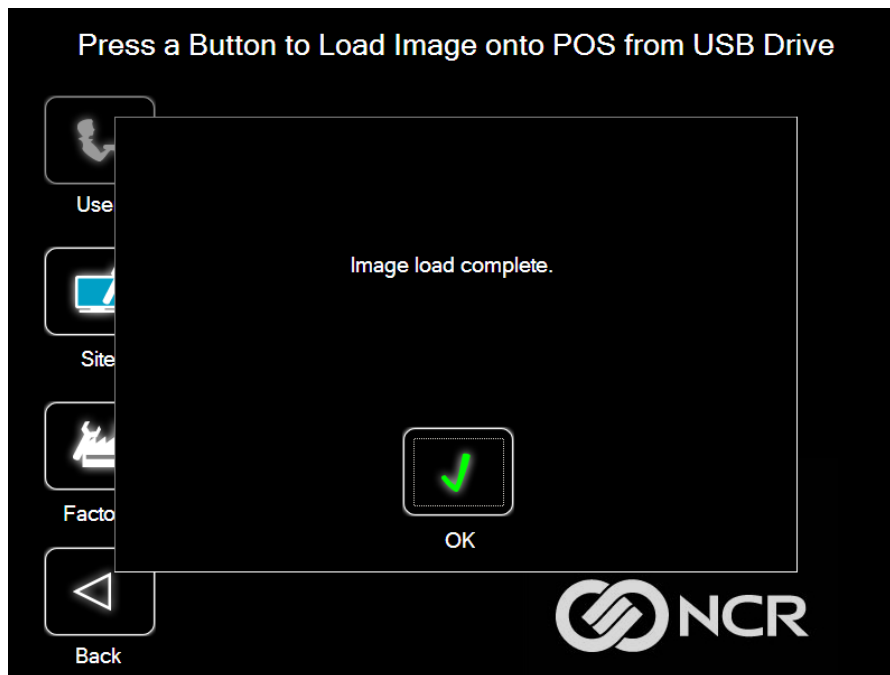
 **Caution:** All the information in the current productive/working image on the drive is lost with this operation!



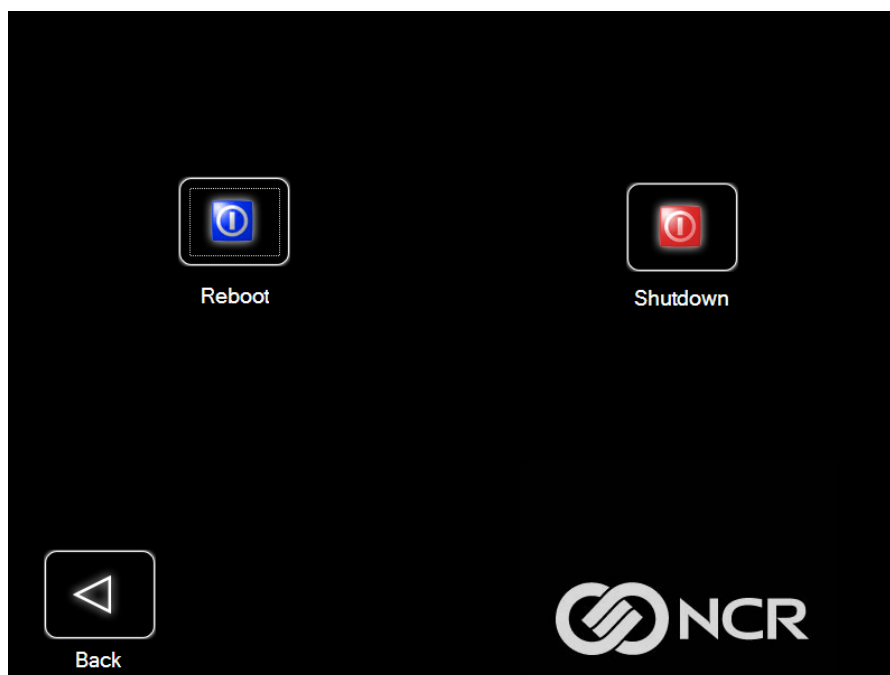
A progress bar is displayed as the image is applied.



A message is displayed when the load is complete.



5. **Reboot** the POS.



Change Settings

On the *Main Screen*, select **Change Settings**.

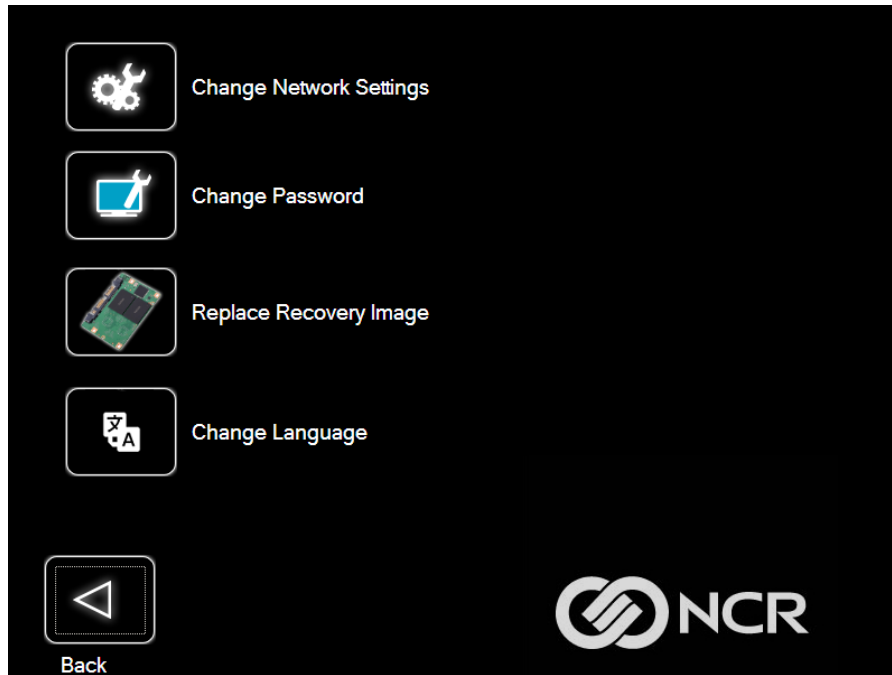


There are four functions available on the *Change Settings* screen:

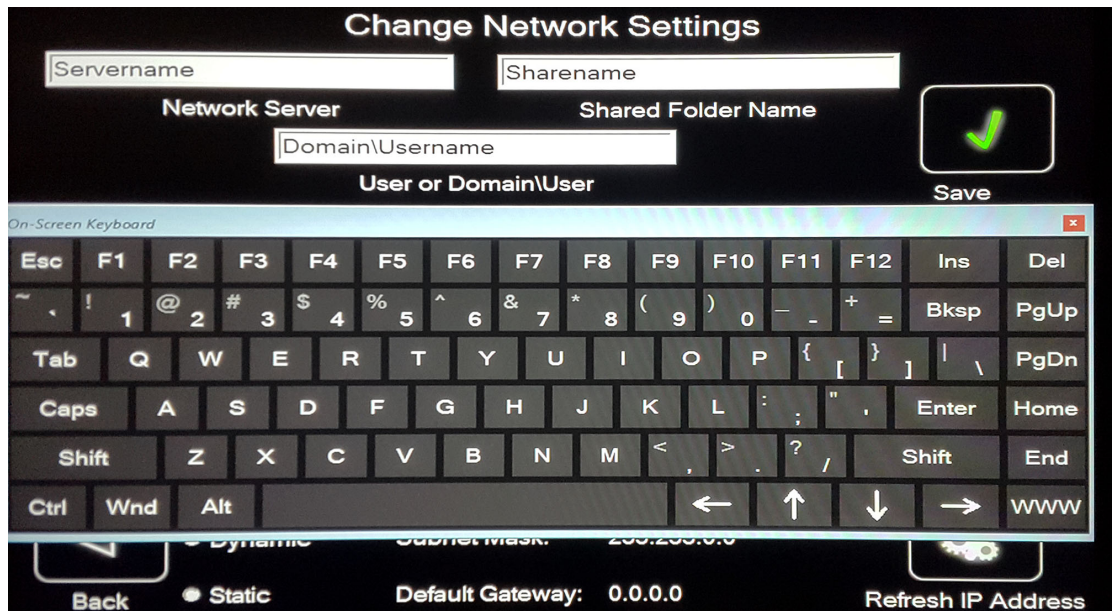
- Change Network Settings
- Change Password
- Replace Recovery Image
- Change Language

Change Network Settings

1. On the *Change Settings Screen*, select **Change Network Settings**.

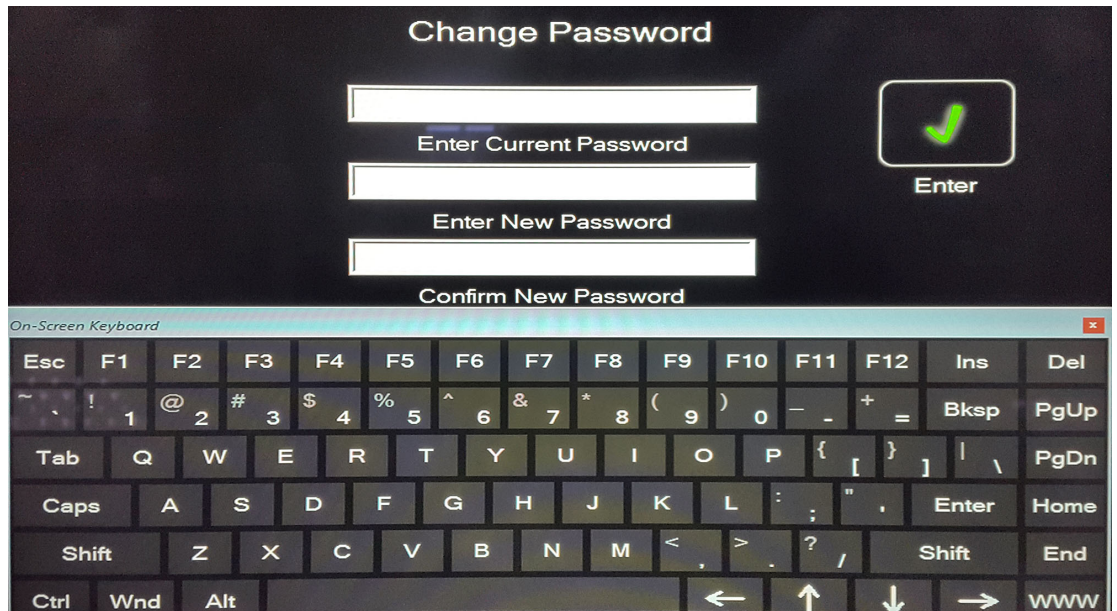


2. Enter the network configuration settings and then select **Save**.

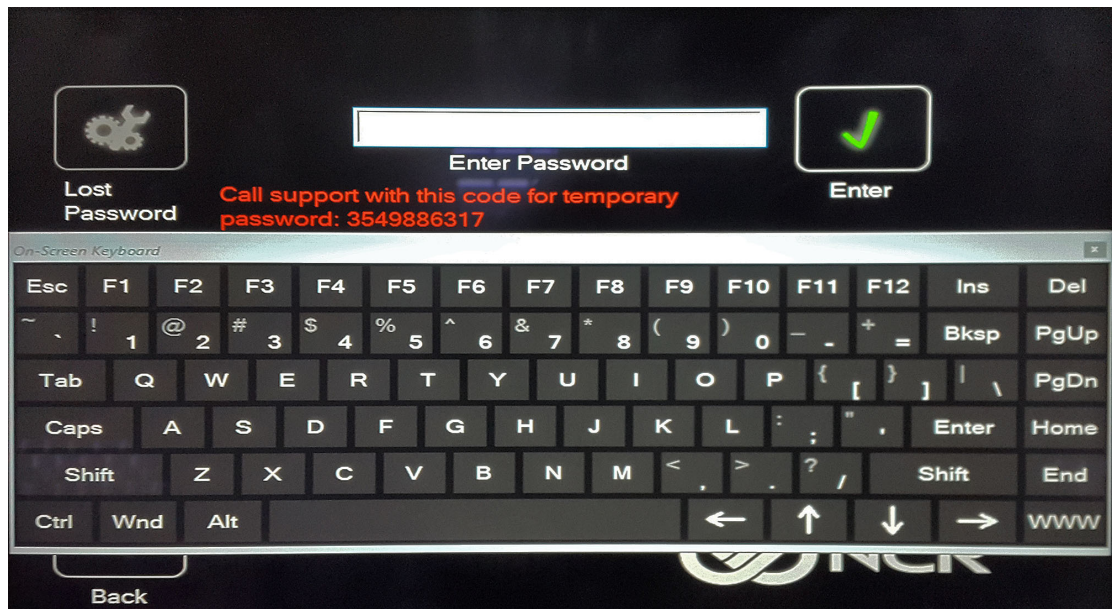


Change Password

1. On the *Change Settings Screen*, select **Change Password**.
2. Enter the current password and the new password, and then select **Enter**.



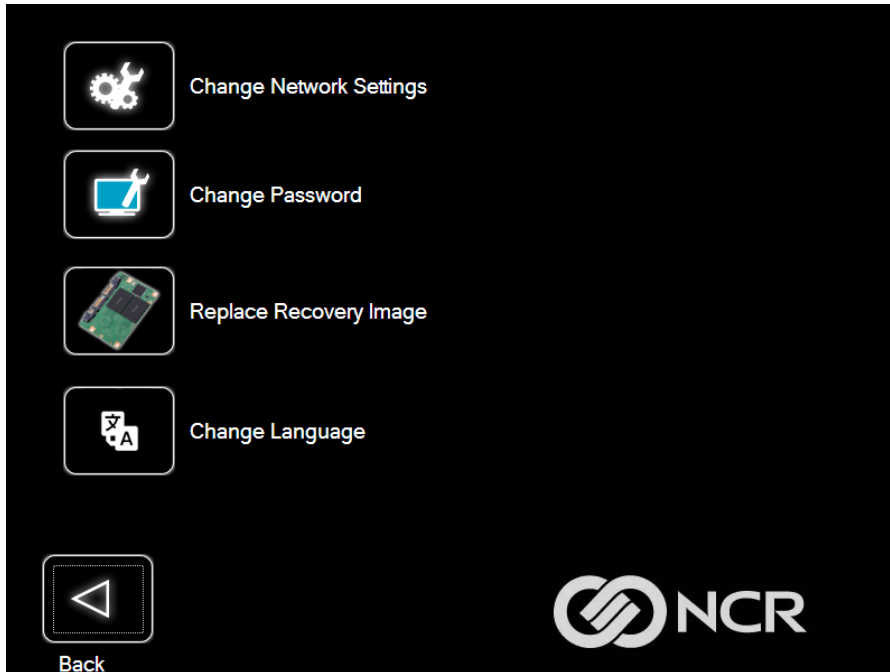
If you have forgotten or lost the password, select Lost Password. A unique code is generated that you can provide to NCR Support to receive a new temporary password.



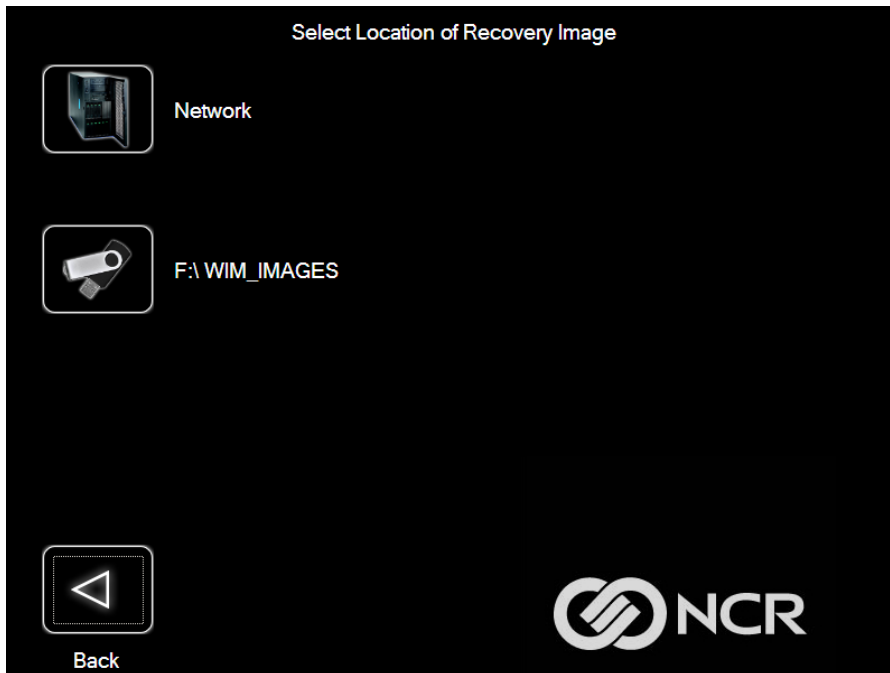
Replace Recovery Image

This feature is used to update the *Recovery Tool* and the environment that it runs in.

1. On the *Change Settings Screen*, select **Replace Recovery Image**.



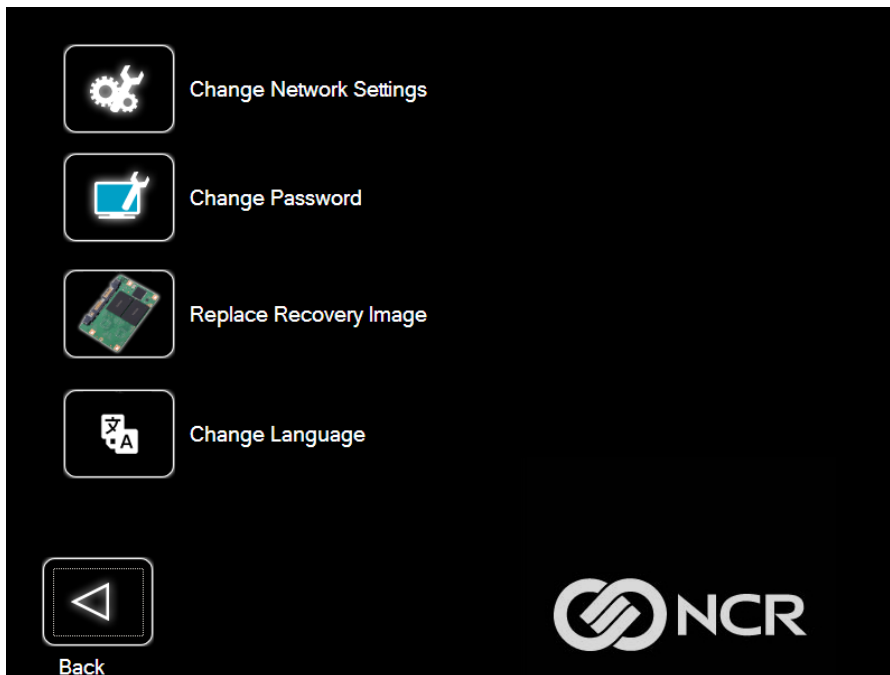
2. Select the source of the *Recovery Image*.



3. Complete the image replacement in the same manner as with the POS *Site/User* image restore procedures.

Change Language

1. On the *Change Settings Screen*, select **Change Language**.



2. Select the language of choice.



Creating a Disk Image

This terminal has a *Recovery Button* that permits end users to quickly restore a disk backup from a hidden partition on the NCR system storage. To utilize this valuable feature, the image must be created using NCR tools. Tools are available from NCR at:

http://www5.ncr.com/support/support_drivers_patches_radiant.asp?Class=Hospitality/GenDrivers_display

From this site, download the following:

- *ImagingSuite_5.3.0.3.zip* (or later) – The Imaging Suite package consists of three primary parts:
 - A Server application for local area network imaging
 - A Client application that runs on the target or source machine where images will be applied to or captured from
 - A customized version of Windows PE 3.1 boot OS environment from which the client application will be run
- *Imaging Suite User Guide* – This document provides a general overview of the Imaging Suite package, how to configure the system to run it, and how to use the applications to capture and apply system images.

Chapter 5: Configuring a Second SSD for RAID

Introduction

This chapter discusses how to add a second hard drive and configure a RAID system using the *Intel® Rapid Storage Technology*.

The *Intel® Rapid Storage Technology* provides new levels of protection, performance, and upgradeability for the CX7 platform. Whether using one or two hard drives you can take advantage of enhanced performance and lower power consumption. When using two drives you can have additional protection against data loss in the event of hard drive failure.

Valuable digital memories are protected against a hard drive failure when the system is configured for one of the fault-tolerant RAID levels: *RAID 1* or *RAID 5*. By seamlessly storing copies of data on one or more additional hard drives, any hard drive can fail without data loss or system downtime. When the failed drive is removed and a replacement hard drive is installed, data fault tolerance is easily restored.

Configuring a RAID System

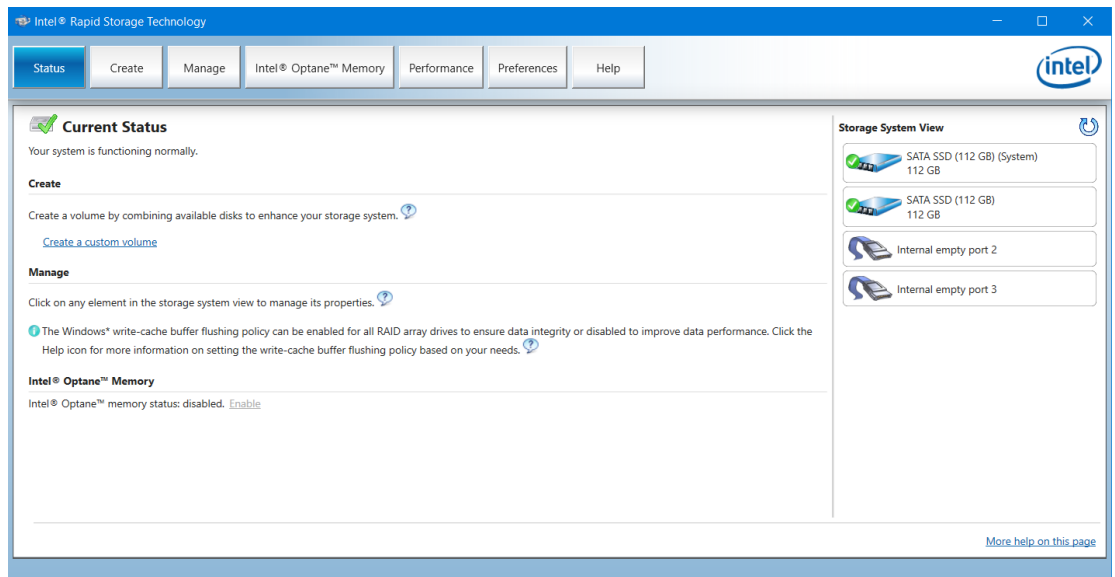
RAID Systems can be installed on the CX7 if the 7772-F242 RAID - Dual M.2 120GB SSD feature is present.

To install and configure a RAID system, perform the following steps:

1. Install the primary SSD.
2. Load the NCR Gold Drive.
3. Install the second SSD in the terminal.
4. Run the *Intel® Rapid Storage Technology Manager*.

Start → **All Programs** → **Intel** → **Intel® Rapid Storage Technology**

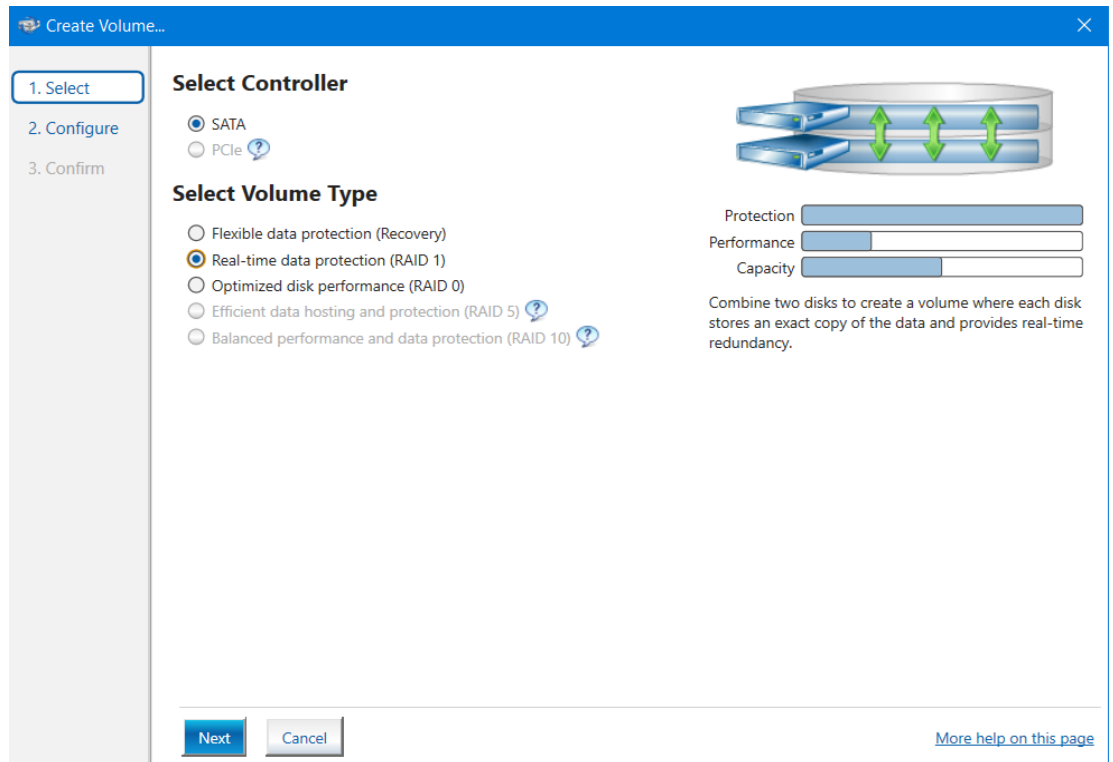
5. Both disks should be recognized in the *Main Screen*. Select the **Create** button.



6. Select the type of RAID volume you want to install. NCR supports *RAID 1* and *RAID 0* volume types.

RAID 1: Combines two disks to create a volume where each disk stores an exact copy of the data and provides real-time redundancy.

RAID 0: Combines two disks to create a volume where data is broken down into *strips* that are distributed across both disks.



7. Select **Next**.

8. Enter a **Volume Name** (user preference).
9. Select the check boxes for both disks.

RAID 0 Only: Specify the amount of space to be used by the new RAID volume. Use the slider to enter a percentage.



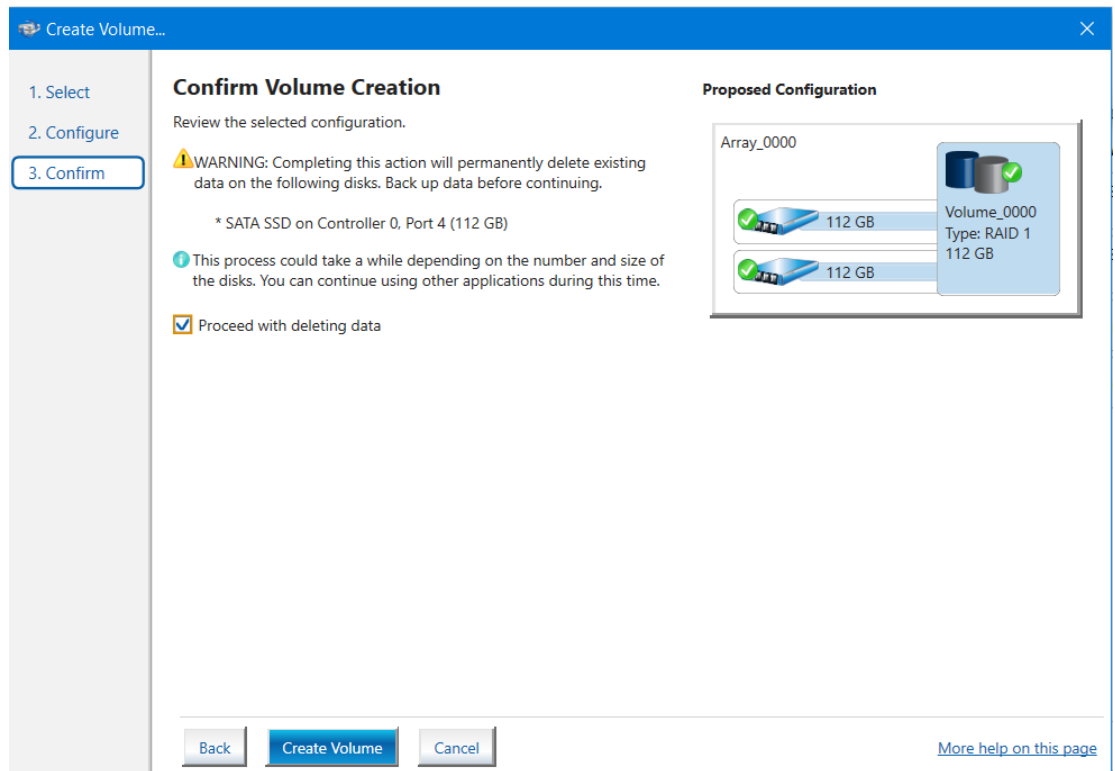
Note: If you create a volume that uses less than 100% of the hard drive space, you may create a second RAID volume to use the remaining space.

The screenshot shows the 'Create Volume...' wizard in the 'Configure Volume' step. The window title is 'Create Volume...'. On the left, there is a navigation pane with three steps: '1. Select', '2. Configure' (which is highlighted), and '3. Confirm'. The main area is titled 'Configure Volume' and contains the following elements:

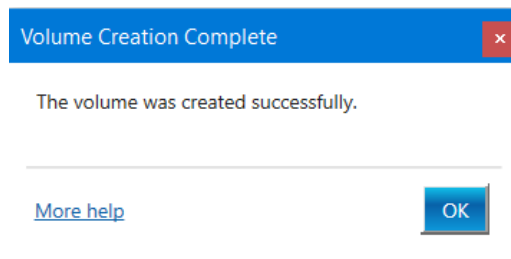
- A text box for 'Name:' containing 'Volume_0000'.
- A section titled 'Select the array disks (minimum selection required):' with two checked checkboxes: 'SATA SSD on Controller 0, Port 1 (112 GB) (System)' and 'SATA SSD on Controller 0, Port 4 (112 GB)'.
- A section titled 'Do you want to keep data from one of the selected disks?' with three radio button options: 'No', 'Yes: SATA SSD on Controller 0, Port 1' (which is selected), and 'Yes: SATA SSD on Controller 0, Port 4'.
- A section titled 'Volume Size' with a sub-tab 'Advanced'. It shows 'Volume Size 114,473 MB' and an 'Array allocation:' slider set to 100%.
- A 'Proposed Configuration' panel on the right showing 'Array_0000' with two 112 GB disks and a 'Volume_0000' box with 'Type: RAID 1' and '112 GB'.
- At the bottom, there are 'Back', 'Next', and 'Cancel' buttons. The 'Next' button is highlighted in blue.
- A link for 'More help on this page' is located at the bottom right.

10. Select **Next**.

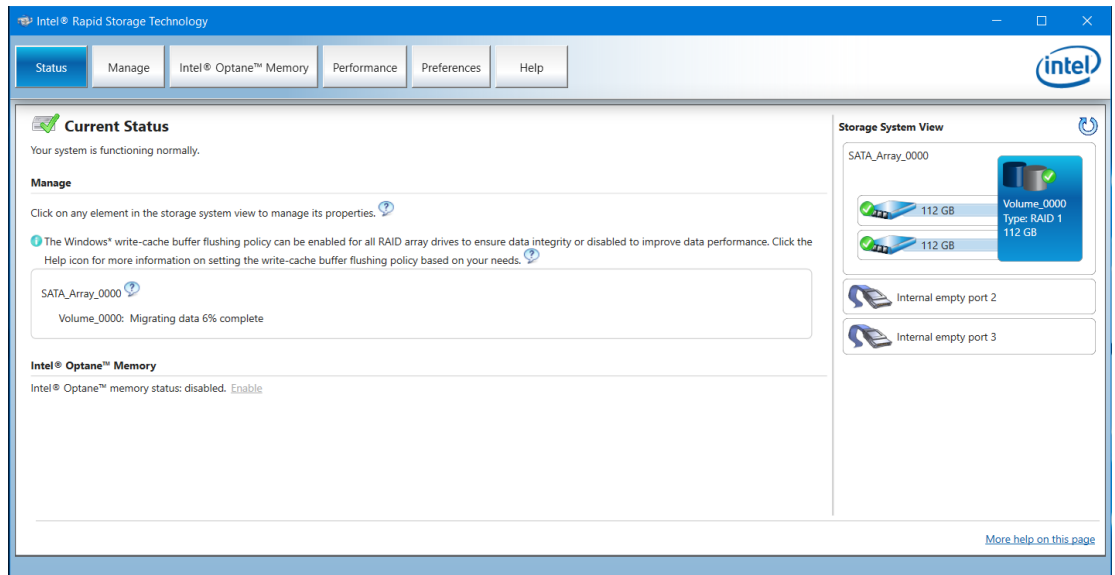
11. Select **Create Volume** to start the volume migration.



12. A window is displayed indicating the volume was created successfully. Select **OK** to close the window.



The status of the migration is displayed, showing the progress. This can take 1 - 3 hours to complete.



Chapter 6: 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 CX7 terminal supports the Global system power states defined by ACPI.

Computer States

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.

Go 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 CX7 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 CX7 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 USB 3.0 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	S0 Working	S0 Idle, Backlight Off, SSD Idle	S3 Suspend to RAM	S4 Hibernate	S5 Soft Off	S0 Idle, Backlight on
Supported: Y/N	Y	Y	Y	Y	Y	Y
Description	Fully Functional**	Video Backlight Off, SSD Idle	Video Backlight Off, SSD Idle, Cache Flush, Memory in Slow Refresh, CPU Halted	Video Backlight Off, SSD Off, Cache Flush, Memory data to SSD, CPU Halted	OFF Some devices remain powered by standby voltage (LAN, ME-AMT, USB) to allow wake-up	Video backlight on
Power Supply Status	On	On	Powered Down*	Powered Down*	Powered Down*	On
Power Consumption						
Celeron G4900T	42.3W	16.4W	2.9W	2.5W	2.5W	25.6W
Core i3-8100T	62.2W	17.4W	3.25W	3.0W	3.0W	24.9W
Core i5-8500T	63.9W	17.4W	3.25W	3.0W	3.0W	24.9W
Wake Options						

Power Switch	N/A	Y	Y	Y	Y	Y
Touch	N/A	Y	Y	N	N	Y
USB Keyboard	N/A	Y	Y	N	N	Y
USB Mouse	N/A	Y	Y	N	N	Y
LAN (magic packet)	N/A	Y	Y	Y	Y	Y
RTC Alarm	N/A	Y	Y	Y	Y	Y
Serial Port (RI)	N/A	Y	N	N	N	Y

Note: Power consumption based on the following configuration: 16GB RAM x2, 240 GB SSD x2

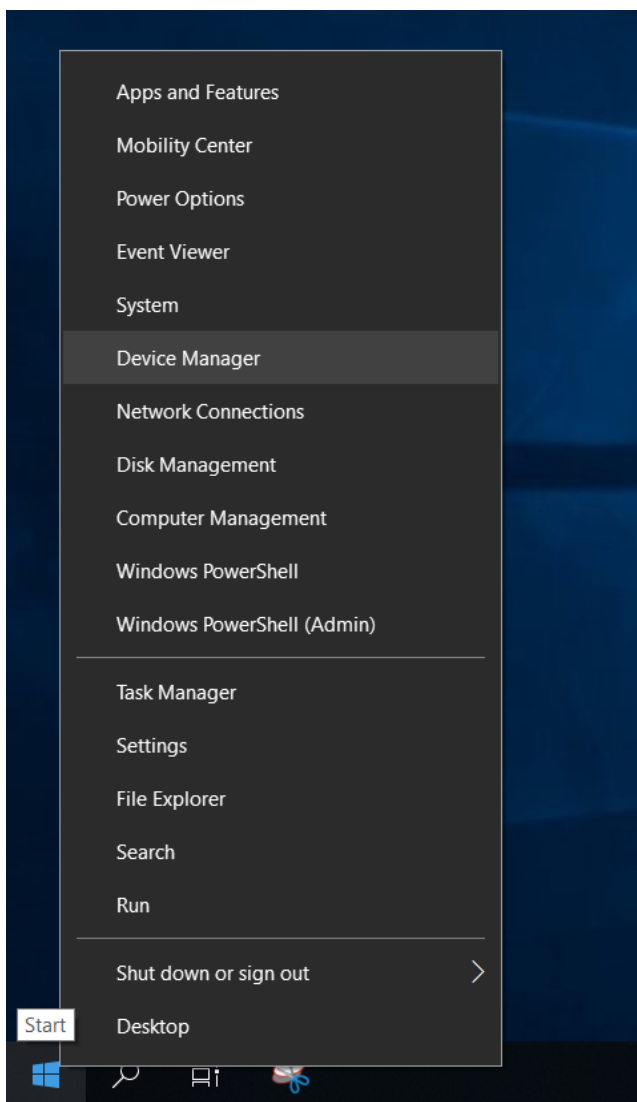
*Maintains small voltage to support wake circuits.

**Passmark Burn in test. This represents a maximum use case. Actual customer usage will differ.

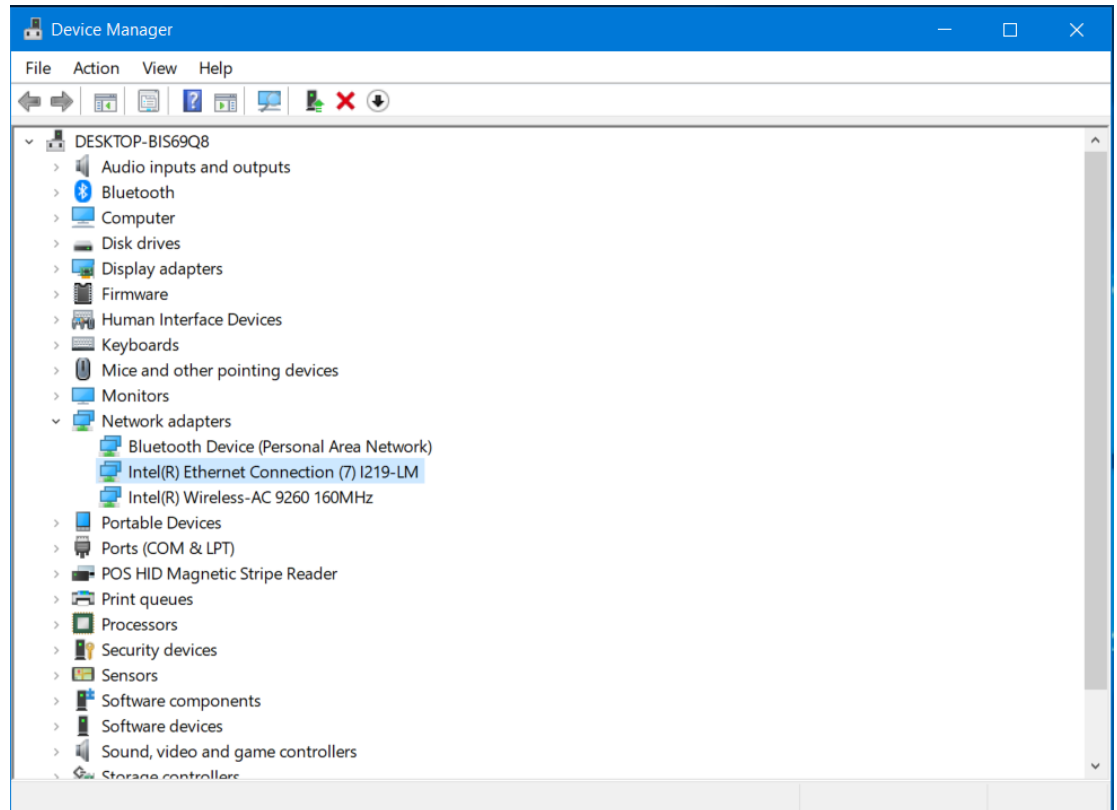
Enabling Wake on LAN

In order for Wake on LAN to function, the Network driver must be enabled (factory default).

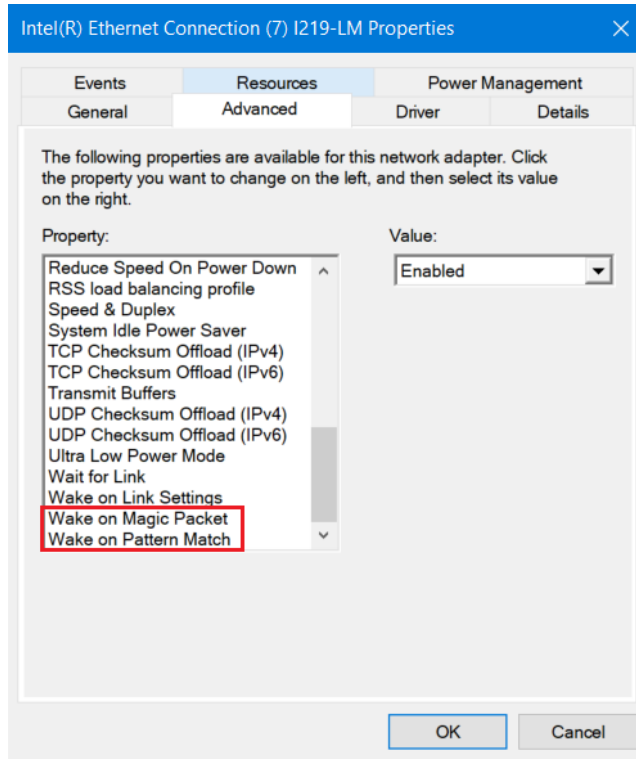
1. Right-click on **Start**, then select **Device Manager**.



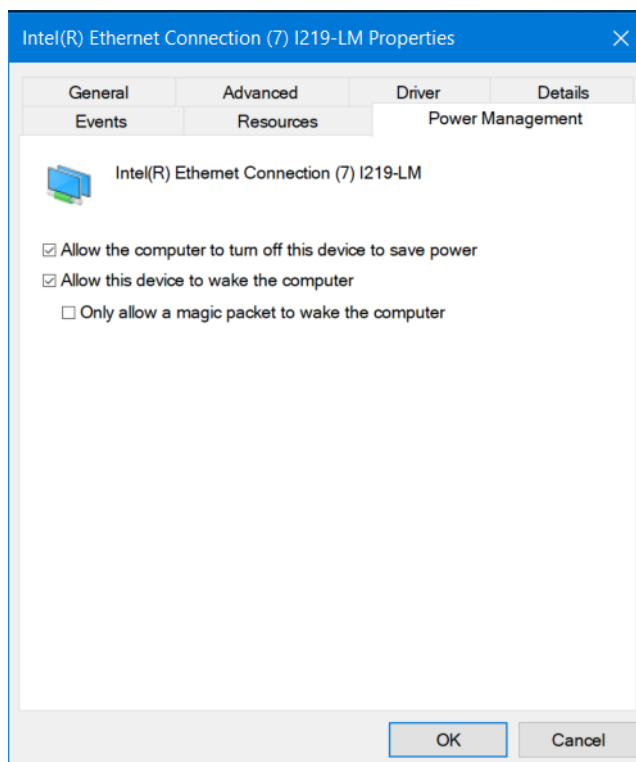
2. Select **Network adapters**.
3. Right-click **Intel(R) Ethernet Connection I219-LM >> Properties**.



- Under the *Advanced* tab, *Wake on Magic Packet* and *Wake on Pattern Match* should be enabled. Select **OK** after making any changes.



- Under the *Power Management* tab, *Allow this device to wake the computer* option box should be checked. Select **OK** after making any changes.



Chapter 7: 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]** or **[F2]**.

Selecting 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 *Save and Exit Menu*, select **Save Changes & Reset**, and press **[Enter]**.

Restoring Factory Settings

To reset all values to their default settings, press **[F3]** and then **[Enter]** when the confirmation message is displayed. The terminal automatically loads the BIOS default values. To save the factory default values, go to the *Save and Exit Menu*, **select Save Changes & Reset**, and select **[Enter]**.

BIOS Default Settings

NCR BIOS Version: R110-01

Advanced Menu

▶ ACPI Settings	
ACPI Sleep State	[S3 (Suspend to RAM)]
State After G3	[Last State]
▶ NCR POS	
Port B Display Mode	[DP]
F8 BBS Boot Menu	[Enabled]
Bluetooth Controller	[Enabled]
WiFi Controller	[Enabled]
ONESHOT Control	[Disabled]
▶ Trusted Computing	
TPM Support	[Enabled]
Pending operation	[None]
▶ S5 RTC Wake Settings	
Wake System with Fixed Time	[Disabled]
▶ CPU Configuration	
Intel (VMX) Virtualization	[Enabled]
C states	[Disabled]
▶ Thermal Configuration	
DTS SMM	[Disabled]
▶ SATA Configuration	
SATA Mode Selection	[RAID]
PCIe Storage Dev On Port 9	[RST Controlled]
▶ AMT Configuration	
AMT support	[Disabled]

► H/W Monitor (Smart Fan 1 Mode)

CPU Smart Fan Mode	[Automatic Mode]
Fan Off Temperature Limit	20
Fan Start Temperature Limit	35
Fan Full Speed Temperature Limit	80
Fan Start PWM	20
PWM Slope Setting	[3 Duty]

► H/W Monitor (Smart Fan 2 Mode)

CPU Smart Fan Mode	[Automatic Mode]
Fan Off Temperature Limit	25
Fan Start Temperature Limit	35
Fan Full Speed Temperature Limit	80
Fan Start PWM	20
PWM Slope Setting	[3 Duty]

Chipset Menu

► South Bridge

Azalia HD Audio	[Enabled]
-----------------	-----------

► USB Control

USB Control 1	[Enabled]
USB Control 2	[Enabled]
USB Control 3	[Enabled]
USB Control 4	[Enabled]
USB Control 5	[Enabled]
USB Control 6	[Enabled]
USB Control 7	[Enabled]
USB Control 8	[Enabled]
USB Control 9	[Enabled]

Security Menu

Administrator Password	[None]
User Password	[None]

Boot Menu

<i>Boot Configuration</i>	
Setup Prompt Timeout	3
Bootup NumLock State	[On]
Display POST Logo	[Enabled]
<i>FIXED BOOT ORDER Priorities</i>	
Boot Option #1	[Hard Disk]
Boot Option #2	[Network]
Boot Option #3	[USB Key]
Boot Option #4	[USB Hard Disk]
Boot Option #5	[USB CD]
Boot Option #6	[USB Floppy]
Boot Option #7	[CD/DVD]
Boot Option #8	[USB LAN]

Chapter 8: BIOS Updating Procedure

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:

http://www5.ncr.com/support/support_drivers_patches.asp

The BIOS update can be performed using the following methods:

- Bootable USB Memory Device
- Windows Flash Executable

Prerequisites

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

- USB Alphanumeric Keyboard
- BIOS Software. Download from the NCR Website:http://www5.ncr.com/support/support_drivers_patches.asp

USB Flash Key update prerequisites

- USB Flash Key with sufficient space for the update files.
- Access to a USB port on the terminal to be updated that is enabled in the BIOS (via BIOS setup).

Windows Flash Executable update prerequisites

- There should be no other programs running while the BIOS/SPI is updating.
- The Windows Flash Executable is designed to run from an Administrator account.

SPI/BIOS Updating Procedures

Using the Bootable USB Flash Key

1. Create a USB Flash Drive by installing the BIOS update package to this USB key.



Note: The USB flash drive disk size must be more than 512MB.

Linux PC

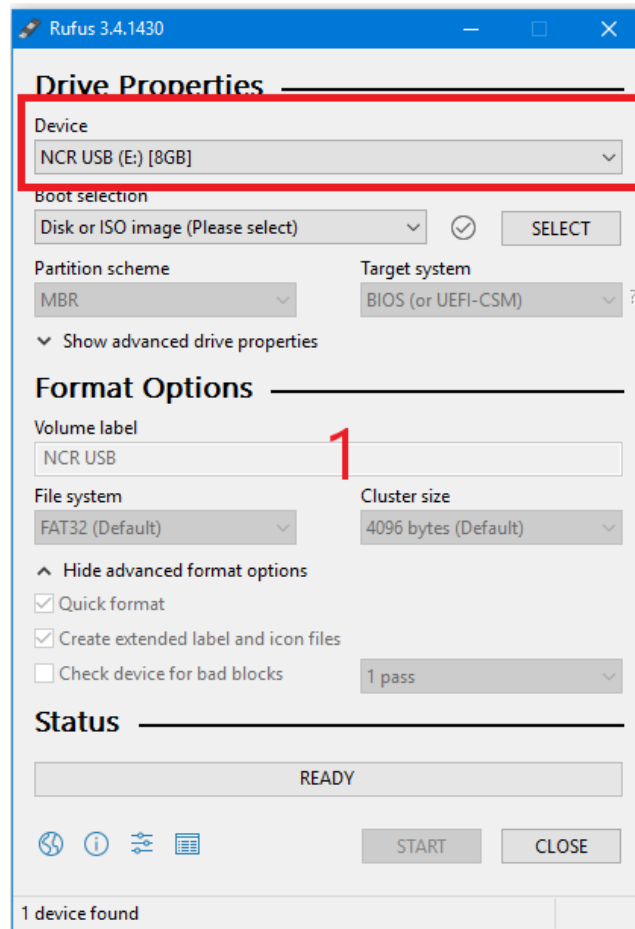
Use “dd” Linux command to deploy image in USB key:

```
sudo dd if=/CX7-BIOS_update_T06.iso of=/dev/sdX
```

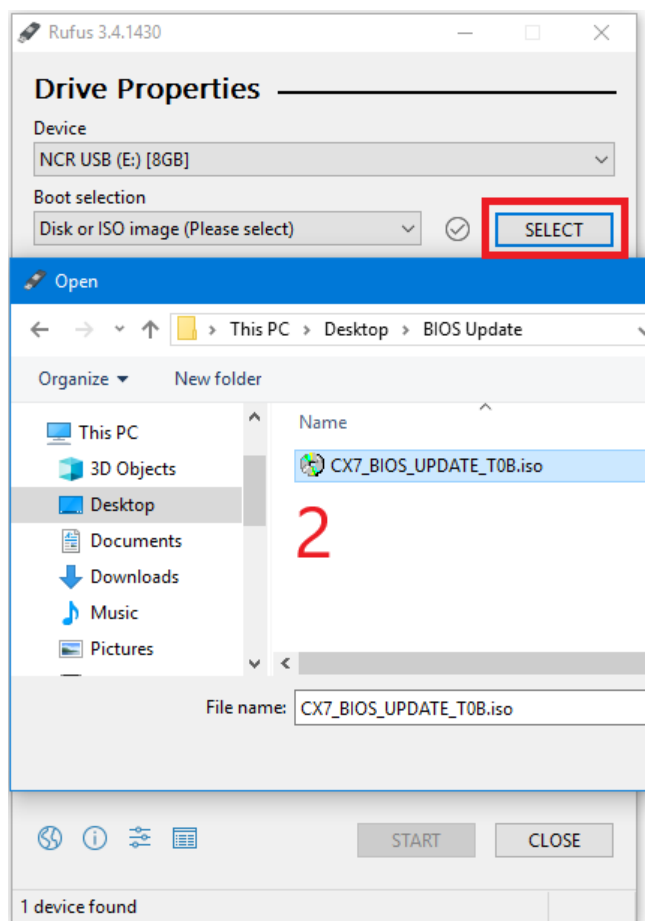
Windows PC

Download the Rufus Tool from the Rufus Website: <https://rufus.ie/> and use the tool to deploy image into USB key.

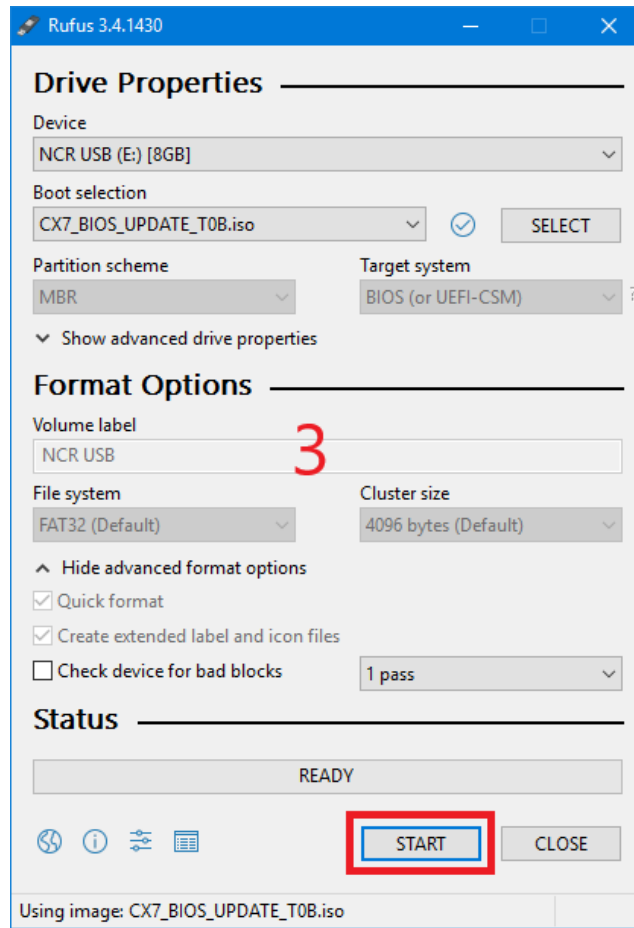
- a. Select the device from the Device drop-down list.



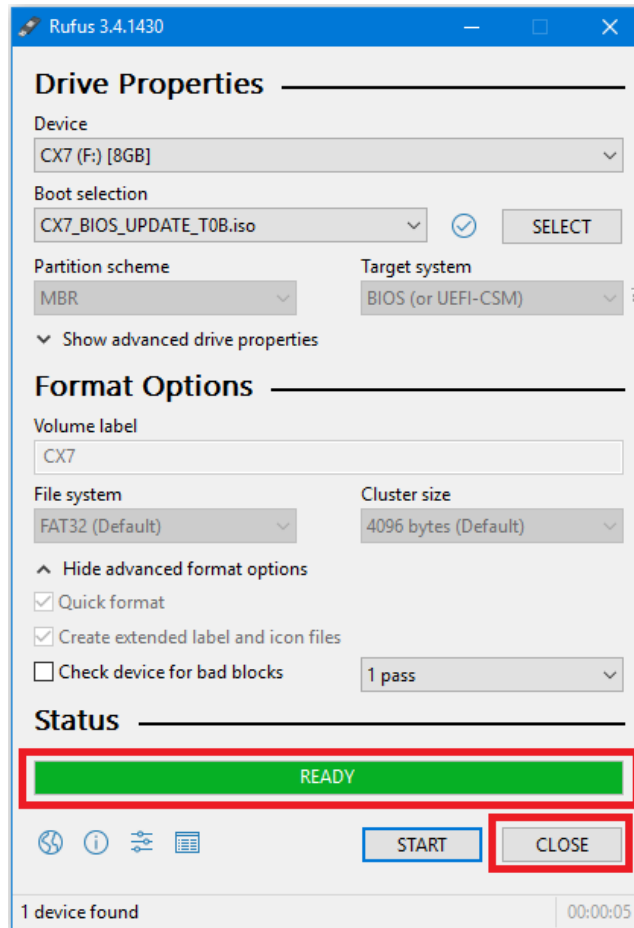
- b. Press **Select** to choose the image from the Boot Selection drop-down list.



- c. Press **Start** to load the image.



- d. When the load is complete, select **Close**.



2. Insert the CX7 USB Flash Drive into the USB Port.
3. Press [**F8**] during startup to bring up the Boot Menu.
4. Select the USB device to boot the CX7 BIOS flash key. An option menu will load.
5. Select option [**1**] to update BIOS with DMI preserved.



Note: After the update has completed and the terminal is rebooted, the terminal may reboot additional times as it powers up. This is normal and expected behavior due to the nature of the features of the BIOS/SPI.

Using the Windows Flash Executable



Note: Close all running programs prior to updating the BIOS.

To run the executable, follow these steps:

1. Right-click on the file and select **Run as administrator**.
2. When prompted, press a key to initiate the flash update. The terminal will reboot after the flash process has completed.



Caution: The reboot is important to ensure the BIOS initializes properly. Do not interrupt the reboot process.

Chapter 9: Initial Terminal Imaging

Introduction

Factory default HDD/SSD images for the CX7 are distributed on bootable auto-imaging USB Flash Drive media. The following procedures describe how to apply/restore an image on the terminal.



Warning: Using this procedure will replace any previously stored OS images created using the *Disk Image Backup and Recovery Tool*.



Note: A USB Keyboard is required to perform this operation.

Imaging Procedure

1. Connect the USB flash drive to the target terminal that you wish to image.
2. Connect a USB keyboard to the terminal.
3. Power on the terminal and boot from the USB Flash Drive. This can be done by pressing **F8** during the boot and choosing the USB option (**NCR**), or by entering *BIOS Setup* and changing the boot order.
4. The system boots in the Windows PE OS environment. Press **Y** on the keyboard at the confirmation prompt to re-image the terminal.
5. When the imaging process is complete, enter **Exit** on the keyboard to reboot the system.
6. After the reboot, remove the USB Flash Drive and disconnect the keyboard.