Intelligent Library System (ILS) 2.0
User Manual

Checkpoint

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Chapter 1 Introduction

The Intelligent Library System (ILS) is a product designed to help libraries protect collections, streamline operations, and improve patron service. Through ILS, libraries can reduce losses, enhance staff productivity, increase circulation, and improve patron satisfaction. The ILS operates in conjunction with the library's Automated Circulation System (ACS).

ILS consists of the following standard and optional components: Circulation Circuit (inventory tag), Patron Identification Card, Intelligent Sensor, Patron Self-Checkout Station, Staff Station Reader, Application Server, Handheld Portable Reader, and optional Circulation Circuit Programming Station.

Figure 1-1 shows an example of the ILS components and connections in a typical ILS setup. **Note:** Your specific ILS configuration may not include one or more of the components shown.
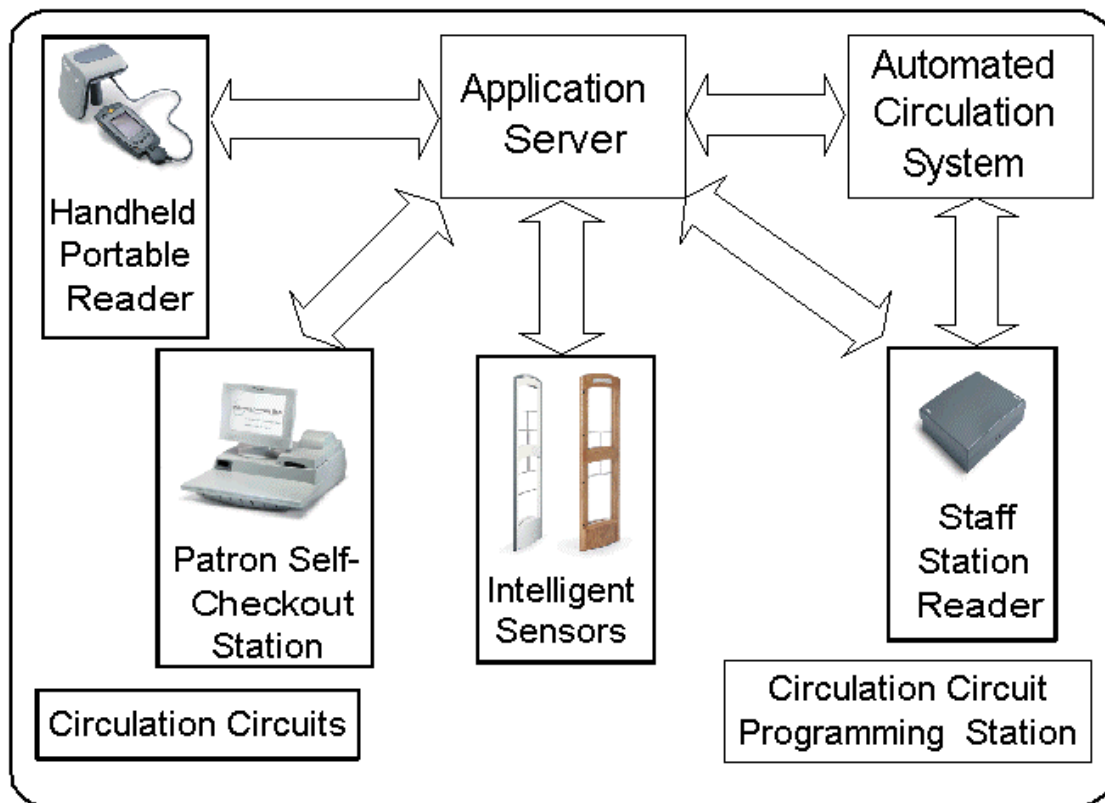
Figure 1-1: Sample Intelligent Library System Components

The ILS components communicate with each other through physical connections using various protocols and application programming interfaces (APIs). The Patron Self-Checkout Station, Intelligent Sensor, Staff Station Reader, and Handheld Portable Reader devices all incorporate a radio-frequency (RF) antenna and transceiver system (interrogator) designed to detect and read Intelligent Circulation Circuits (tags on library materials). Communications occur by detecting and interrogating an IC chip embedded in the Intelligent Circulation Circuit for its unique item specific information.

1.1. Document Overview

This manual provides a general overview of the ILS technology and illustrates the use and operation of each component.

This manual has been designed specifically for the patron, librarian, and administrator. It contains all the information necessary to take full advantage of the system capabilities. Whether you are a student or a library staff member, the Intelligent Library System will enhance your library experience. The system's inherent ease of use and efficiency allow patrons and staff more time to focus on other activities.

This manual is organized in chapters, with each chapter describing a system peripheral, such as the Patron Self-Checkout Station. Each peripheral is designed with a specific system role in mind. For example, patrons typically use the Patron Self-Checkout Station, while Library staff use the Handheld Portable Reader. Read the sections that apply to your role for ILS system operation.

The suggested reading for each role is listed below.

- Patron
  - ➢ Introduction
  - ➢ Patron Self-Checkout Station

- Library Administrator
  - ➢ Introduction
  - ➢ Patron Self-Checkout Station
  - ➢ Handheld Portable Reader
  - ➢ Application Server

- Library Staff
  - ➢ Introduction
  - ➢ Patron Self-Checkout Station
  - ➢ Handheld Portable Reader
  - ➢ Application Server

This manual is divided into the following chapters that cover system peripherals and important ILS tasks.

- Chapter 1 Introduction
- Chapter 2 Patron Self-Checkout Station
- Chapter 3 Handheld Portable Reader
- Chapter 4 Application Server
- Chapter 5 Tagging Procedures
- Chapter 6 Troubleshooting Guide
- Chapter 7 System Maintenance Guide

The following usage conventions are used throughout the Intelligent Library System User Manual.

Button Name - This describes a button or selection on the screen. For example, the <DONE> button is represented in this document as **Done**.

Key Name - This describes a keystroke on a keyboard. For example **Ctrl** represents the control key.

A sample screen illustration from the Patron Self-Checkout Station, Application Server, or a picture of a device represents each activity you may perform. Under each picture is a short description of the activities to be performed. After each description are step-by-step instructions on how to use the system to perform that activity.

1.2. Intended Audience

This document is intended for library patrons, staff, and administrators as well as Checkpoint Systems field service staff. The library staff includes librarians, staff, and temporary staff. The Field Service staff is comprised of the Checkpoint installers and the technical support personnel. These audiences need to understand the basic functions, operations, and procedures related to the ILS.

1.3. Related Documentation

The following documents provide additional ILS and related information.

- Upgrade Procedures
- Release Notes
- Circulation Circuit Programming Station User Manual

1.4. System Overview

The Intelligent Library System operates together with the library's existing Automated Circulation System (ACS). ILS includes the following components: Circulation Circuit (inventory tag), Patron Identification Card, Intelligent Sensor, Patron Self-Checkout Station, Staff Station Reader, Application Server, Handheld Portable Reader, and optional Circulation Circuit Programming Station as shown in Figure 1-1 on page 1-1.

It is possible for ILS to operate without an ACS interconnection using the ILS Bridge Interface feature. The Bridge Interface feature allows libraries with non-supported circulation vendors or no circulation systems to use the security and Staff Station Reader functionality of the ILS. With the Bridge Interface, the user of the ILS Control program can monitor and change the operation mode (check-in or check-out) of the Staff Station Readers. A library that is using the Bridge Interface can use a staff-station reader for checkout, but cannot use a Patron Self-Checkout Station.

The Off-line Processing feature allows libraries to configure the Application Server and Patron Self-Checkouts to continue to operate while offline with the library's circulation system. While the circulation system is offline, the Application Server records significant events. These events are reported to the circulation server when synchronization occurs. At the time of synchronization, the Due Date is sent to the circulation server. When off-line processing is turned on, the word ON appears next to Off-Line Processing. The feature is turned on or off by

Checkpoint field service personnel by setting a table parameter on the Application Server. If using the Bridge Interface (described earlier), off-line processing should never be turned on at the same application server.

The Intelligent Library, Patron Self-Checkout Station, Intelligent Sensor, Staff Station Reader, and Handheld Portable Reader all have a Radio Frequency (RF) antenna and transceiver system (interrogator) designed to detect and read the Intelligent Circulation Circuits. Communications occur by detecting and interrogating an IC chip embedded in the Intelligent Circulation Circuit (tag) for unique item specific information. Each interrogator includes an Applications Programming Interface (API) for bi-directional communications and program portability. Interrogated RFID Tag data is taken and compared to the library circulation database, in order to quickly and automatically identify the checkout status of an item.

The Application Server component is the communications gateway between the ILS subsystems and the library Automated Circulation System (ACS) so that the check-in, self-checkout, inventory management, and security activities can all be accomplished.

All library materials including books, CD/DVD materials, videotapes, and cassettes are tagged with a permanent RFID Circulation Circuit (inventory tag). This tag contains information that uniquely identifies the item within the library circulation database. Patron cards identify patrons when the card is scanned at the RFID Patron Self-Checkout Station. The card stores coded information unique to the individual patron that will identify the user to the library circulation system. The patron can then be validated as eligible or ineligible to use the library checkout privilege.

When the patron is checking out materials, the patron and checked out item information is stored in both the ACS and ILS databases. This duplication of records allows ILS to operate in an off-line mode, as well as on-line. If the patron is checking-in library materials, then the ILS makes a check-in request to the ACS, which updates its database and reports the result back the ILS. When materials are checked from a self-checkout station the ILS will request to grant privileges to the patron to checkout items from the ACS. If privileges are granted then a checkout request to the ACS is generated for each item.

The library staff typically uses a Staff Station Reader in situations where a patron needs help from a librarian or when a librarian is checking in or checking out library materials. A Patron ID Card is not necessary when the Staff Station Reader is used. The pad can only interrogate tags and functions the same as current bar code scanners used in library circulation systems do. The Circulation Staff Reader can also be integrated into a book return slot. When library materials are placed in the book return, the tags on the items are read and sent to the ACS. The ACS then updates its database and passes back transaction status to the ILS.

Library inventories can be taken by using the Handheld Portable Reader. The unit is a battery powered hand-held device that interrogates RFID Circulation Circuits when the unit detection head is within a ten-inch radius of tagged items. Inventory is taken by walking by library tagged items. The item Identifiers on the tagged items are read and stored in a portable data terminal. The stored information can be downloaded real-time to the Application Server using the wireless data-terminal option or downloaded after the inventory is completed as a batch file using the standard data terminal. The inventory data is then communicated to the library circulation system, which can compare the information from the portable reader to item information in the circulation database. The Handheld Portable Reader can also search for specified items using its search function. Single or multiple item IDs can be uploaded to the data terminal and when a scanned ID

matches one in the list the user receives an audible alert and the ID is displayed on the data terminal.

The ILS Intelligent Sensor protects Exit/Entry aisles against unchecked library materials leaving the secured area by determining whether tagged items have a checked (authorized/no alarm) or unchecked (non-authorized/alarm) events.

Patron Self-Checkout Stations combine patron card readers, a RFID Circulation Circuit interrogator, touch screen monitor, and printer in one compact unit. This provides the patron with library transaction capability without any librarian assistance. A patron can scan the RFID Patron Card and library materials, identifying the patron and linking the library materials to the individual through a communications session with the Library Circulation System via the Application Server. The Patron Self-Checkout Station can be configured to support multiple languages. With multiple languages, a language selection screen is presented to the patron to select a language for the self-checkout transaction.

The optional Circulation Circuit Programming Station allows libraries to read and create their own RFID Circulation Circuit tags and print barcode labels. This can also be used to convert library materials with barcodes to RFID tags programmed with the barcode value. A tag format file (created by Checkpoint field service staff using the Tag Designer software) is used to program the tags in a compatible format. Tags are programmed by passing them over the Circulation Circuit Programming Station.

1.5. Component Descriptions

The following sections describe in detail each of the ILS system components.

1.5.1. ILS Intelligent Sensor

The ILS Intelligent Sensor provides security at library exits and corrals. It generates a magnetic field that activates a tag and can receive the tag information from a distance up to 24 inches. Two intelligent sensors are used to form a secure aisle with up to 48 inches of tag detection range. Additionally the interrogator can communicate with the library circulation system via the Application Server in real-time, determining whether an item or items being interrogated have been checked out. Enunciators are alarmed if items in the interrogation field are not properly checked out.

1.5.2. Staff Station Reader

The Staff Station Reader is an interface for library personnel. The pad reads RFID Circulation Circuits (tags) when a book is placed on the pad at up to 12 inches from the pad in the vertical direction. The pad communicates through data links directly with both the library circulation system and the ILS. This provides the library with a means to perform typical functions with their system and RFID tagged items. It also allows the ILS system to request information from the circulation database in order to find the status of RFID tagged items that have been processed by the library circulation database.

1.5.3. Patron Self-Checkout Station

The Patron Self-Checkout Station provides a library patron the ability to checkout library materials without the assistance of the library staff. The Patron Self-Checkout Station can be

configured to support multiple languages. With multiple languages, a language selection screen is presented to the patron to select a language for the self-checkout transaction. Additionally the system may report patron or item messages if there is a problem conducting the checkout transaction. A typical scenario for a patron to check out a book would be as follows. A patron comes to the Patron Self-Checkout Station and selects a language (if using multiple languages). Then the patron identifies him or herself to the system with a patron ID card. The system then confirms the patron's eligibility to conduct a transaction through validation of the patron ID card. Next the patron is led through the transaction process by communication with the system through a touch screen monitor. The patron can checkout items by passing them one at a time over a short-range interrogator that is located in the Patron Self-Checkout Station. The short-range interrogator generates a magnetic field, which activates and interrogates the tagged item. The interrogated item ID is passed to the Application Server. The application server determines the item status and actions that can be taken via communications with the Library Circulation System. Then the Application Server updates the Patron Self-Checkout Station, which notifies the patron about their transaction status. After the patron scans all the items to be checked out, the patron then touches **Done**, and receives a receipt for the transaction listing all materials checked out and the respective due dates.

1.5.4. Patron ID Card

The Patron ID Card provides the system with a method to identify the patron to determine whether he or she is clear to check out items. It also provides the ability to associate tagged items with the patron.

1.5.5. Handheld Portable Reader

The Handheld Portable Reader is a hand held device used to provide inventory management functions by passing the tag reader near RFID tagged items located in the library. The device consists of a hand-held, rechargeable battery operated reader that generates a magnetic field, which is used to read RFID tagged items. The wand is attached through cabling to a data terminal, which can be carried in one hand or strapped onto the wrist. The data terminal stores information read by the wand. The data stored in the terminal can be downloaded to the Application Server in real-time with the wireless option or after an inventory has been taken with the standard data terminal. This data can be used to reconcile library inventory. The wand can also be used for item searches and shelf order checking. Item information can also be uploaded to the data terminal. When an item ID is scanned with the reader that matches an ID contained in the data terminal, an audible alert is triggered and the ID is displayed.

1.5.6. Application Server

The Application Server's primary functions are to be the communications gateway between the peripheral Intelligent Library subsystems and the Library Automated Circulation System, and to identify and configure all peripheral Intelligent Library sub-systems and to track and direct all ILS transactions.

The Application Server can operate in an on-line or off-line mode with the Library Circulation System. In the off-line mode, the server can track whether an item is being checked-out, checked-in, and determine whether tagged items going through secured areas are authorized. If unauthorized-tagged items detected by the system, the server will signal the Intelligent Sensor to alarm. Any transactions that occur independent of the library circulation system are updated when the ILS system is back in the on-line configuration.

The Application Server interfaces to the library circulation system and other subsystem components using the 3M protocol (SIP2) over an Ethernet Network Interface Card (NIC). The Ethernet NIC uses the TCP/IP protocol and session. The physical cable is 10BaseT.

1.5.7. Intelligent Circulation Circuit

The Intelligent Circulation Circuit provides a method of assigning 96 one time programmable bits of information to an item that can be read at a single radio frequency, 13.56 MHz, up to a distance of 4 feet. The tag allows for the reading of multiple tags through an anti-collision algorithm and error detection and correction. The tag also allows for adjacent tags to be read in the interrogation field by de-coupling the tag from another in a manner that does not stop its operation.

1.5.8. Circulation Circuit Programming Station

Libraries use the optional Circulation Circuit Programming Station to program circulation circuits with the item identifier from the barcode when converting the retrospective library collection. Circuits are also programmed when new materials are added to the collection. This reduces the time it takes to convert a library collection from barcode to RFIG circulation circuits. The Circulation Circuit Programming Station enables the library to easily link new materials into the ILS instead of waiting several weeks for pre-programmed tags. In addition, the Circulation Circuit Programming Station is integrated into a portable workstation that allows the library staff to program circulation circuits while moving around the library.

When adding a new item to the collection and programming the circulation circuit, the library can also print a barcode label. In many cases, libraries will continue to support the use of barcodes in addition to the RFID inventory circulation circuits, mainly for compatibility with other branch libraries still using barcodes. Using the Circulation Circuit Programming Station software application, libraries program the circulation circuits by passing them over the tag programming surface. After programming the circulation circuit, the application automatically reads, verifies, and displays the data that was written to the circulation circuit. Refer to Chapter 5 Tagging Procedures for instructions on how to affix tags to library materials.

Introduction

Chapter 2 Patron Self-Checkout Station

The Patron Self-Checkout Station is used by library patrons to check out library materials without the assistance of library staff. The Patron Self-Checkout Station is the main device used by the general public. It is designed to deliver ease of use and foolproof operations. By using an interactive graphical user interface (GUI), touch screen, and hands-free operations, the Patron Self-Checkout Station guides patrons smoothly through the checkout process. As the touch screens display on the monitor, step-by-step instructions help the library patron checkout materials properly. The process is quick, efficient and delivers a printed receipt listing the checked out materials and their due dates.

Behind the scenes, the Patron Self-Checkout Station is delivering data to the library automated circulation system, which processes the information and updates the library records. The data communicated includes information such as item identification and inventory data related to the library materials being checked out. The processing takes place almost instantaneously, allowing a speedy and thorough checkout.

Note: The sample screens shown in this chapter may be slightly different than the screens shown on your library's self-checkout station. Your library may have a different self-checkout station model or different operating environment.

2.1. Welcome Screens

If the Patron Self-Checkout Station is configured to use multiple languages, the first screen shown is the *ILS Multiple Language Welcome Screen* (Figure 2-1).

Figure 2-1: ILS Multiple Language Welcome Screen

If the Patron Self-Checkout Station is configured to use a single language, the first screen shown is the *ILS Single Language Welcome Screen* (Figure 2-2).
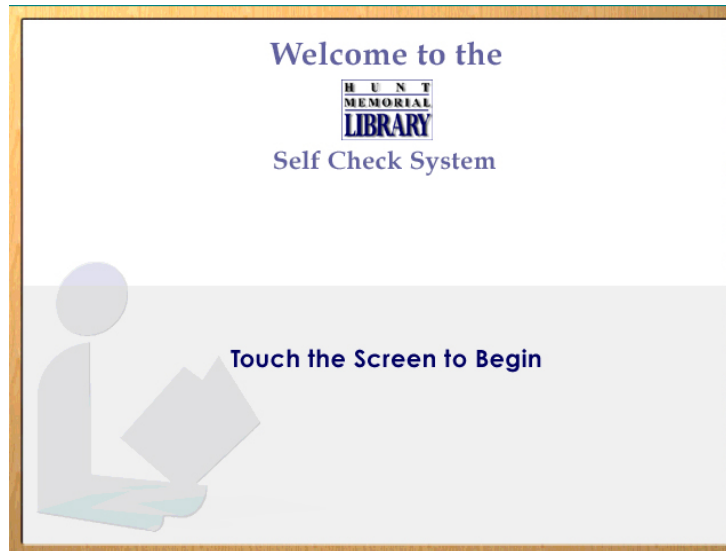
Figure 2-2: ILS Single Language Welcome Screen

Once you touch the screen to begin or select a language for the self-checkout, you will continue through the checkout process using screens in the selected language (if multiple languages are used). After you touch the Welcome screen or select a language, you are then presented with the *Patron Identification Screen* (Figure 2-3). Some libraries support multiple institutions. If there are multiple institutions, you will be presented with a *Multiple Institution Selection Screen* in which you need to select the correct institution.

1) Touch the screen or select a language to begin the checkout process.

2) Remove your finger from the touch screen. After you have removed your finger, the image will change to the Patron Identification Screen or Institution Selection Screen depending on your libraries needs.

Note: If the library supports more than one institution, you may be presented with the *Multiple Institution Selection Screen* in which you will need to select the correct institution. Otherwise, proceed to the *Patron Identification Screen* section.

2.2. Patron Identification Screen

Figure 2-3: Patron Identification Screen

You should have your patron ID card ready and follow the instructions shown on the screen. This is illustrated in Figure 2-3: Patron Identification Screen.

Watching the right side of the screen, you are given visual instructions on how to present your patron ID card for authorization. Your ID card may be different than the type of ID illustrated in **Figure 2-3: Patron Identification Screen**. If so, simply follow the visual instructions given on the Patron Identification Screen specific to your institution.

If you have been authorized to checkout items, the *Item Entry Screen* is displayed. If you have not been authorized, you will see the *Patron Identification Failure Screen* illustrated in **Figure 2-4: Patron Identification Failure Screen**.

2.3. Patron Identification Failure Screen
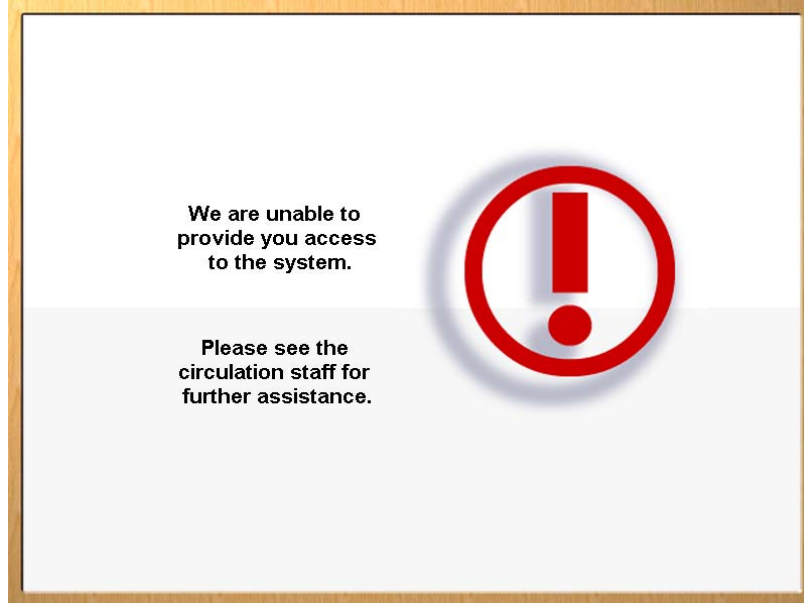
Figure 2-4: Patron Identification Failure Screen

If there are ever any questions concerning your authorization, go directly to the librarian desk for assistance. After a short time period the *Welcome Screen* will be displayed again. At that time you may attempt to checkout items again.

2.4. Item Identification Screen - Begin
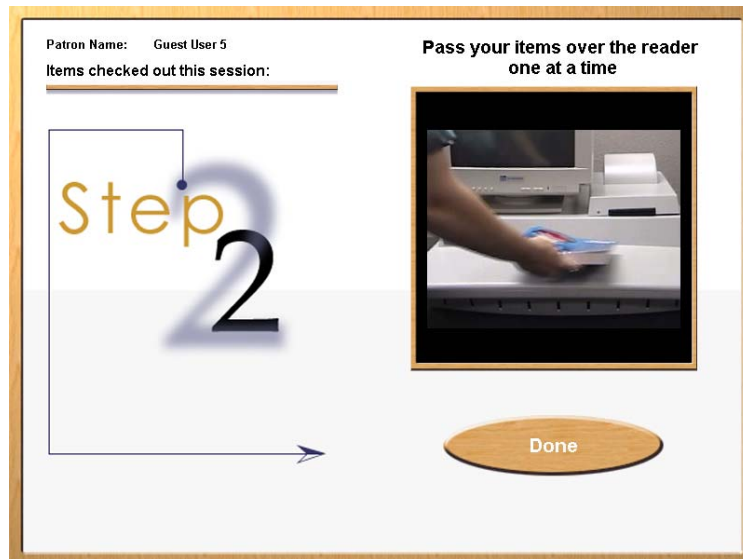
Figure 2-5: Item Identification Screen - Begin

Now that you have been authorized for checkout, the visuals on the screen advance and you see instructions on how to checkout each item. On the left side of the screen you see your name at the top and the heading Items Checked Out This Session. Once you have checked out items a list of those items is displayed as shown in **Figure 2-6: Items Identification Screen - Item List**.

Take one of the items you wish to checkout and slowly pass it over the surface area of the item identification pad. You do not need to slide it on the pad in order for the item to be identified. Simply move the item over the pad in a smooth fashion, just a couple of inches above the pad area.

Repeat the above step for each item you want to checkout.

2.5. Item Identification Screen - Item List
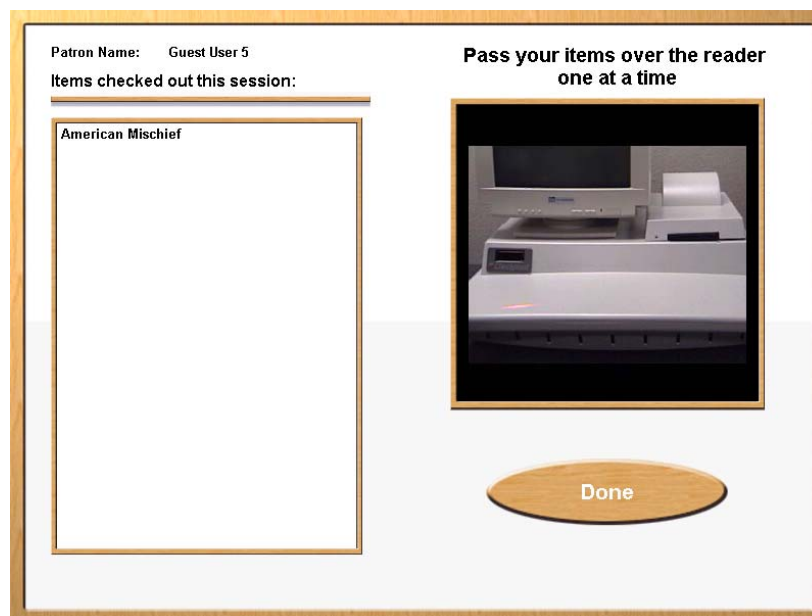
Figure 2-6: Items Identification Screen - Item List

As you pass the item over the pad, the system identifies each item and lists it on the left side of the screen.

Note: Some institutions may provide additional information along with the item name.

At anytime in the checkout process you may touch **Done** to complete your checkout session. The **Done** is on the right bottom of the screen.

Press **Done** to end your session.

2.6. Item Identification Screen - Scroll
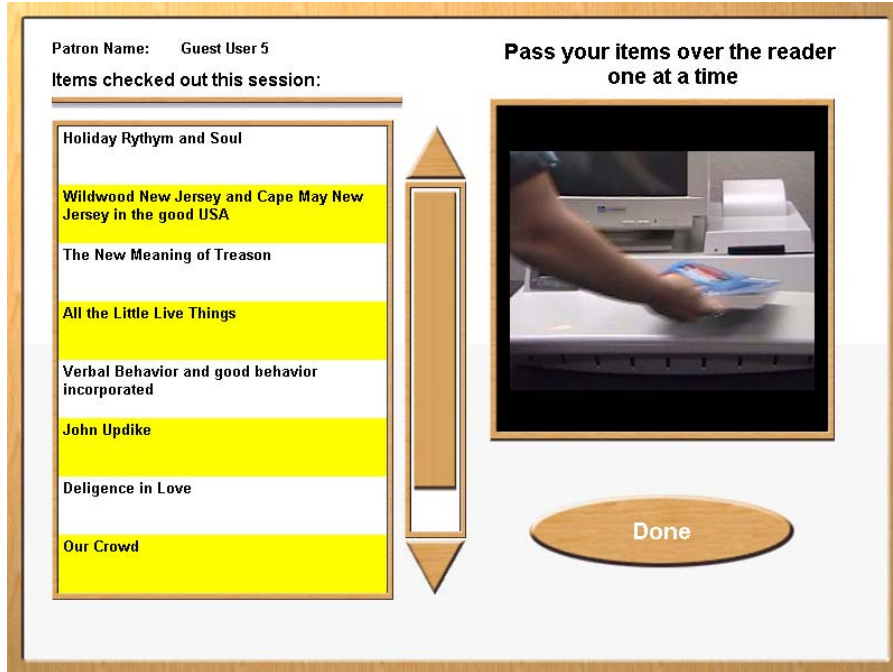
Figure 2-7: Items Identification Screen - Scroll

If you have a several items to check out and the listing of those items fills the item area on the screen, you will see a scroll bar with arrows at the top and bottom. Use these buttons to move the list up or down to view all of the items you have checked out.

If you have checked out more items than can display on the screen, the list will automatically scroll down to show the most recent items that were checked out. To see previously checked-out items that have already scrolled up off the screen, touch the **Up Arrow** button facing upward at the top of the scroll bar. To scroll back down to the most recent items checked out, press the **Down Arrow** button facing downward at the bottom of the scroll bar.

Press **Done** to end your session.

2.7. Item Identification Screen - Failed
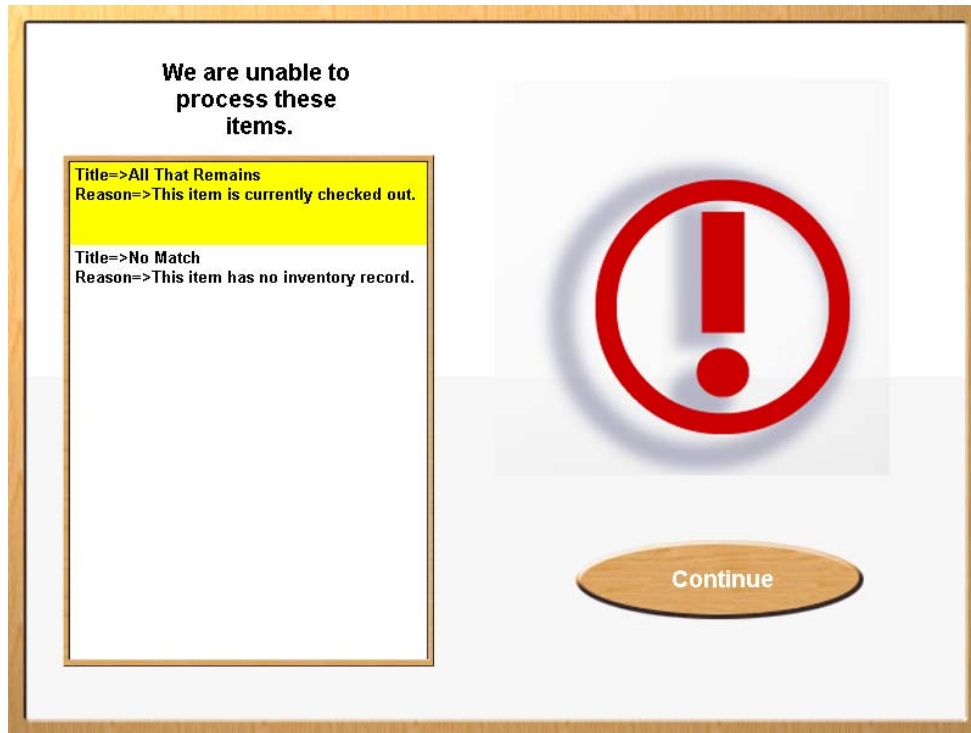
Figure 2-8: Item Identification Screen - Failure

This screen displays if any item you presented for check out is not accepted. On the left side of the screen you will see a message telling you the system was unable to process the item you presented for checkout. The screen lists the Title (if available) of the item and identifies the reason for denied access. You can contact your librarian for assistance with items that where not successfully checked out. You may continue with the checkout of additional items by returning to the **Item Identification Screen**.

Press **Continue** to continue your session.

2.8. Item Identification Screen - Failed - Scroll
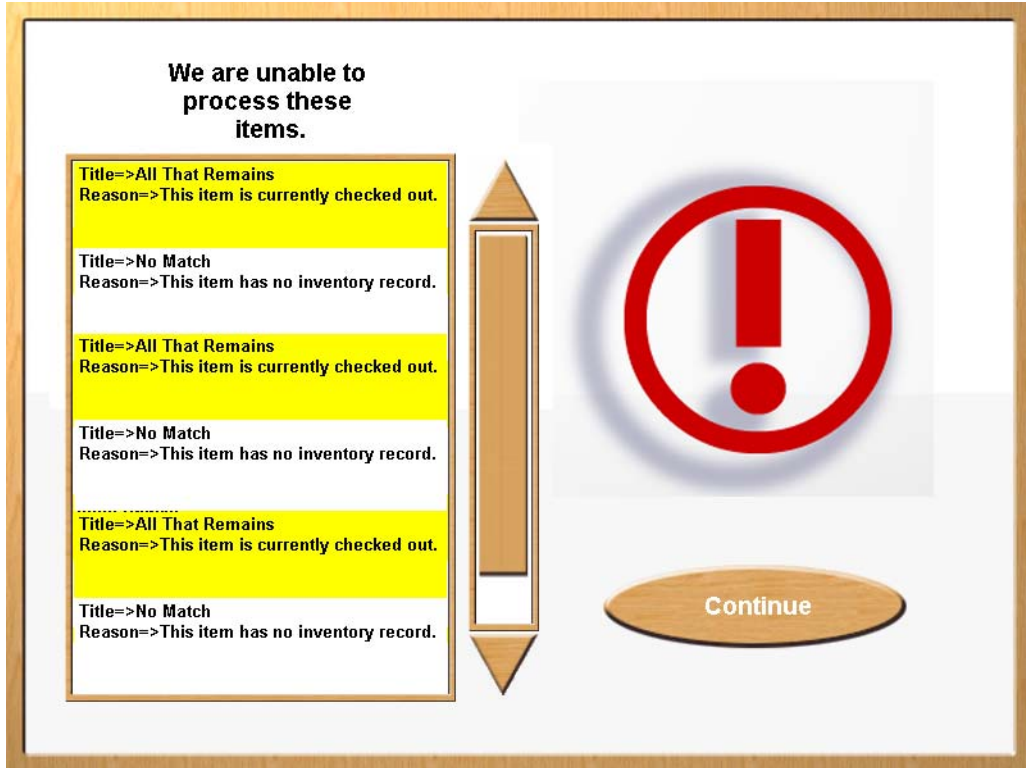
Figure 2-9: Item Identification Screen - Failed - Scroll

If there are numerous items that have been rejected so that all cannot be fully displayed on the left, a scroll bar will display to the right of the list. The **Continue** button now displays on the right side of the screen. Use the scroll buttons to view the list.

Touch **Up Arrow** to scroll up the list.

OR

Touch **Down Arrow** to scroll down the list.

Press **Continue** to continue your session.

2.9. End Session Screen
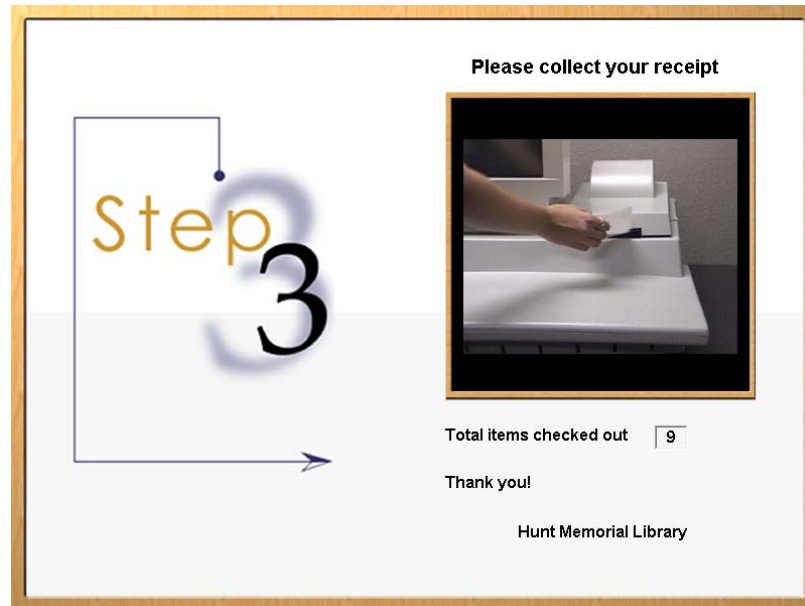
Figure 2-10: End Session Screen

When you have finished checking out all your items and touched **Done**, the *End Session Screen* displays, instructing you to collect your printed receipt and showing you the total number of items you have checked out. Collect the printed receipt from the receipt dispenser. Your receipt will list the items you have checked out as well as the return due date for each item.

Note: Some institutions may not provide a printed receipt.

Important Information to our Users in North America

FCC Regulatory Compliance Statement

Checkpoint Systems, Inc., offers Radio Frequency Identification Products that have been FCC certified or verified to 47 CFR Part 15 Subparts B/C and/or 47 CFR Part 18. Appropriately, one of the following labels will apply to the approval:

NOTE: This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- OR -

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) including this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation, which may include intermittent decreases in detection and/or intermittent increases in alarm activity.

- OR -

NOTE: This equipment has been tested and found to comply with the limits for a miscellaneous type ISM device, pursuant to Part 18 of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio communications reception, which can be determined by turning the equipment off and on, please contact Checkpoint Systems, Inc., at 1 (800) 257-5540 for further assistance.

Equipment Safety Compliance Statement

Checkpoint Systems Radio Frequency Identification products have been designed to be safe during normal use and, where applicable, certain components of the system or accessory sub-assemblies have been certified, listed or recognized in accordance with one or more of the following Safety standards: UL 1012, UL 1037, UL 1310, UL 60950-1, CSA C22.2 No. 205, CSA C22.2 No. 220, CSA C22.2 No. 223, CSA C22.2 No. 60950-1. Additional approvals may be pending.

WARNING: Changes or modifications to Checkpoint's Radio Frequency Identification (RFID) equipment not expressly approved by the party responsible for assuring compliance could void the user's authority to operate the equipment in a safe or otherwise regulatory compliant manner.

Important Information to our Users in Europe

CE Compliance Statement

Where applicable, Checkpoint Systems, Inc., offers certain Radio Frequency Identification (RFID) products that have CE Declarations of Conformity according to R&TTE Directive 99/5/EC.

System Electromagnetic Compatibility (EMC), has been tested and notified through Spectrum Management Authorities using laboratories, whereby, conformity is declared by voluntarily accepted European Telecommunications Standards Institute (ETSI) standards EN 301489-3 and EN 300330-2.

$$CE \; \textcircled{!}$$

NOTE: Certain Radio Frequency Identification (RFID) equipment have been tested and found to conform with the CE emission and immunity requirement in Europe. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Under unusual circumstances, interference from external sources may   degrade the system performance, which may include intermittent decreases in detection and/or intermittent increases in alarm activity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment experiences frequent interference from external sources or does cause harmful interference to radio communications reception, which can be determined by turning the equipment off and on, please contact a Checkpoint Systems representative for further assistance.

Equipment Safety Compliance Statement

Checkpoint Systems Radio Frequency Identification products have been designed to be safe during normal use and, where applicable, certain components of the system or accessory sub-assemblies have been declared safe according to the European Low Voltage Directive (LVD) by being certified, listed, or recognized in accordance with one or more of the following European safety standards; EN 60950, EN 50364, EN 60742. Additional approvals may be pending.

WARNING: Changes or modifications to Checkpoint's Radio Frequency Identification equipment not expressly approved by the party responsible for assuring compliance could void the user's authority to operate the equipment in a safe or otherwise regulatory compliant manner.

NOTES

Chapter 3 Handheld Portable Reader

3.1. Overview

The Intelligent Library System (ILS) Handheld Portable Reader is a key component in Checkpoint's family of ILS products. Consisting of a lightweight, handheld sensing unit, the Handheld Portable Reader combines convenience with versatility. An extendable handle makes it easy to read items placed in hard-to-reach areas, while the sophisticated antenna design and electronics make the Handheld Portable Reader the longest-range portable reader available. This feature is exceptional when checking inventory or trying to locate materials that haven't been shelved properly.

The ILS Handheld Portable Reader is designed with ease of use in mind. The handheld antenna contains three LED's: the green light indicates power on, the red light alerts the user that a Circulation Circuit is being read, and the yellow one indicates a low battery.

The ILS Handheld Portable Reader enables a fast, efficient and accurate method for taking inventory of the library material.

The Portable Data Terminal (PPT 2700/2800) enables data to be uploaded or downloaded from the Application Server, providing both inventory and search capability.

Figure 3-1: Handheld Portable Reader

3.2. Powering Up the Handheld Portable Reader

Prior to using the Handheld Portable Reader for any significant inventory collection or inventory search session it is imperative that its battery is fully charged. Connect the battery to the battery charger and plug the adapter into an outlet to begin charging. The estimated charging time is 4-6 hours.

When the battery is completely charged, connect the Handheld Portable Reader battery to the top of the Handheld Portable Reader. Once you have started using the Inventory Collection or the Search Inventory programs, the Handheld Portable Reader will be powered up.

3.3. Powering Up and Charging the PPT 2700/2800

3.3.1. Powering Up

Press the power button on the lower left-hand side of the terminal to turn the PPT 2700/2800 on and off.
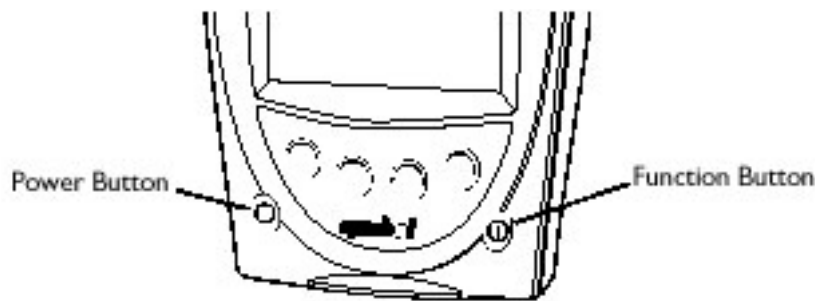
Figure 3-2: Powering Up the PPT 2700/2800

Note: If you have not used the PPT 2700/2800 within the configured time, the device will go into Power Save mode. This means that the device will power down. To turn it on press the red power button. You will be returned to the last screen presented prior to shut off.

3.3.2. Charging the Device

Before using your terminal for the first time, charge the battery. Also, when battery voltage is low, a warning message displays indicating the battery needs to be charged. You can charge the battery using the CRD 2800 cradle. Your terminal is equipped with a memory backup battery that automatically charges from the main lithium-ion battery. This backup battery retains data in memory when the terminal's battery is removed, and takes several hours to charge when you first use your terminal.

Note: If you remove your lithium-ion battery before the backup battery is fully charged, data may be lost. For this reason DO NOT remove the battery within the first ten hours of use.

Using the Cradle to Charge the Battery
To charge the terminal's battery using the cradle:
Connect the power supply to the power port on the back of the cradle, and the other end of the power supply to a wall outlet.
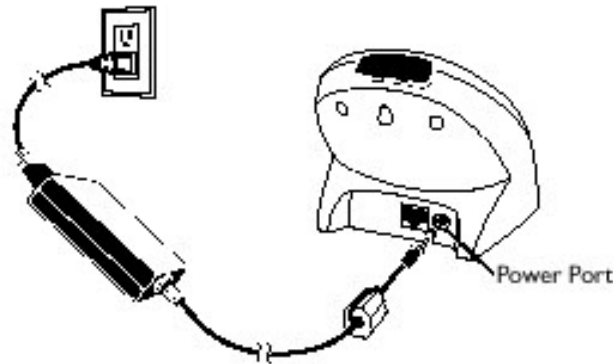
Figure 3-3: Charging the PPT 2700/2800

Insert the PPT 2700/2800 terminal in the cradle.

Figure 3-4: Docking the PPT 2700/2800

The Terminal Charge LED turns red to indicate charging, then green when the battery is fully charged. The terminal's battery is fully charged after approximately 2 1/2 hours.

3.3.3. Charging the Spare Battery

To charge a spare battery, insert the battery in the spare battery-charging slot in the back of the cradle, oriented so the contacts are facing down and towards the back of the cradle. Press the battery down into the slot until firmly seated.

The Spare Battery Charge LED turns red to indicate charging, then green when the battery is fully charged. The battery is fully charged after approximately 2 1/2 hours.
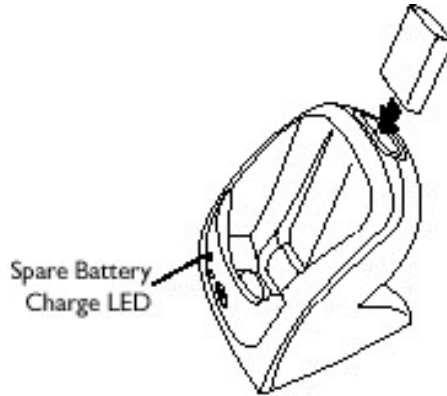
Figure 3-5: Charging the Spare Battery

3.3.4. Using the PPT 2700/2800

In this section the word tap is used instead of click because the stylus supplied must be used to tap the touch screen. The stylus is stored in a silo on the back of the PPT 2700/2800. Please refer to the Symbol PPT 2700/2800 Series Quick Reference Guide for information regarding use of this device.

3.3.5. Check on the Status of the Batteries

It may become necessary to check the status of the PPT 2700/2800's battery power. Use the following procedure to check the power status of the battery:

1. Tap the Windows icon in the upper left hand corner of the screen.

2. Tap the Settings menu item. The Settings Panel (Figure 3-6) screen displays.

3. Tap the System tab at the bottom of the Settings Panel screen.

Figure 3-6: Settings Panel

4. Tap the Power icon on this screen. The Battery Status screen (Figure 3-7) displays. This screen shows you the power status of both the main and the backup batteries. A warning will display if either battery is low.
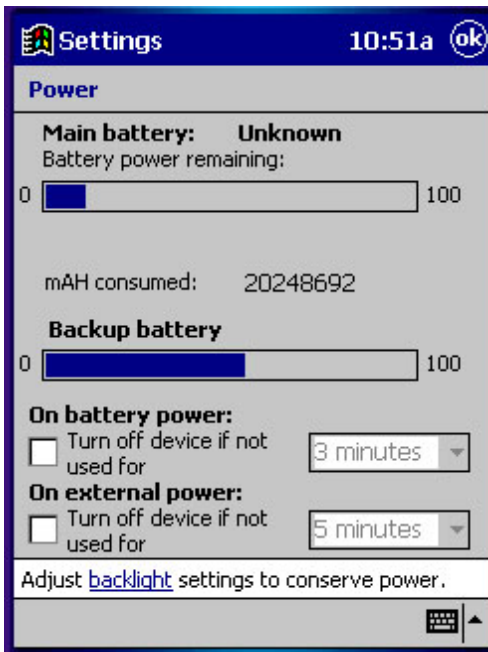
Figure 3-7: Battery Status

3.4. Collecting Inventory Data and Scanning Library Materials

Now that the Handheld Portable Reader has been initialized you are ready to start collecting inventory information.

Connect the cable from the Handheld Portable Reader to the PPT 2700/2800.

Figure 3-8: Connecting Cable to PPT 2700/2800

Turn the PPT 2700/2800 on. To do this, press the red button in the lower-left hand corner of the device.
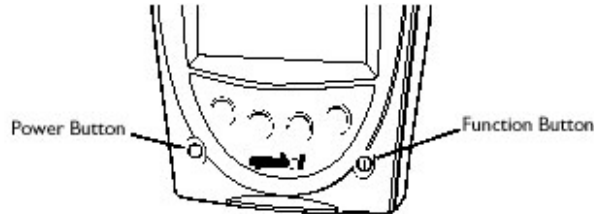
Figure 3-9: Turning PPT 2700/2800 On

Once you have started the PPT 2700/2800, you will be presented with the ILS Inventory Main Menu Screen (Figure 3-10).
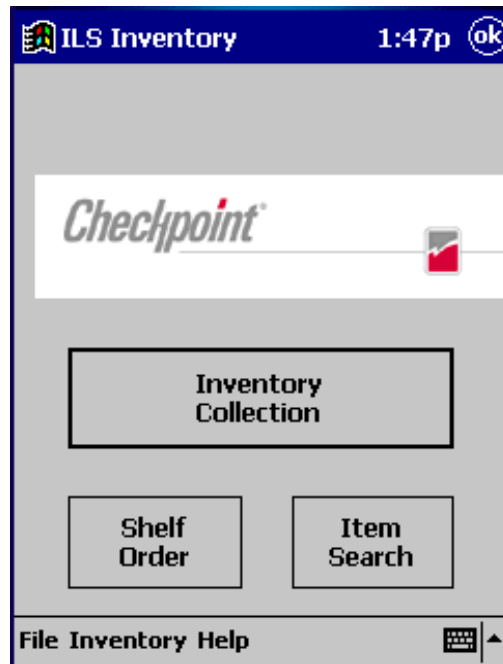
Figure 3-10: ILS Inventory Main Screen

Note: If you are not presented with this screen, tap the start button in the upper-left hand corner of the screen. Tap on the ILS Inventory menu item provided in the start menu. This will launch the program needed to collect and search the inventory.

Tap on the Inventory Collection button located in the center of the screen. Tap the Start button located in the bottom-left hand corner of the screen. If a previous inventory collection file was not transferred to the ILS Server, you will be asked if you want to append to the file. Answering Yes will continue the previous inventory collection, and new items being appended to the file. If you answer No, you will be asked to confirm that you do not wish to keep the existing data. Tap **OK** if you are sure, and a new inventory file will be created. Tap Cancel and you will append to the

file. If you wanted to transfer the previous file, you can immediately tap done to initiate a file transfer.
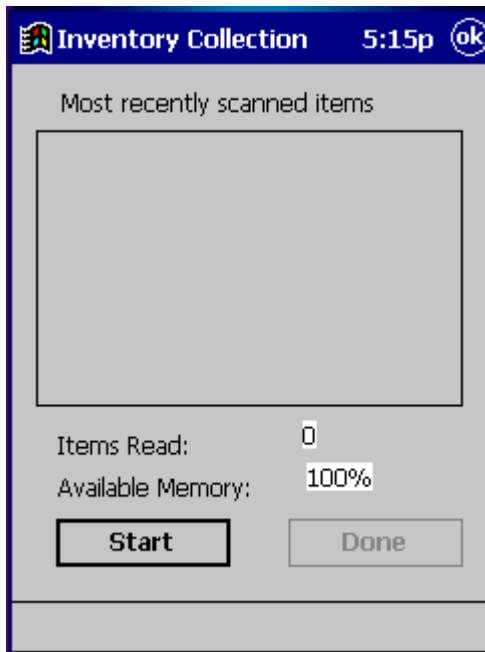
Figure 3-11: Inventory Collection

Begin to scan the tagged items. Hold the wand in your hand about three inches from the material you wish to scan. Notice that the red light on the wand is now blinking. This indicates that the wand is detecting tagged materials. The wand can detect circulation circuits up to a distance of 8 inches. Therefore it is important to keep the wand focused on the intended inventory items to avoid unwanted data from being collected.

You will notice that once you have scanned a tag, the bar code number for that tag will display on the PPT 2700/2800 in the Most Recently Scanned Items field. The Items Read field will supply you with the total number of inventory tags read over time. The Available Memory field will supply you with the percentage of memory still available.

Once you have completed scanning all of the desired tags, tap the DONE button.
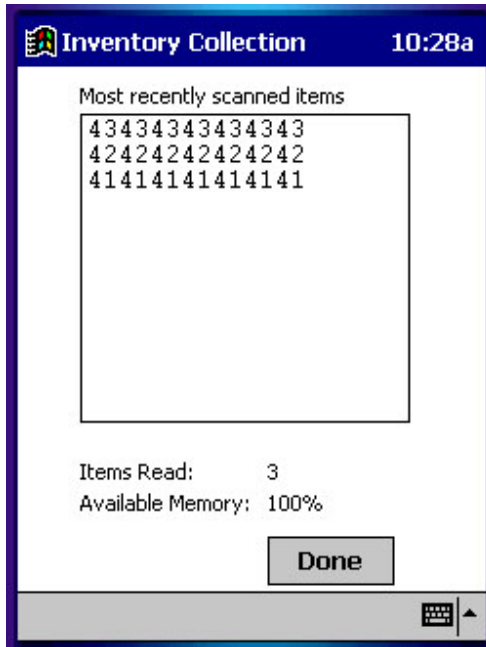
Figure 3-12: Inventory Collection In Progress

3.5. Transferring the Inventory Data Collected

Once you have completed scanning the tags, you are ready to transfer the data. A pop up screen will display asking you if you want to transfer the data collected. Tap **OK** to do so.

Note: If you wish to continue the inventory collection progress after you have pressed **Done**, press Cancel to prevent file transfer and reenter inventory collection mode.

(Batch Mode only) Unplug the cable from the bottom of the PPT 2700/2800.
(Batch Mode only) Dock the PPT 2700/2800 into the cradle.

A Transferring… screen will display on the PPT 2700/2800 while data is transferring to the Application Server.

Once the transfer is completed, the Application Server will display the Handheld Portable Reader Operations window. At this time the inventory you transferred is converted to a text file containing the list of barcodes. The file name and location will be displayed in the Transfer Status Display window. The file is now ready to be transferred to the circulation system. When the process is finished click the <Close> button.
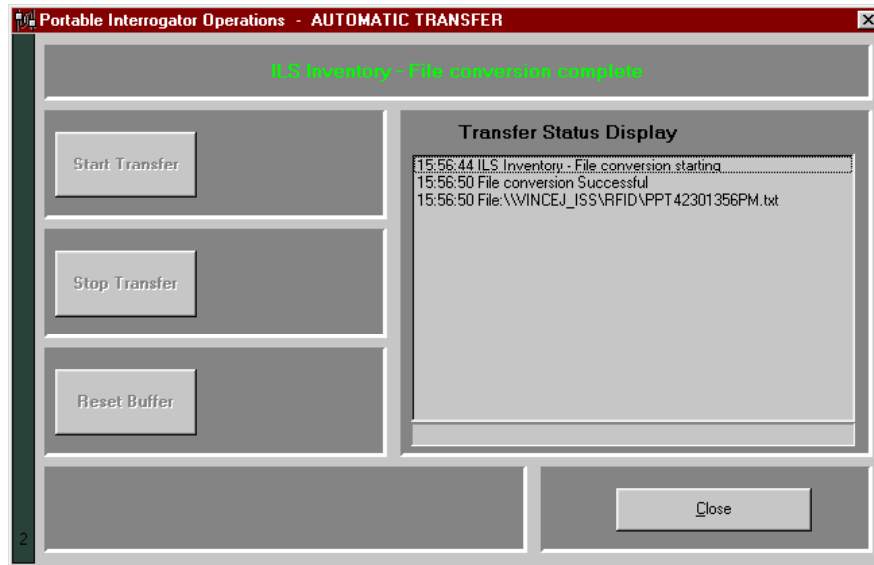
Figure 3-13: Handheld Portable Reader Operations

The PPT 2700/2800 will read Transfer Complete. Tap **OK**. This will return you to the ILS Inventory Main Screen. You may begin another inventory collection by selecting Start, or exit to the main screen by clicking **OK** found at the top-right of the screen.

3.6. Searching the Inventory

To begin searching the inventory, tap the <Item Search> button located in the bottom right hand corner of the ILS Inventory Main Screen. An Item Search file must be prepared on the Application Server.

3.6.1. Preparing a Search List File

An Item Search List file is identified by the.psl file extension. The file can be created from the results of other search operations, or may be transferred from the Application Server to the PPT 2700/2800. The file may be created by a report on the circulation system, or simply by using Notepad to enter barcodes.
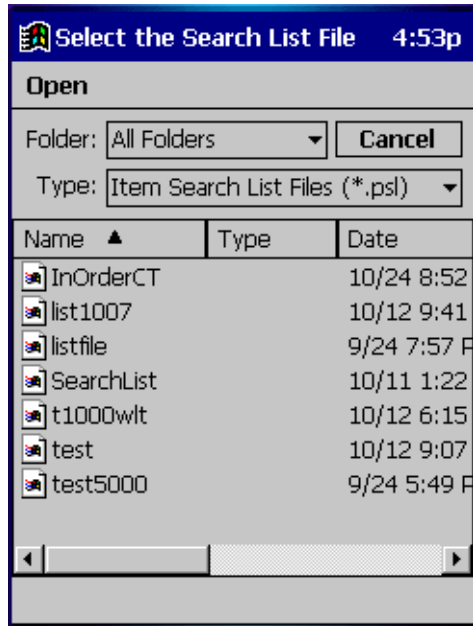
Figure 3-14: Select the Search List File Screen

Transferring and Selecting the Search List File

To transfer a search list file (or files) from the Application Server, it must be placed in the synchronization directory for your PPT 2700/2800. There should be a shortcut to this directory on the desktop of the Application Server. Once the file is in the correct location, dock the PPT 2700/2800 and the file(s) will be automatically transferred. Refer to the Wireless Operations sections for details of file transfer using a Wireless PPT 2700/2800.

Once the files have been transferred, tap the <Item Search> button. The Select the Search List File screen is used to choose the desired file. The down arrow to the right of the Type field can be used to choose files of other types that can be used as search lists. Tap the file name to select it to be used for the search. The <Cancel> button at the top-right can be used to return to the main screen.

3.6.2. Search Mode Screen

There are several ways to view information on the Search Mode Screen.

- **Option 1 - Check the Items Found button**: This will show you all of the barcodes that were found in the field below.

- **Option 2 - Check the Items Not Found button**: This will show you all of the barcodes that the system has not yet found.

- **Option 3 - Check the Show All Items button**: This will show you both the Items Found and the Items Not Yet Found. This is the default selection. Tap the other buttons at any time to change the view.

When the Alerts enabled button is checked, an alert display and sound will occur for each item that is found. The search will stop temporarily, allowing you to locate the item found on the shelf. Tap this button to disable this feature.

Tap the Start button to begin searching for the barcodes. You will notice that the barcode display field(s) will begin to reflect changes in the status of the search items, depending on the search option you chose. Items found will be listed as you find them. Items not found will be removed from the list as you find them.
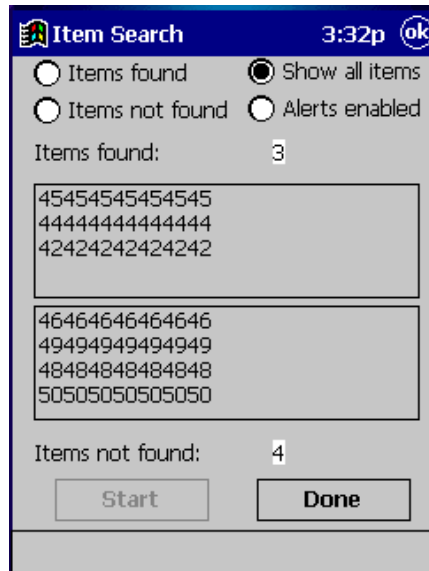
Figure 3-15: Item Search Screen

Begin to scan the inventory items. Hold the wand in your hand about three inches from the material you wish to scan. Notice that the red light on the wand is now on. This indicates that the wand is detecting tagged materials. The wand can detect circulation circuits up to a distance of 8 inches. Therefore it is important to keep the wand focused on the intended inventory items to avoid unwanted data from being collected.

Note: While the red light may flash when the scanner detects any tag, a barcode will only display in the Items found list if it matches an item present in your Search Items list.

When an alert is displayed, the barcode, shelf location, and title of the item will be displayed. Tap **Continue** to resume the search.
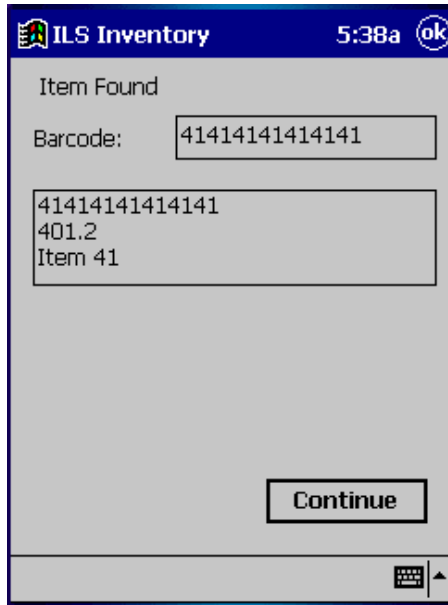
Figure 3-16: Item Found Alert

When you are finished searching tap **Done** at the bottom of the screen. If all of the items are found, an alert screen will notify you. Tap **OK** to continue. At this time, the Item Search result files will be generated. A pop-up will display asking you to Please dock the PPT 2700/2800 unit and press **OK** to begin transfer of the Search Results file. Tap **OK**. (**Note:** In Wireless mode the file transfer is automatic.)

Note: If you would like to abort the file transfer, tap the Cancel button on this pop up. You will then be back at the Item Search screen.

The Search Results file will be transferred to the configured directory on the Application Server. Refer to section 3.5 Transferring the Inventory Data Collected for details. This file will list all of the barcodes searched. If a barcode was found, the date and time of the search will be listed. If the barcode was not found, the date and time will not be listed.

Two additional files will also be created to list the items found and the items not found. The items found file will have the file extension.psf. The items not found file will have the file extension.psm. The filename of the item search list file will be used, with the appropriate file extension added. These files may be used to perform another search, or may be processed as results of the search on the circulation system.

3.7. Shelf Order Search

The Shelf Order search may be used to verify the contents of a shelf against a shelf order list generated by the circulation system. Items scanned will be compared to the shelf order list to determine if they are in order, not in the list, or not found. This allows for verification and sorting of the shelf contents. This is another method available for performing inventory.

To begin a Shelf Order search, tap the <Shelf Order> button located at the bottom-left of the ILS Inventory Main Screen.

3.7.1. Selecting a Shelf Order Search File

A Shelf Order Search file is identified by the.pso file extension. The file can be transferred from the Application Server to the PPT 2700/2800. The file can be created by a running a Shelf Order report on the circulation system.
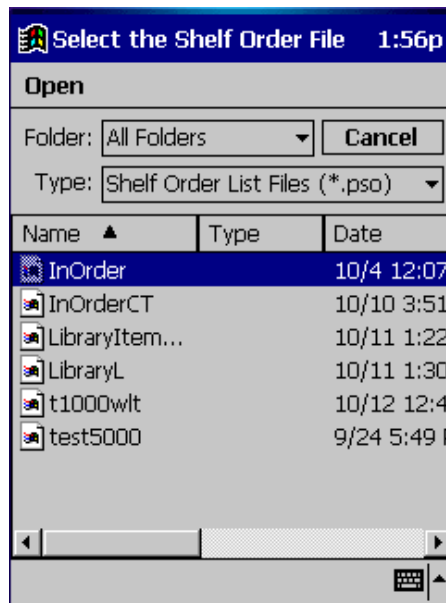

Figure 3-17: Select the Shelf Order File

Transferring and Selecting the Shelf Order File
To transfer a shelf order file (or files) from the Application Server, it must be placed in the synchronization directory for your PPT 2700/2800. There should be a shortcut to this directory on the desktop of the Application Server. Once the file is in the correct location, dock the PPT 2700/2800 and the file(s) will be automatically transferred. Refer to the Wireless Operations sections for details of file transfer using a Wireless PPT 2700/2800.

Once the files have been transferred, tap the <Shelf Order> button. The Select the Shelf Order File screen is used to choose the desired file. The down arrow to the right of the Type field can be used to choose files of other types that can be used as shelf order lists. Tap the file name to select it to be used for the search. The <Cancel> button at the top-right can be used to return to the main screen.

3.7.2. Shelf Order Search Screen

The Shelf Order Search screen has an Alerts Enabled button. When this button is checked, an alert display and sound will occur for items of interest. Tap this button to disable alerts. Alerts will occur for the following reasons:

- Out of range – the item read was found in the Shelf Order list, but was not located close enough to the last item in the shelf order.

- Not in list – the item read was not found in the Shelf Order list.

The Offset in use display indicates the current setting for the offset used to determine when an item is considered to be in shelf order. An offset is needed because the wand can read items in a random order within its read range. The offset may be adjusted by changing the number and tapping the <Set> button. This allows for adjustment when items of different thickness are being scanned.

Tap the Start button be begin the Shelf Order Search. You must begin reading items at the starting shelf location in the list.

The Shelf Order Search screen displays the following information:

- Items in file – the original count of the items read from the Shelf Order file.

- Items Read – the number of items read during the search.

- Items in order – the number of items that were read in shelf order.

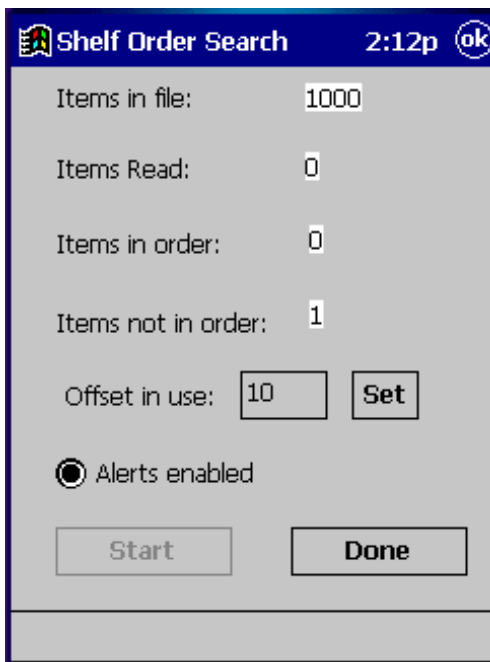- Items not in order – the number of items that were read that are not in shelf order.

Figure 3-18: Shelf Order Search Screen

The Offset in use and the Alerts enabled settings may be changed at any time during the search.

When you are finished searching tap **Done** at the bottom of the screen. If all of the items shelf order list are found, an alert screen will notify you. Tap **OK** to continue.

3.7.3. Shelf Order Alert

When a Shelf Order Alert is displayed for an item that is not in the list, only the barcode will be displayed. The Item Status field will indicate Not in List.

The <Show Prev> button will display the previous item read. You can tap this button to display the last item in order to assist in locating the item on the shelf. This item should probably be removed from the shelf, since it is not in the shelf order list.

The <Show Next> button will display the next item read.

The <Show Item> button returns the display to the item that is not in the list.
Tap **Continue** when you are ready to resume the scan. Be sure to start at the position you were in when the alert occurred.

Figure 3-19: Shelf Order Alert – Not in List

When a Shelf Order Alert is displayed for an item that is not in shelf order, the barcode, shelf location, and title will be displayed. The Item Status field will indicate Out of Range.

The <Show Prev.> button will display the previous item read. You can tap this button to display the last item in order to assist in locating the item on the shelf. This item should probably be repositioned on the shelf, since it was found in the wrong order in the shelf order list.

The <Show Next> button will display the next item read.

The <Show Item> button returns the display to the item that is not in the list.

The Offset to last item in order field will display the offset value from the last item read in order. For an alert to occur, this offset is greater than the Offset in use that is displayed.

Tap **Continue** when you are ready to resume the scan. Be sure to start at the position you were in when the alert occurred.
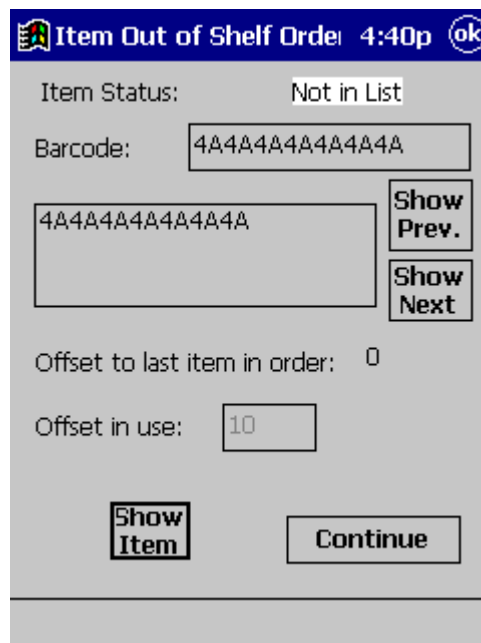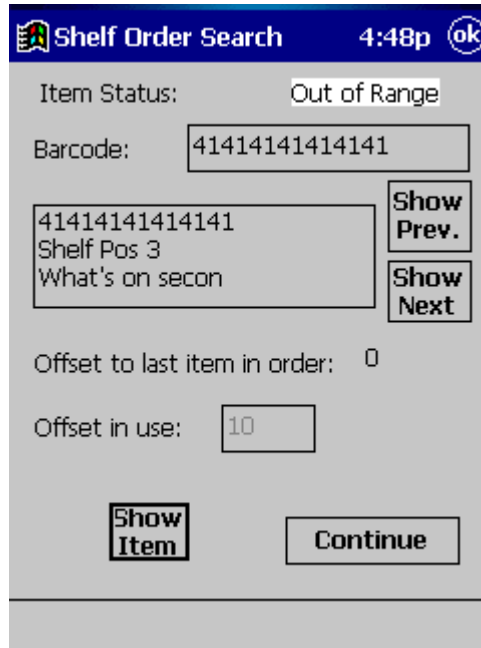

Figure 3-20: Shelf Order Alert – Out of Range

Remember that the Offset in use and the Alert enable settings may be changed once the search is resumed.

3.7.4. Shelf Order Results

When the shelf order search is completed, the Shelf Order Results screen is displayed. You can create result files of various types, including a new search list file. The entire list of items read may be displayed and scrolled through. Note that there is no prompt given to perform file transfer at this point. Once the result files have been created, you can dock the PPT 2700/2800 to copy the files to the Application Server. Refer to the Wireless Operations sections for details of file transfer using a Wireless PPT 2700/2800.

The Shelf order results window shows the counters from the completed search. Tap on the counter of interest before selecting one of the file buttons.

The <New Search List> button will create a new Search List file.psl that can be used to perform a new Item Search. For example, if the Items not in file line is selected, a new search could be performed to locate the items that do not belong on the shelf.

The <Create File> button will create a new Search Order Result file. The type of file created is selected based on which counter is selected in the Shelf order results window. The file extension is indicated in parentheses below.

- Items in file – the original count of the items in the Shelf Order file. (no file is created.)

- Items in order – the number of items that were read in shelf order. (.pio)

- Items out of order – the number of items that were read that are not in shelf order. (.poo)

- Items not found – the number of items in the Shelf Order file that were not found. (.pmi)

- Items not in file – the number of items read that were not in the Shelf Order file. (.pnl)

- The File Created field shows the path of the file that was last created when either the <New Search List> or <Create File> button was selected.
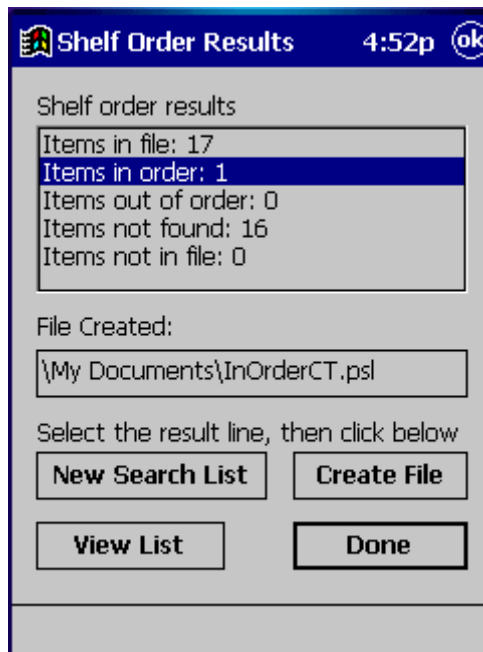

Figure 3-21: Shelf Order Results Screen

The View List button uses the Shelf Order View List screen to display the entire results of the scan. Each item read will be displayed in order, with the appropriate status information. Use the <Show Prev.> and <Show Next> buttons to step through the list.

Tap **Done** to return to the Shelf Order Results screen.
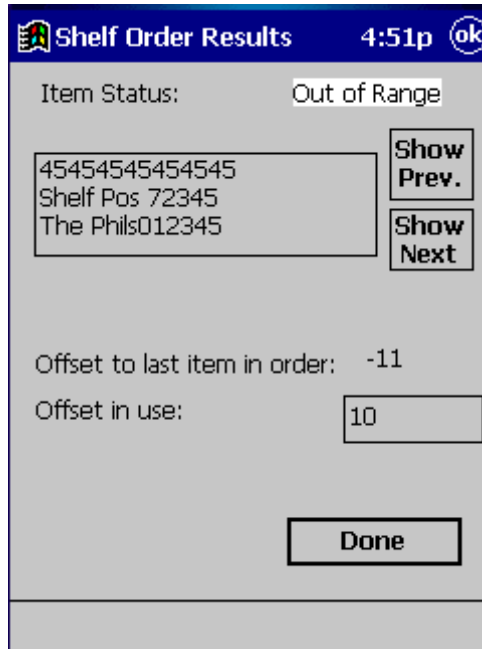
Figure 3-22: Shelf Order View List Screen

Tap **Done** when you are finished with the Shelf Order Results screen. The Shelf Order screen will be displayed. Tap **OK** at the top-right of the screen to return to the ILS Inventory main screen. Or, you may tap the Start button to repeat the last Shelf Order search.

3.8. Wireless Operations

The Wireless PPT 2700/2800 offers the ability to transfer files to and from the Application Server using the Wireless network. To transfer files, select the <Wireless File Transfer> button from the ILS Inventory Main Screen.

Figure 3-23: Wireless PPT 2700/2800 ILS Inventory Main Screen

The top line of the screen indicates the direction of the file transfer currently selected.

The down arrow to the right of the All Files (*.*)line allows you to choose the file type to be displayed. When a new selection is made, the file list displayed below will be updated.
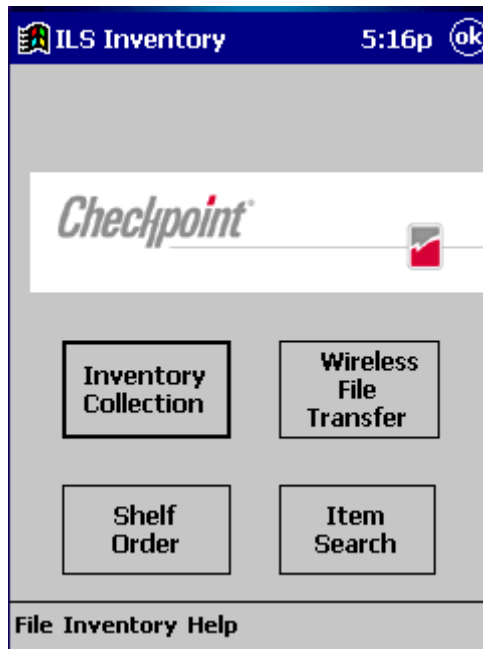
To transfer a file, tap the file name, then tap the <Copy File> button. Only one file at a time is transferred.

The Status field displays the results of the file transfer. When it completes successfully, the file is removed from the list. Any error will be indicated in this field.

Tap the <Get Files> button to change the file transfer direction to copy files from the Application Server to the PPT 2700/2800.

Tap the <Put Files> button to change the file transfer direction to copy files from the PPT 2700/2800 to the Application Server.

Tap **Done** when you are finished with the Wireless File Transfer screen.
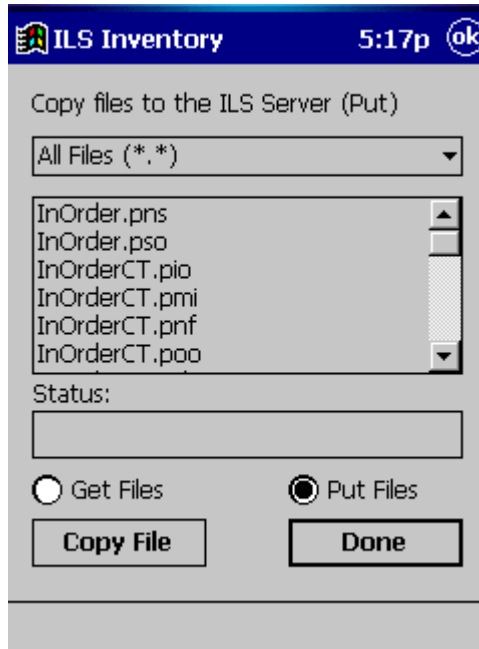
Figure 3-24: Wireless File Transfer Screen

3.9. Hints on Using the PPT 2700/2800

There are no double-clicks on the PPT 2700/2800 unit. All actions are accomplished by a single tap.

If you have not used the PPT 2700/2800 within the configured time, the device will go into Power Save mode. This means that the device will turn off. To turn it back on, press the red power button. You will be returned to the last screen presented prior to shut off.

If you have trouble closing the ILS Inventory Program, tap on the Windows icon in the upper left hand corner of the screen. Tap on the Systems tag and then on the memory icon. Tap on the Running Programs tab. This will show you all of the programs currently running. To close only one program, highlight the program name and tap the Stop button. To stop all programs, simply tap the Stop All button.

Figure 3-25: Running Programs
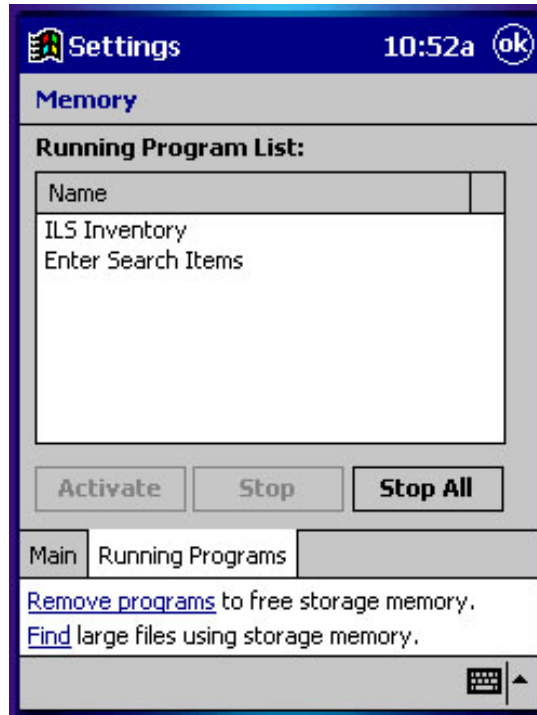
NOTES

Chapter 4 Application Server

The Application Server is the core-processing component of the Intelligent Library System. The Application Server handles multiple functions including the following:

- Storing transactions performed at the Patron Self-Checkout Stations.
- Downloading inventory data from the ILS Handheld Portable Reader.
- Generation of reports.
- Connectivity to the host library circulation system.

In addition, it provides a single station for system configuration and diagnostics. If the host system becomes unavailable, the Application Server has the capability to support automated checkout functions without the host. This is known as Off-Line Processing. This feature is a site-specific option so it may not be available to you. There may be other options not available on your system. Please see your MIS department for further details.

4.1. The Application Server Control Screen
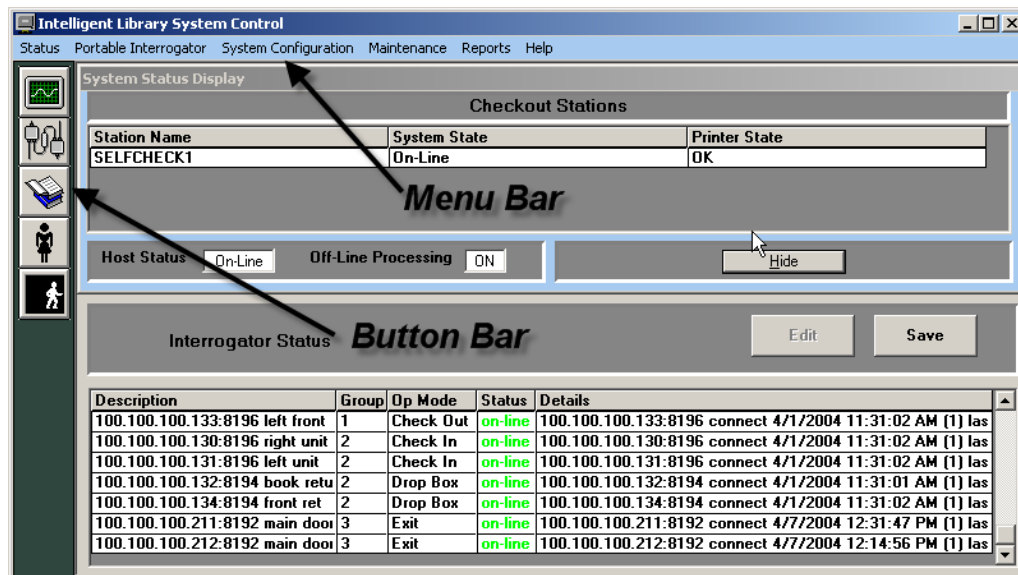
Figure 4-1: Application Server Control Screen

The Application Server Control screen provides current information on the status of the ILS system, the ILS Handheld Portable Reader, and is used to generate reports.

The menu bar lists categories of system features. This is located just under the title bar near the top of the screen. Just point and click on any category to view a list of selections. Navigate to the option that represents the system function you want perform and click that function. Some options may be grayed out which means that the function is not available.

The button bar located on the left side of the screen provides short-cut buttons to the most commonly used system features. These buttons have a graphical face and allow you to choose a

system feature without using the menu bar. If you move the mouse pointer over a button, a pop-up screen (fly-by-help) will display describing what system function each button will perform.

4.2. System Status

There are multiple ways to navigate to the System Status Screen. The first is by clicking **System Status** button as shown in **Figure 4-2: System Status Button**.
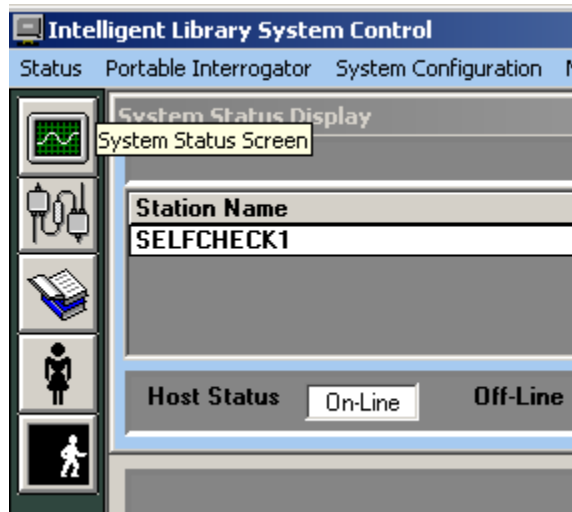
Figure 4-2: System Status Button

The second way to navigate to the System Status Screen is to select the **Status** pull-down menu, then select the **System Status Display** option as shown in **Figure 4-3: System Status Selection**.
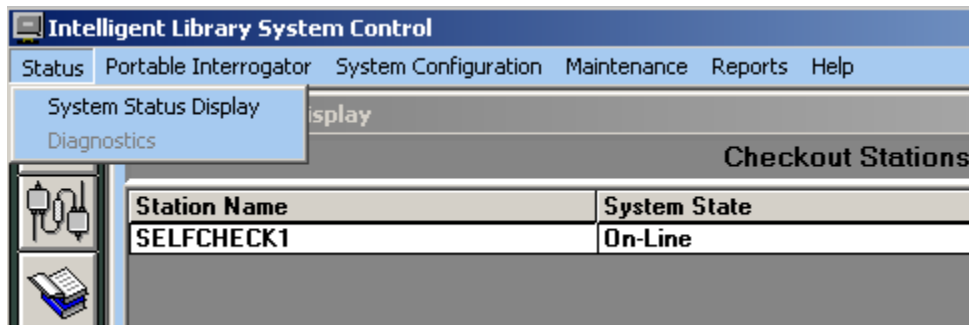
Figure 4-3: System Status Selection

The System Status screen (Figure 4-4) gives you the capability to view the Station Name, the System State, and the Printer State.

The Station Name refers to each location of a Checkout Station.

The System State identifies if the Station is on-line or off-line.

The Printer State informs you of the printer status, for example OK, out of paper, I/O error, etc. (I/O error is a general printer error which could indicate there is a paper jam, loss of power to the printer, etc.).

Just beneath the Checkout Stations status is the Host Status, which tells you if the host (library circulation system), is on-line or off-line.

The Off-line Processing feature allows libraries to configure the Application Server and Patron Self-Checkouts to continue to operate while offline with the library's circulation system. While the circulation system is offline, the Application Server records significant events. These events are reported to the circulation server when synchronization occurs. At the time of synchronization, the Due Date is sent to the circulation server. When off-line processing is turned on, the word ON appears next to Off-Line Processing, as shown in Figure 4-4. The feature is turned on or off by Checkpoint field service personnel by setting a table parameter on the Application Server. If using the Bridge Interface (described earlier), off-line processing should never be turned on at the same application server.

The hide button allows you to hide or show the system status display. The lower portion of the screen shows the Exit Alarm Display. The display lists up to 200 exit alarms by Date\Time, Exit Location, and by Item Identifier. The display will always show the most recent alarm first.

Figure 4-4: System Status Screen

4.3. Task Scheduler

Use Task Scheduler to schedule Checkout Cache Synchronization and Host Reconnections to be performed automatically at any time of day. The menu selection is shown in the figure below.
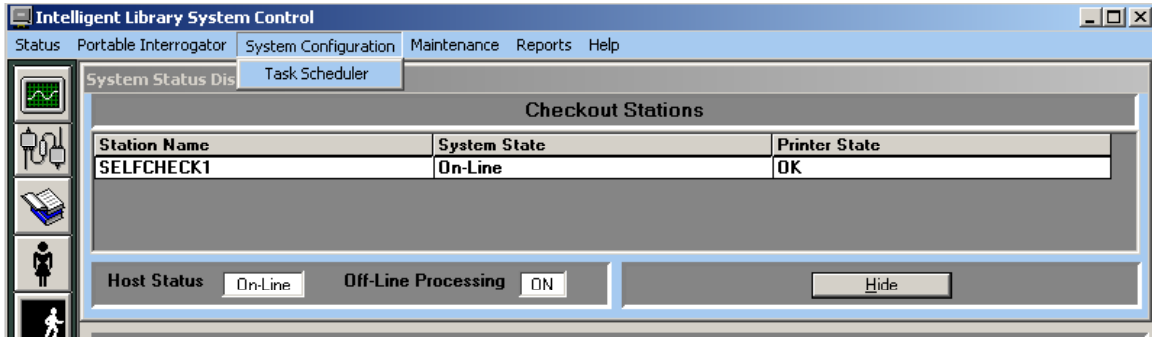
Figure 4-5: Task Scheduler Navigation

After selecting **Task Scheduler** from the System Configuration pull-down menu, a dialog box is presented with buttons to view the current schedule or to modify the current schedule. Both selections require you to enter a user name and password to continue to the Task Scheduler dialog box. When viewing the current schedule, the user will not be able to make any modifications to the scheduled tasks. **Figure 4-6: Task Scheduler Menu** shows the buttons that are displayed.
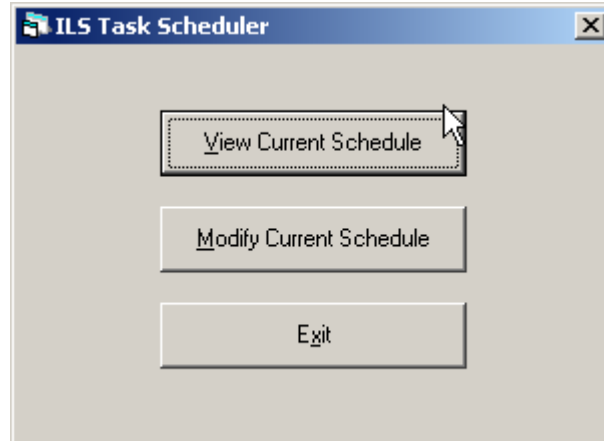
Figure 4-6: Task Scheduler Menu

Figure 4-7: Task Scheduler (Modify) shows the Modify option for the task scheduler. The Task Scheduler itself contains a listing called Scheduled Time for the specified task to be run each day. Leave a day's entry blank to prevent the task from running that day.

Tasks are identified using a Task ID number. Currently the task ID numbers are as follows:

Checkout Cache Synchronization   3200
Host Reconnect   3201

A check box is available to disable execution of the current task. When this box is checked, all scheduled times will be ignored and the task will never run until the box is unchecked.

The Task Period can be set to Weekly/Daily or Monthly. When Monthly is selected a text box will display to accept the day of the month on which the task should be run. A time can then be entered under Scheduled Time.

To accept changes, select **Save**, then **Close** at the bottom of the dialog box. To ignore changes, select **Cancel**.
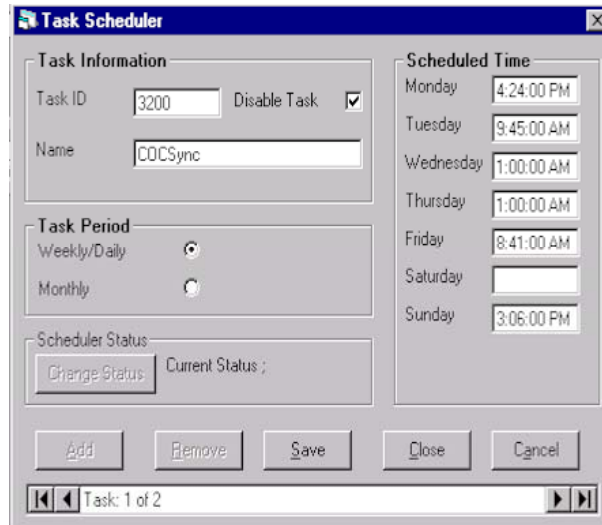
Figure 4-7: Task Scheduler (Modify)

Figure 4-8: Task Scheduler (View Only) shows the View Only option for the Task Scheduler. When reviewing the current schedule, the user will not be able to make any modifications to the scheduled tasks.
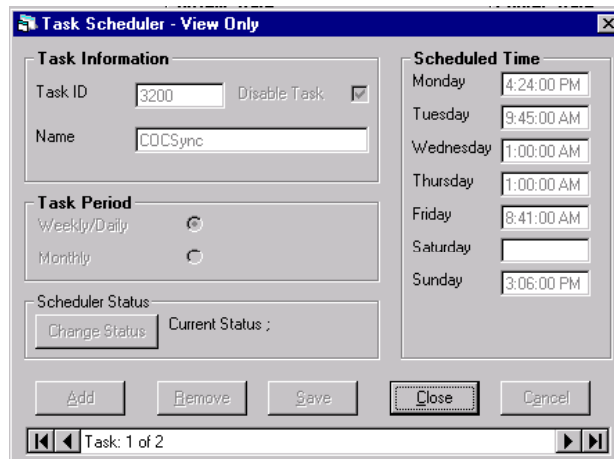
Figure 4-8: Task Scheduler (View Only)

4.4. Inventory Download Operations

The Automated procedure for downloading inventory information from the Handheld Portable Reader is enabled by the automatic transfer mode. This provides an automatic method of starting the download sequence without initiation from the Handheld Portable Reader Operations Screen. The transfer is automatically started by properly docking a Handheld Portable Reader base in the docking station. The figure below illustrates the beginning of a transfer sequence.
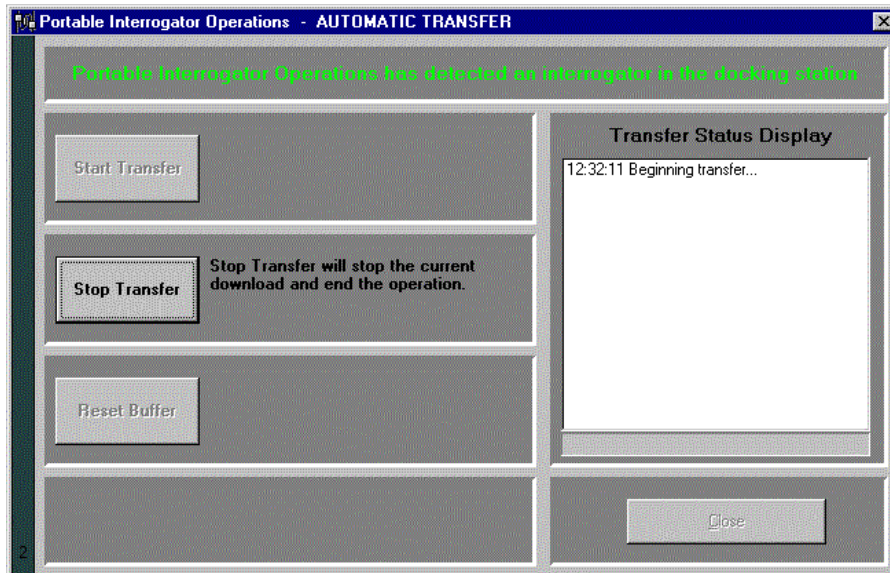
Figure 4-9: Handheld Portable Reader Operations Screen - Automatic Transfer

Downloading information automatically from the Handheld Portable Reader requires little active participation by the Library staff. You can monitor the automatic downloading process by watching the corresponding screens on the Application Server monitor.

Once the Handheld Portable Reader is properly docked, the screen will display a message recognizing the proper docking. By looking at the Transfer Status Display on the right side of the screen you can follow the transfer process step by step.

The screen shows the information transfer process beginning, the transfer process in progress, and the completion of the transfer process. Upon completion of the file transfer from the Handheld Portable Reader to the Application Server, the file is normally converted to the inventory file format used by the Circulation System. It is then copied to a directory where it is available for the Circulation System's Inventory application to copy and process (using FTP). Additionally, since the entire process is done automatically, it will show you that the Handheld Portable Reader has been cleared of data and is being reset for future use. Click **Close** to remove the *Handheld Portable Reader Operations* screen.

4.5. Reports

This section includes information on the ILS reports available through the Application Server. The following reports are available:

- Checkout Discrepancy Report (off-line processing) (Section 4.5.1)
- Patron Discrepancy Report (off-line processing) (Section 4.5.2)
- Generic Report Generation (Section 4.5.3)
- Exit Alarm Reporting (Section 4.5.4)
- Check In Exception Reporting (Section 4.5.5)

4.5.1. Checkout Discrepancy Reporting (off-line processing)

This report provides a list of off-line checkout events that were rejected by the host circulation system when returned to on-line operation. There are two ways to get to the **Checkout Discrepancy Report**. The first is by clicking on the **Checkout Discrepancy** button as shown in the figure below.
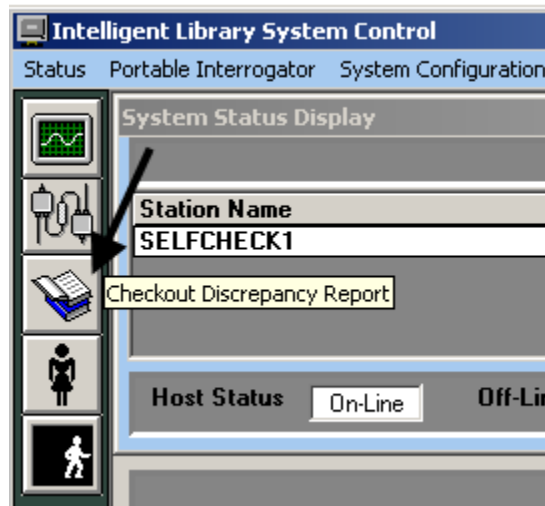
Figure 4-10: Checkout Discrepancy Report Button

The second way to get to the **Checkout Discrepancy Report Screen** is to select **Reports** from the pull-down menu, and then select **Checkout Discrepancy** as shown in **Figure 4-11: Checkout Discrepancy Report Menu**.
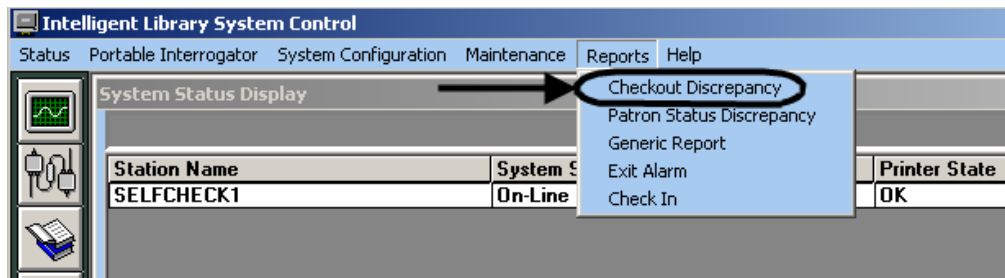
Figure 4-11: Checkout Discrepancy Report Menu
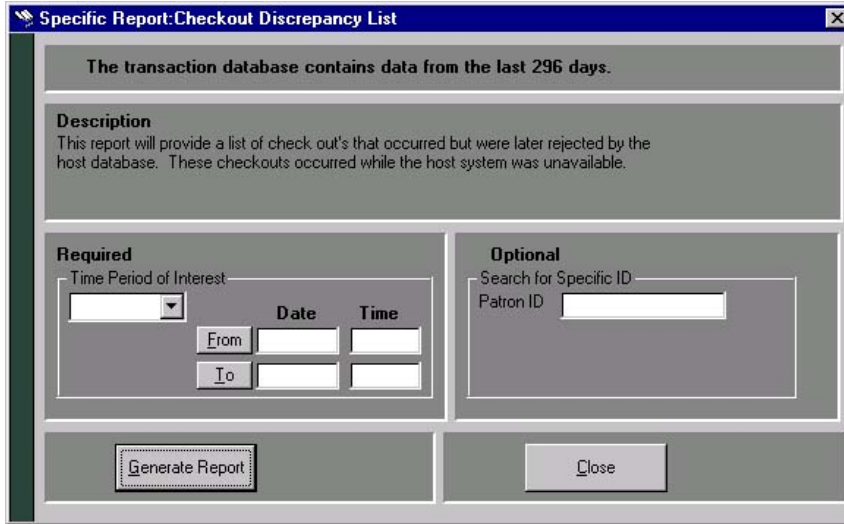
Figure 4-12: Checkout Discrepancy List Screen

The generated report can be filtered based on a number of criteria fields including time period and ID. However, if the Time Period of Interest fields are blank or not specified, the report can't be generated. There are three methods you can use to create a report:

First method:

1. Choose the time period of interest by clicking on the drop down button. Choices are Today, Yesterday, This Week, Last Week, This Month, Last Month, and All Data.

2. The **From** and **To** date will automatically display. You can key in the time or leave it blank. If you leave it blank, the default time will be used:

3. From = 12:00:00 A.M.

4. To = 11:59:59 P.M.

5. Click on the Generate Report button.

Second method:

1. Click **From** and the calendar form displays.

Figure 4-13: Calendar

2. Select the month and year using the drop down buttons.

3. Select the day from the calendar table.

4. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

5. You can click on the Now button if you want to use the current time.

6. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

7. Verify the selection shown next to **From**.

8. Click **To** and the calendar form displays. As shown above.

9. Select the month and year from the drop down buttons.

10. Then select the day from the calendar table.

11. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

12. You can click on the Now button if you want to use the current time.

13. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

14. Verify the selection shown next to **To**.

15. Click on the Generate Report button.

Third method:

1. Key in the **From** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

2. Key in the **To** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

3. Click on the Generate Report button.

   Note: Any combination of the methods may be used.

To create a report based on a specific Patron ID do the following:

1. Type in the Patron ID in the Search for Specific ID.

2. Click on the Generate Report button.

Figure 4-14: Sample Checkout Discrepancy Report

Field Name	Possible Field Data	Data Description
Patron Identifier	ID Number	The patron ID number in this transaction.
Transaction Date	Date/Time	Date and time of the transaction.
Item Identifier	ID Number	The item number in this transaction.
Station Name	Name of Station	Station where the transaction occurred.
Final Transaction Date	Date/Time	The date and time that an off-line incomplete transaction was synchronized.
Screen Message	Text message	Message return from the host for this transaction.

4.5.2. Patron Discrepancy Reporting (off-line processing)

This report provides a list of off-line patron status events that were rejected by the host circulation system when returned to on-line operation. There are two ways to get to the **Patron Discrepancy Report**. The first is by clicking the **Patron Discrepancy** button as shown in the figure below.
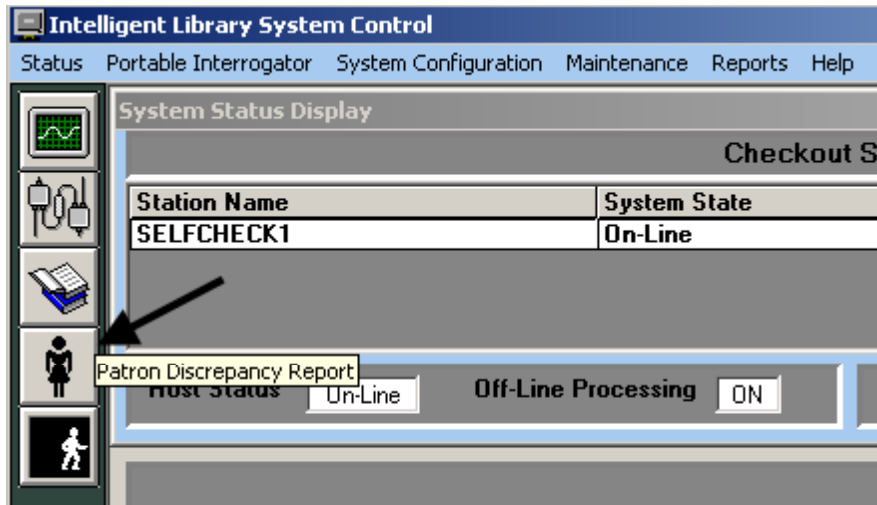
Figure 4-15: Patron Discrepancy Report Button

The second way to get to the **Patron Discrepancy Report Screen** is to select the **Reports** pull-down menu, and then select **Patron Status Discrepancy** as shown in **Figure 4-16: Patron Discrepancy Report Menu**.
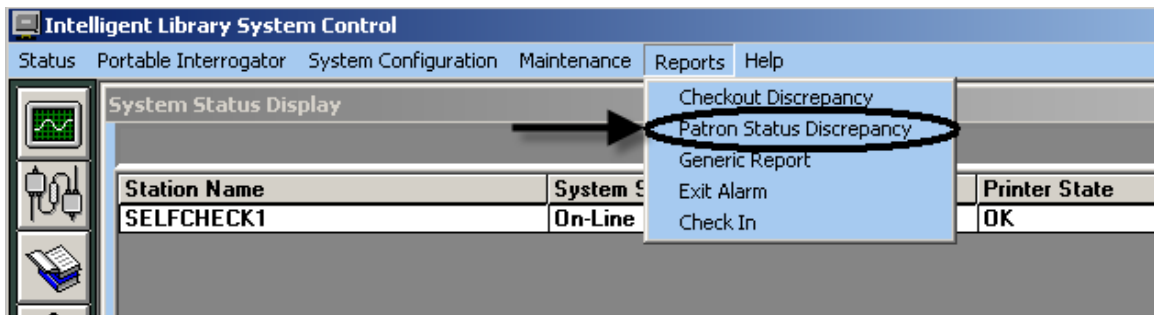
Figure 4-16: Patron Discrepancy Report Menu
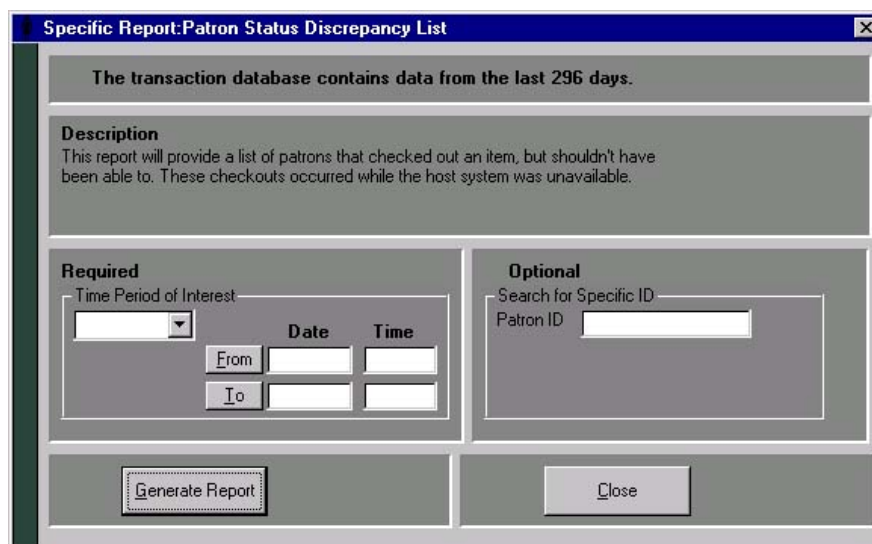
Figure 4-17: Patron Status Discrepancy List Screen

The generated report can be filtered based on a number of criteria fields including time period and ID. However, if the Time Period of Interest fields are blank or not specified, the report can't be generated. To create the report, do the following: There are three methods you can use to create a report:

First method:

1. Choose the time period of interest by clicking on the drop down button. Choices are Today, Yesterday, This Week, Last Week, This Month, Last Month, and All Data.

2. The **From** and **To** date will automatically display. You can key in the time or leave it blank. If you leave it blank, the default time will be used:

3. From = 12:00:00 A.M.

4. To = 11:59:59 P.M.

5. Click on the Generate Report button.

Second method:

1. Click **From** and the calendar form displays.

Figure 4-18: Calendar

2. Select the month and year using the drop down buttons.

3. Then select the day from the calendar table.

4. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

5. You can click on the Now button if you want to use the current time.

6. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

7. Verify the selection shown next to **From**.

8. Click **To** and the calendar form displays. As shown above.

9. Select the month and year from the drop down buttons.

10. Then select the day from the calendar table.

11. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

12. You can click on the Now button if you want to use the current time.

13. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

14. Verify the selection shown next to **To**.

15. Click on the Generate Report button.

Third method:

1. Key in the **From** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

2. Key in the **To** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

3. Click on the Generate Report button.

   Note: Any combination of the methods may be used.

To create a report based on a specific Patron ID do the following:

1. Type in the Patron ID in the Search for Specific ID.

2. Click on the Generate Report button.

Figure 4-19: Sample Patron Discrepancy Report

Field Name	Possible Field Data	Data Description
Patron Identifier	ID Number	The patron ID number in this transaction.
Transaction Date	Date/Time	Date and time of the transaction.
Station Name	Name of Station	Station where the transaction occurred.
Final Transaction Date	Date/Time	The date and time that an off-line incomplete transaction was synchronized.
Screen Message	Text message	Message return from the host for this transaction.

4.5.3. Generic Report Generation

The Application Server stores all activity generated by the system internally as a transaction. A transaction is logged for each significant activity such as patron validation, checkout, checkin, and an exit alarm. It is the responsibility of the system's Transaction Coordinator to store the transactions in the system database. Reports can be generated from these records to list specific transactions and transaction counts. A Generic Report generator allows custom reports to be created as needed.

Navigation to the Generic Report Screen is accomplished by selecting the Reports Menu and then the Generic Report item as illustrated in the figure below.
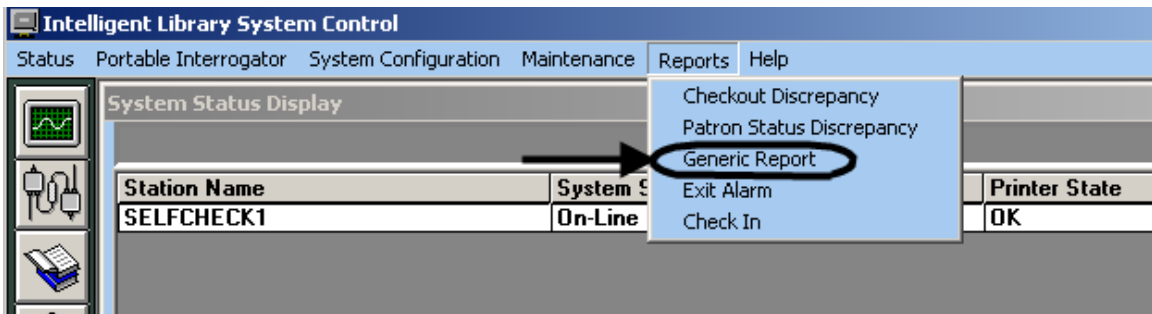
Figure 4-20: Generic Report Menu

Figure 4-21: Generic Report Screen

Figure 4-21: Generic Report Screen shows the selections available for this report. The number of days of activity is displayed at the top of the screen just under the title bar. In the main body of the screen, you are instructed to click the down arrow for each category and highlight your choice. Each category is described below.

Category	Options
Select Time Range	You can narrow your report to one of the time periods listed or leave it set to all available.
Station	You can choose a specific Patron Self-Checkout Station or Exit Alarm or choose All Stations.
Type of Transaction	Checkouts, Patron Information or All Types
Online/Offline transactions	Online, Offline or Both
Desired report	Here you will choose whether you want a list of the specified transactions or a count.

The Select Time Range must be filled in order to generate a report. However, if the Select Time Range fields are blank or not specified the report can't be generated. There are three methods you can use to create a report:

First method:

1. Choose the time period of interest by clicking on the drop down button. Choices are Today, Yesterday, This Week, Last Week, This Month, Last Month, and All Data.

2. The **From** and **To** date will automatically display. You can key in the time or leave it blank. If you leave it blank, the default time will be used:

3. From = 12:00:00 A.M.

---

4. To = 11:59:59 P.M.

Second method:

1. Click **From** and the calendar form displays.

Figure 4-22: Calendar

2. Select the month and year using the drop down buttons.

3. Select the day from the calendar table.

4. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

5. You can click on the Now button if you want to use the current time.

6. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

7. Verify the selection shown next to **From**.

8. Click **To** and the calendar form displays. As shown above.

9. Select the month and year from the drop down buttons.

10. Then select the day from the calendar table.

11. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

12. You can click on the Now button if you want to use the current time.

13. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

14. Verify the selection shown next to **To**.

Third method:

1. Key in the **From** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

2. Key in the **To** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

   Note: Any combination of the methods may be used.

You also have the option to include a Patron ID or Item ID to narrow your report even further. Type the ID in the appropriate box before clicking the Generate button. Your report will now include only transactions specific to that ID.

Note: Patron and Item IDs are optional and do not have to be included in a report.
Once you have made your choices, click the Generate button.

Figure 4-23: Sample Generic Report

Field Name	Possible Field Data	Data Description
Transaction Date	Date/Time	Date and time of the transaction.
Station Name	Name of Station	Station where the transaction occurred.
Status	Completed	The transaction was successfully completed on-line.
	Offline-Complete	The transaction was an off-line incomplete transaction that was subsequently successfully completed online during off-line synchronization.
	Offline-Incomplete	The transaction was not completed on-line.

	Discrepancy	The transaction was an off-line incomplete transaction that was subsequently rejected during off-line synchronization.
OffLine-OnLine	Offline	Transaction completed off-line.
	OnLine	Transaction completed on-line to the host system.
Transaction Type	Patron Status	Patron scans their ID card at a Patron Self-Checkout Station.
	Checkin	An item automatically checked in to the circulation system.
	Checkout	An item is scanned at the Patron Self-Checkout Station.
	ItemStatus	An item is scanned at the circulation desk.
	ExitAlarm	An item generated an alarm at an exit because it was not checked out.
Final Transaction Date	Date/Time	The date and time that an off-line incomplete transaction was synchronized.
Item Identifier	ID Number	The item number in this transaction.
Patron Identifier	ID Number	The patron ID numbers in this transaction.

You have a few options to view the records on the screen, print them, or return to the previous screen.

SCROLL: You can use the scroll bar to view all of the records.
PRINT: You can print this report by clicking the Print button and entering the number of copies you wish.
RETURN: Click the Close button to return to the Generic Report Screen.
Expand Report Columns: Information in each column may be wider than the column width. You can expand the column width by positioning the mouse point over the column divider next to a column heading. When the resize pointer displays, left click and move the mouse to the desired width.
Copy and Paste: You can copy an ID to include in another report by left clicking the ID, right click and select Copy. Paste by right clicking and select Paste.

4.5.4. Exit Alarm Reporting

This report provides a list of item identifiers that have caused an alarm at a specific exit location. There are two ways to get to the Exit Alarm Report. The first is by clicking on the **Exit Alarm Report** button shown in **Figure 4-24: Exit Alarm Report Button**.
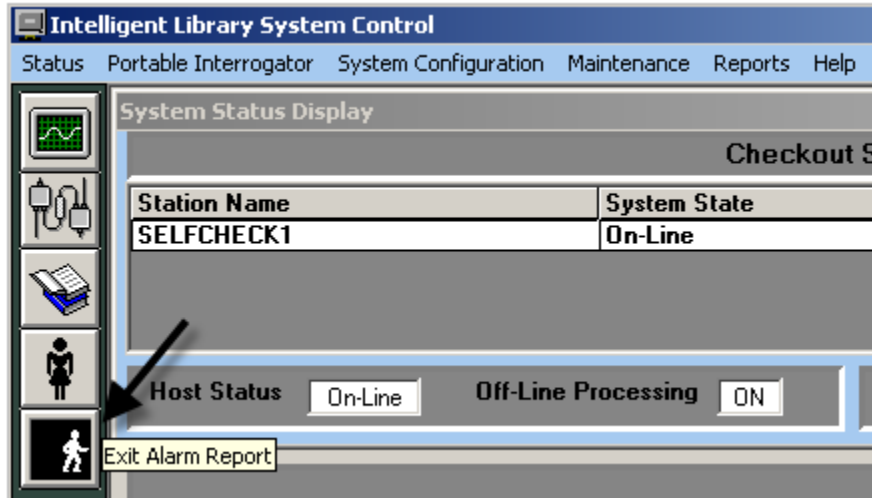
Figure 4-24: Exit Alarm Report Button

The second way to get to the **Exit Alarm Report Screen** is to select **Reports** pull-down menu and then select **Exit Alarm** as shown in the figure below.
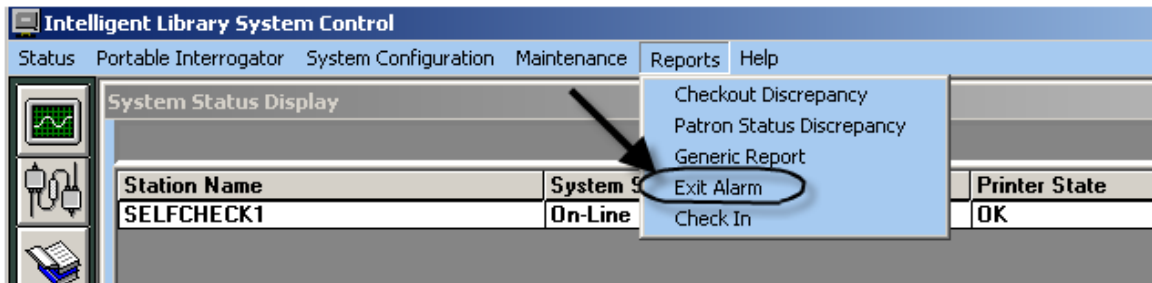
Figure 4-25: Exit Alarm Report Menu
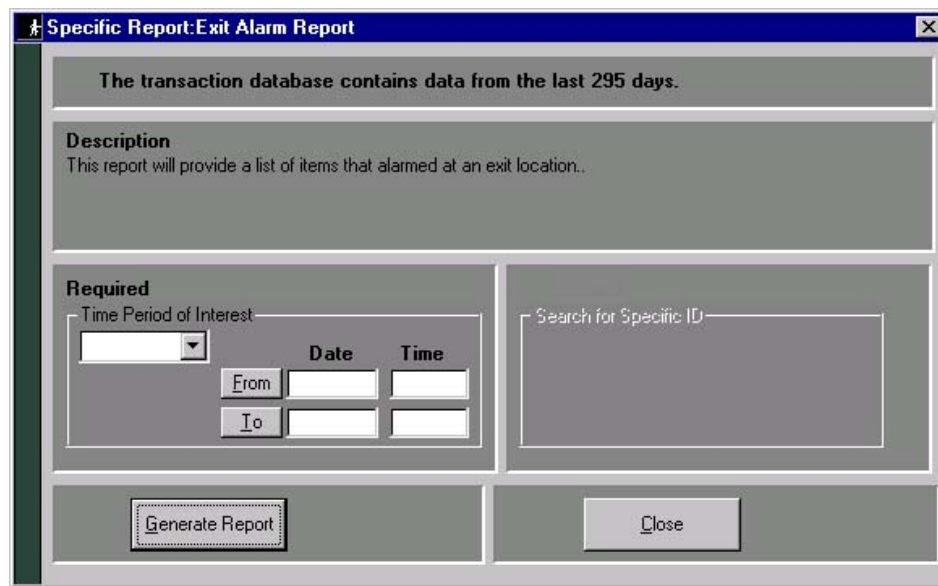
Figure 4-26: Exit Alarm Report Screen

The generated report can be filtered based on a time period. However, if Time Period of Interest fields are blank or not specified, the report can't be generated. There are three methods you can use to create a report:

First method:

1. Choose the time period of interest by clicking on the drop down button. Choices are Today, Yesterday, This Week, Last Week, This Month, Last Month, and All Data.

2. The **From** and To date will automatically display. You can key in the time or leave it blank. If you leave it blank, the default time will be used:

3. From = 12:00:00 A.M.

4. To = 11:59:59 P.M.

5. Click on the Generate Report button.

Second method:

1. Click **From** and the calendar form displays.

Figure 4-27: Calendar

2. Select the month and year using the drop down buttons.

3. Select the day from the calendar table.

4. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

5. You can click on the Now button if you want to use the current time.

6. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

7. Verify the selection shown next to **From**.

8. Click **To** and the calendar form displays. As shown in Figure 4-27: Calendar.

9. Select the month and year from the drop down buttons.

10. Select the day from the calendar table.

11. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

12. You can click on the Now button if you want to use the current time.

13. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

14. Verify the selection shown next to **To**.

15. Click on the Generate Report button.

Third method:

1. Key in the **From** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

2. Key in the **To** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

3. Click on the Generate Report button.

   Note: Any combination of the methods may be used.

Figure 4-28: Sample Exit Alarm Report

Field Name	Possible Field Data	Data Description
Transaction Date	Date/Time	Date and time of the transaction.
Item Identifier	ID Number	The item number in this transaction.
Exit Location	Name of the exit and/or IP Address	Name of the exit

---

4.5.5.   Check In Exception Reporting

This report provides a list of exceptions that occurred when patrons returned materials. This report allows the tracking of items that failed check in, as well as items that require special handling. You can get to the **Check In Exception Report** by selecting **Reports** from the pull-down menu, and then selecting **Check In** as shown in the figure below.
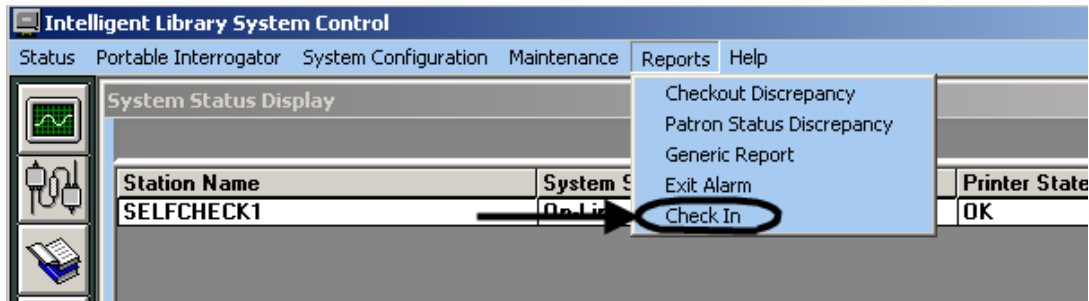
Figure 4-29: Check In Exception Report Menu
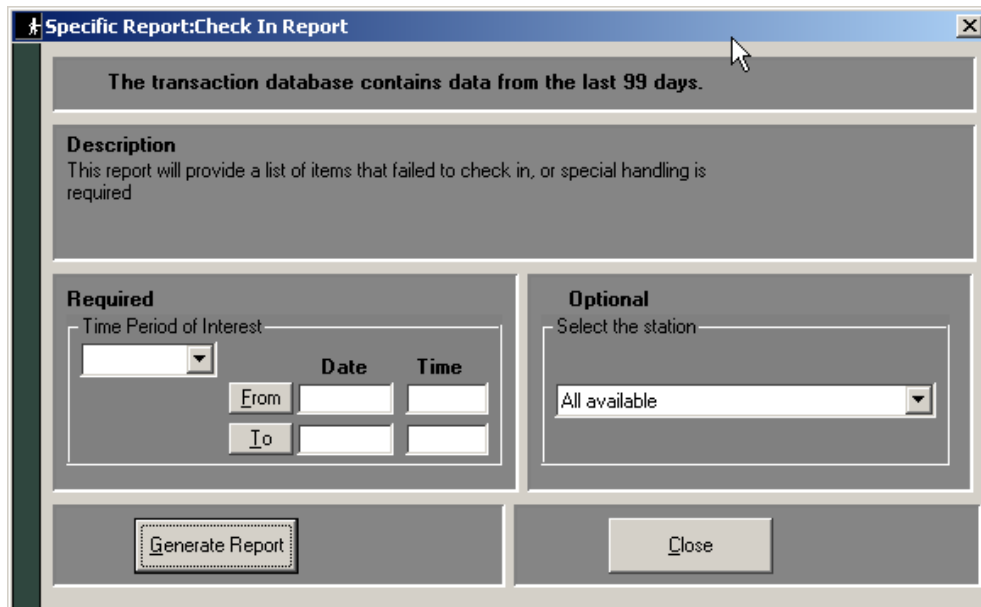
Figure 4-30: Check In Report Screen

Figure 4-30: Check In Report Screen shows the selection criteria options available for this report. The generated report can be filtered based on a time period, date range, and check in station. However, if Time Period of Interest fields are blank or not specified, the report can't be generated. There are three methods you can use to create a report:

First method:

1. Choose the time period of interest by clicking on the drop down button. Choices are Today, Yesterday, This Week, Last Week, This Month, Last Month, and All Data.

2. The **From** and **To** date will automatically display. You can key in the time or leave it blank. If you leave it blank, the default time will be used:

3. From = 12:00:00 A.M.

4. To = 11:59:59 P.M.

Second method:

1. Click **From** and the calendar form displays.

Figure 4-31: Calendar

2. Select the month and year using the drop down buttons.

3. Select the day from the calendar table.

4. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

5. You can click on the Now button if you want to use the current time.

6. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

7. Verify the selection shown next to **From**.

8. Click **To** and the calendar form displays. As shown above.

9. Select the month and year from the drop down buttons.

10. Then select the day from the calendar table.

11. Specify the time at the upper right hand corner of the form. You can key in the time or select the time by pressing the up-down arrow buttons at the end of the field.

12. You can click on the Now button if you want to use the current time.

13. Click on **OK** to confirm the changes or the Cancel button to cancel the changes.

14. Verify the selection shown next to **To**.

Third method:

1. Key in the **From** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

2. Key in the **To** date or a combination of date and time. Date formats can use 2 or 4 digit years: (MM/DD/YY or MM/DD/YYYY). Time should be entered using the 12-hour format: (HH:MM AM or PM).

   Note: Any combination of the methods may be used.

You also have the option to include a Patron ID or Item ID to narrow your report even further. Type the ID in the appropriate box before clicking the Generate button. Your report will now include only transactions specific to that ID.

Note: Patron and Item IDs are optional and do not have to be included in a report.
Once you have made your choices, click the Generate button.

Figure 4-32: Sample Check In Report

Field Name	Possible Field Data	Data Description
Transaction Date	Date/Time	Date and time of the transaction.
Check-in Location	Name of location	Location of the check-in station.
Item Id	ID Number	The item identifier number in this transaction.
Title	Item title	Title of the item checked-in.
Location	Name of location	Location of check-in.
Checked-In	Y	Item was checked-in.
	N	Item was not checked-in.
OffLine-OnLine	Offline	Transaction completed off-line.

	OnLine	Transaction completed on-line to the host system.
Alert	Y	An exit alarm was issued.
	N	An exit alarm was not issued.
Screen Message	Text of Message	The specific error message received from the host for this transaction.

You have a few options to view the records on the screen, print them, or return to the previous screen.

SCROLL: You can use the scroll bar to view all of the records.
PRINT: You can print this report by clicking the Print button and entering the number of copies you wish.
RETURN: Click the Close button to return to the Generic Report Screen.
Expand Report Columns: Information in each column may be wider than the column width. You can expand the column width by positioning the mouse point over the column divider next to a column heading. When the resize pointer displays, left click and move the mouse to the desired width.
Copy and Paste: You can copy an ID to include in another report by left clicking the ID, right click and select Copy. Paste by right clicking and select Paste.

4.6. Maintenance

4.6.1. Purge

Note: The following ILS functions can cause unpredictable behavior or cause the system to go offline if used inappropriately. It is recommended that only qualified system administrators make use of them. It is suggested that you backup the database before doing the purge (**7.1 Transaction Database Backup**). Purges should normally be performed during non-circulation hours.

The Purge option clears all records from the transaction database that are older than a configurable number of days. **Figure 4-33: Purge Navigation** shows how to navigate to the Purge option. **Figure 4-34: End Purge** shows the dialog box that is displayed after the Purge is completed.
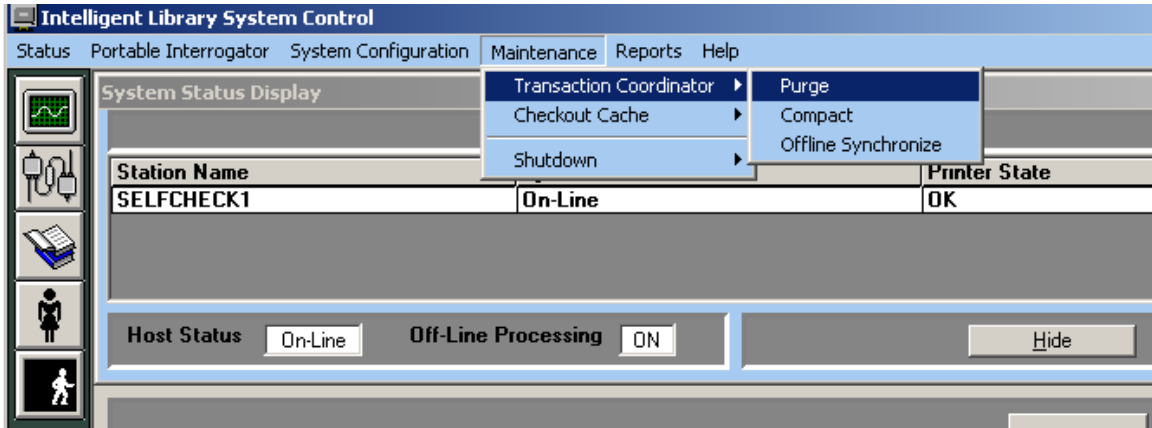
Figure 4-33: Purge Navigation
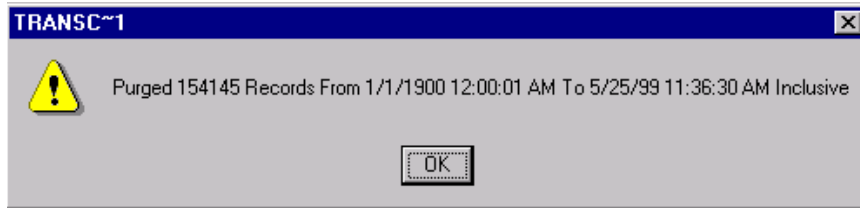
Figure 4-34: End Purge

4.6.2. Checkout Cache Synchronize

The Checkout Cache Synchronize option compares and reconciles the system's internal cache of recorded checked out items with the host system. **Figure 4-35: Synchronize Navigation** shows how to navigate to the Checkout Cache Synchronize option.

A username and password must be entered in order to synchronize the Checkout Cache. The user must then navigate to the file provided by the Host that the Checkout Cache will be synchronized against. The file is typically located in `InetPub\FTPRoot.`

Note: This procedure is normally automated. The system will be offline during the operation.
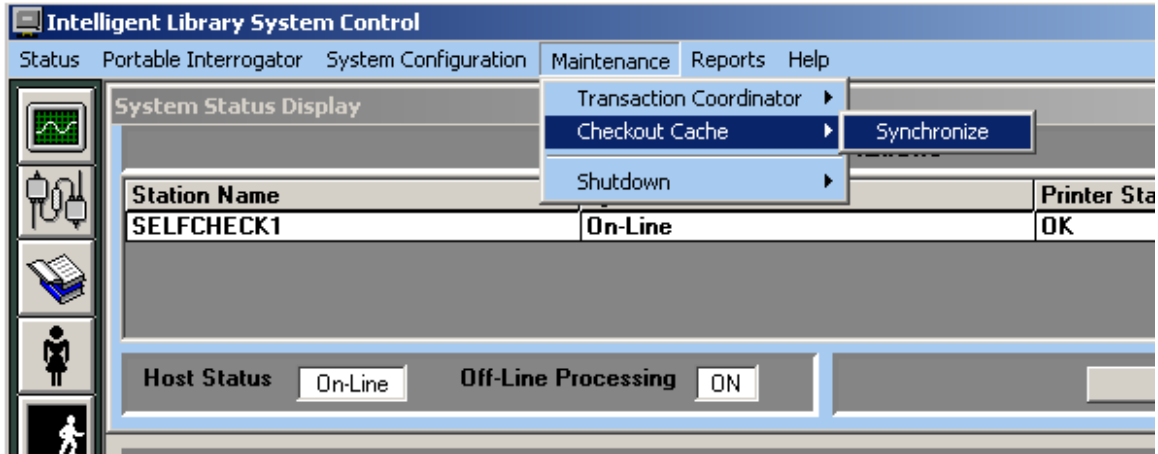
Figure 4-35: Synchronize Navigation

4.7. Miscellaneous

4.7.1. Shutdown Button

The Shutdown button shuts down the Application Server. In order for the Application Server to remain in a shutdown state, all Patron Self-Checkout Stations should be shutdown prior to shutting down the Application Server.
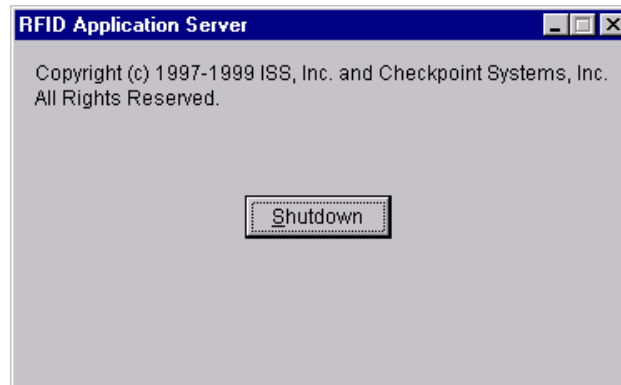
Figure 4-36: Shutdown Button

4.7.2. Help About

The Help About option is used to display copyright information. The figure below shows how to navigate to the Help About screen.
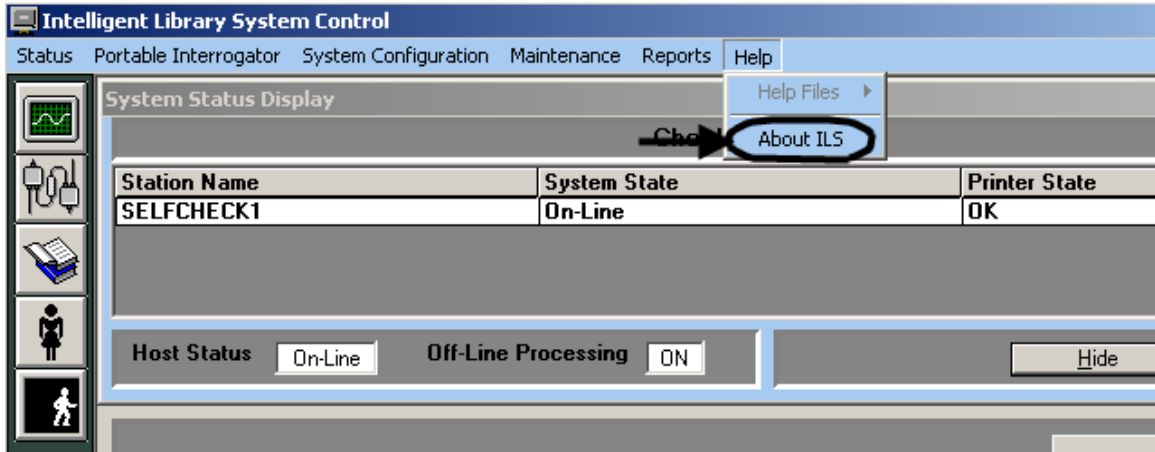
Figure 4-37: Help About Navigation

4.7.3. System Info Button

The System Info button provides a detailed listing of all components and their versions.
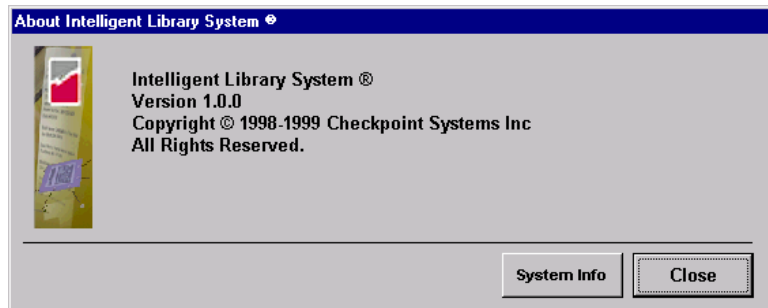
Figure 4-38: Help About Screen

4.7.4. Offline Transactions Synchronize

The Offline Transactions Synchronize button is used for synchronizing off-line transactions with the host system. It is not available on systems that do not support off-line processing.
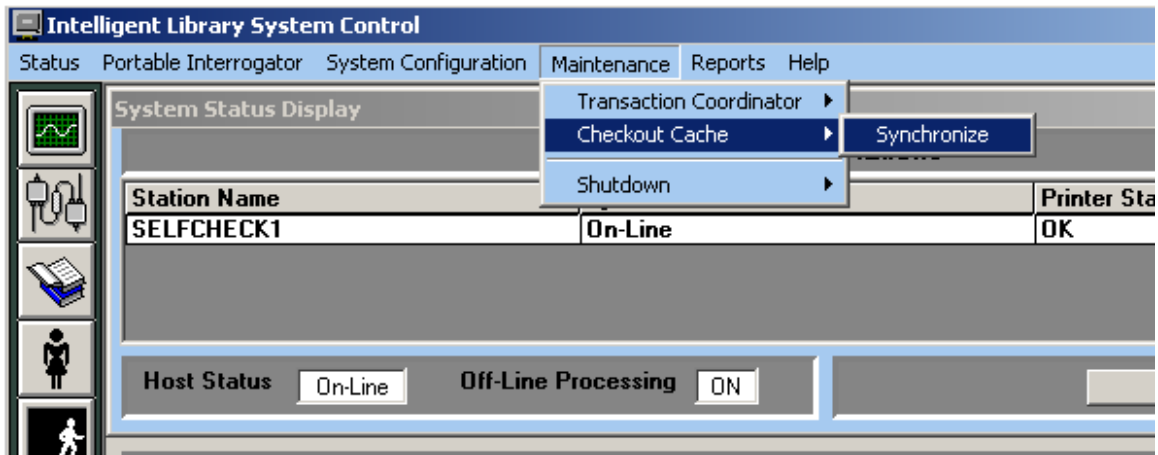
Figure 4-39: Transaction Coordinator Offline Synchronization Navigation

4.7.5. Shutdown Checkout Stations

The Shutdown Checkout Stations button remotely shuts down all the Patron Self-Checkout Stations.
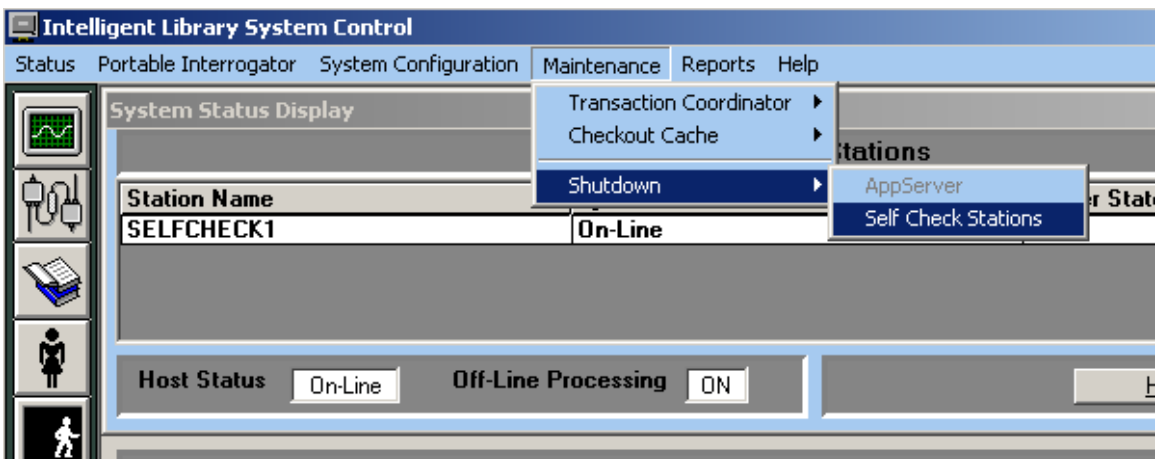
Figure 4-40: Shutdown Patron Self-Checkout Stations

4.8. Installing a Printer

Printer installation procedures will vary according to the make and model of printer being installed. The best procedure is to follow the directions included with the printer. Usually your printer will come with an installation program on a floppy disk or CD-ROM that will automatically install the appropriate printer drivers and software. Otherwise, most printer installations will proceed as follows:

3. Double-click on My Computer.

4. Double-click on Printers.

5. Double-click on Add Printer.

6. Make sure My Computer is selected. Click **Next**.

7. Select the checkbox next to LPT1. Click **Next**.

8. From the next dialog box you can click on Have Disk if you have drivers for you printer in a specific location. Or, you can select the make and model of your printer from the listings.

9. Follow the onscreen directions to complete the installation.

Chapter 5 Tagging Procedures

This section provides instructions on where to place the Circulation Circuit (tag) and how to determine what type of tag to use for books, CDs, audio materials, and kit materials.

For information on the optional Circulation Circuit Programming Station, refer to the Circulation Circuit Programming Station User Manual.

5.1. Tagging Book Materials

When tagging book materials, use the following steps:

1. Place the Circulation Circuit on a non-text area of a page closest to the front cover, horizontally one-inch from the spine and vertically centered on the page.

   Avoid metallic covers. If it is necessary to use a metallic cover, photocopy and replace the cover.

2. Cut a minimum of 3 x 3 section from the back of the cover and place the circulation circuit in this section.

   Avoid placing the Circulation Circuit over the EAS tags.

   Your Cover Label options are plain and single barcode.
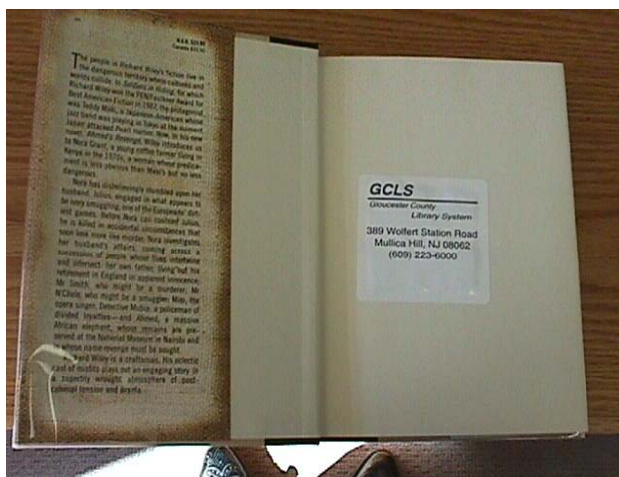
Figure 5-1: Tagging Book Materials

5.2. Tagging Video Materials

When tagging Video Materials, use the following steps:

The preferred location is on the front inside cover both centered horizontally and vertically.

If the video label is metallic, place the circulation circuit in the lower front inside cover of the case.

If the card stock is metallic, photocopy and replace the card stock.

Your Cover Label options are plain and double barcode
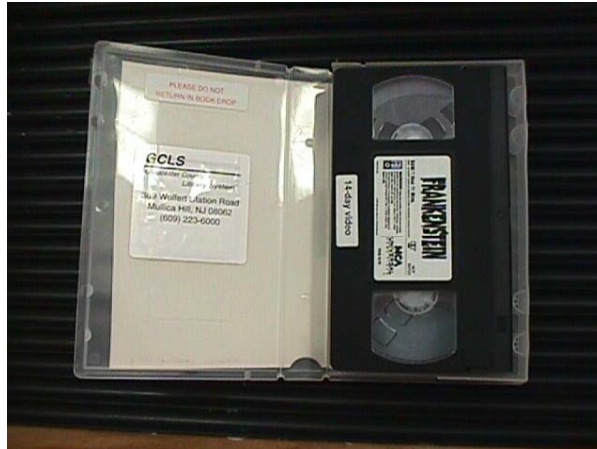
Figure 5-2: Tagging Video Materials

5.3. Tagging CD Materials with a Preprogrammed Circulation Circuit

When tagging CD Materials with a preprogrammed circulation circuit, use the following steps:

1. Disassemble the CD and place the circulation circuit with the printed barcode cover label in the lower right corner.

Figure 5-3: Tagging CD Materials with Preprogrammed Circulation Circuit

2. Reassemble the CD.

3. Place the second peelable barcode on the back of the CD case.
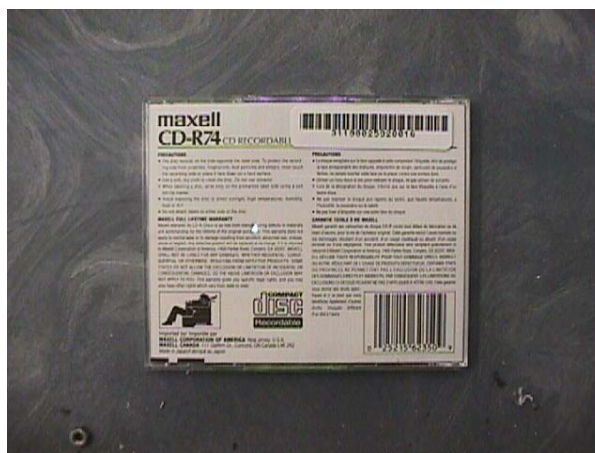
Figure 5-4: Tagging CD Materials with Preprogrammed Circulation Circuit

5.4. Tagging CD Materials with Circulation Circuit Programmed On-Site

When tagging CD Material with Circulation Circuit Programmed On-Site, use the following steps:

1. Disassemble CD and place the circulation circuit with plain cover label in the lower right corner

2. Reassemble CD

   Your cover label options are plain and the recommended application is material with existing barcode labels.

5.5. Tagging Audio Materials

When tagging Audio Materials, use the following steps:

The preferred location for the circulation circuit is on the inside front cover, centered horizontally and vertically.

1. For audio cases that contain tapes on both inside sections of the audio case. Remove the card stock from the outside sleeve of the front cover.

2. Attach the circulation circuit in the sleeve and replace the card stock

3. If the card stock is metallic, photocopy and replace the card stock.

   Your cover labels options are as follows:

Plain - Recommended for materials that have barcodes. The circulation circuits are programmed on-site

Double Barcode - Recommended for new materials. The circulation circuits are pre-programmed.

Figure 5-5: Tagging Audio Materials

5.6. Tagging Kit Materials

When tagging Kit Materials, use the following steps:

- Place the circulation circuit on the outside of the bag or on the most valuable library material in the kit.

    Your cover label options are:

    Plain - Recommended for material that has barcodes. The circulation circuits are programmed on-site.

    Single Barcode - Recommended for new material where the circulation circuit is located on the bag or is easily scanned.

    Double Barcode - Recommended for new materials where the printed barcode on the cover label cannot be scanned.

Figure 5-6: Tagging Kit Materials

NOTES

Chapter 6 Troubleshooting Guide

Consult this document for procedures to follow to correct problems that may arise with various ILS components. Follow the steps in the corresponding Solutions section.

6.1. Patron Self-Checkout Station

Problem
Patron Self-Checkout Station does not recognize a valid patron ID when using the Barcode Scanner...

Solutions

1. Make sure the Patron Self-Checkout Station is at the Patron Entry screen (video depicting a patron ID being scanned). If so, make sure you are using the same reader depicted in the video. The Barcode scanner will beep when it reads a valid barcode. If it does not, go to Recovery Section A.

2. If the scanner still does not recognize the patron ID, the lens might need to be cleaned.

3. If the problem still persists, the scanner may be damaged and might need to be replaced or reconfigured. Proceed to Recovery Section C.

Problem
If you scan an item and nothing happens...

Solutions

1. If the video demonstrating an item checkout stops, the system is processing your request. Wait a few moments.

2. If it hangs more than 1 minute, follow the instructions.

3. If the video demonstration continues without a slight pause after the item is scanned, the Patron Self-Checkout Station did not register your request. Try another item. The item could be damaged or belong to another library.

4. If none of the above solutions work, proceed to Recovery Section A.

Problem
If the Patron Self-Checkout Station freezes on any screen and does not respond to user input for more than one minute...

Solution
➢ Proceed to Recovery Section A.

Problem
If the graphics (pictures or videos) are not displaying or are incorrect...

Solution
➢ Network connection could have been lost while the Patron Self-Checkout Station was starting. Check all network connections to the Patron Self-Checkout Station and AppServer. If the connections are secure, proceed to Recovery Section A.

Problem
If the printer does not print or the Patron Self-Checkout Station printer status reports an error...

Solutions
1. Check to make sure all the receipts are removed from the printer. There may be several receipts waiting to be printed. Remove each one until all the pending receipts are printed.

2. The printer may be out of paper. Refer to the appropriate section of the User Manual for paper replacement procedures. Go to Contact Section.

3. The printer may be jammed. Refer to the appropriate section of the User Manual for paper replacement procedures.

Problem
If the Self-Check (On the ILS Server) Station Status screen indicates a Printer Status of Unknown, when printer is working correctly.

Solutions
1. Rebooting the Patron Self-Checkout Station when print jobs are in the printer queue can cause this problem. A keyboard must be attached to the Patron Self-Checkout Station to perform the procedure to correct this condition:

2. Power off the Patron Self-Checkout Station unit, attach a keyboard, and then power it back on. Be prepared to hold down one of the shift keys on the keyboard during the network logon display. This prevents the Patron Self-Checkout Station program from starting. Select Start (Press the Windows key or Alt-S).

3. Go to Settings/Printers. Select File/Open.

4. Select the print jobs that are on hold, and delete them.

5. Close the various windows, then shut down the Patron Self-Checkout Station. Using the start menu go to Shutdown - Shutdown.

6. Power the unit off, remove the keyboard, then power on the Patron Self-Checkout Station.

Problem
If the Touch Screen does not respond...

Solutions

1. Check the cable on the back of the monitor which is plugged into the connection marked Touch Interface. Make sure this cable is securely plugged in.

2. If all the connections are secure, the Touch Screen may be operating properly but the Patron Self-Checkout Station is not currently accepting input or you are not touching a hot spot that accepts input. If so, proceed to Recovery Section A.

Note: The Touch Screen monitor must be turned on prior to starting the Patron Self-Checkout Station so that it works with Windows. If the monitor is turned on after starting/restarting the Patron Self-Checkout Station, the Touch Screen won't respond to user input. Power loss could also cause the same result.

Problem
If the Patron Self-Checkout Station fails to start during power up and there is a screen displaying some kind of error condition...

Solutions

1. Let the scandisk program run (blue screen) and wait until it is done.

2. Check all network connections on the Patron Self-Checkout Station and AppServer. If they display to be secure, proceed to Recovery Section A.

Note: If the App Server is shut down or loses power, all the Patron Self-Checkout Stations must be shutdown and restarted. See Recovery Section B for details.

6.2. Application Server

Problem
If a Patron Self-Checkout Station(s) is not displaying in the System Status Display...

Solutions

1. Make sure the Patron Self-Checkout Station is started. Look at the Patron Self-Checkout Station and make sure it does not show the message, We are currently unable to provide access to the system. If that message is present, the problem lies with the connection between the Patron Self-Checkout Station and the Application Server, and not with the Application Server itself. Make sure the network is connected and configured properly.

2. If the Patron Self-Checkout Station is behaving normally but is missing from the Station Name listing on the Application Server proceed to Recovery Section B.

Problem
If you have trouble printing a report:

Solutions
➢ Print a test page using the Windows NT Printer Control Panel. If this is unsuccessful, consult Windows NT's Printing Troubleshooting Guide. If the test page prints successfully proceed to Recovery Section C.

Problem
If you receive an error message when running a report...

Solutions
➢ The printer could be out of paper or there may be a problem with the configuration database, proceed to Recovery Section C.

Problem
If Exit Alarms do not occur when they should...

Solutions

1. There may be a problem with the configuration database, proceed to Recovery Section C.

2. Power down and restart each Exit Interrogator. Wait several minutes and trigger an exit alarm. If nothing happens, proceed to Recovery Section B.

Problem
If Host Status shows Offline when it shouldn't...

Solutions

1. The Host Status indicator will only be accurate when a Patron Self-Checkout Station is running and properly connected to the Application Server. If there are no Patron Self-Checkout Stations connected, this field can not be updated.

2. Problems that cause the Offline are,

3. Self-Check problem,

4. Host circulation system is down, and /or

5. Connection problem to host. Need to restart the Patron Self-Checkout Station and make sure the connection wire is connected.

6.3. Exit Interrogator

Problem
If Exit Alarms do not occur when they should...

Solutions

1. Power down and restart the Exit Interrogator. Wait a few minutes and trigger an exit alarm. If nothing happens proceed to Recovery Sections D and B.

2. If the alarm shows up in the Exit Alarm display but no alarm occurs, the configuration of the Exit Alarm groups is not correct. Proceed to Recovery Section C.

Problem
Exit Alarm sound not playing, but an Exit Alarm is displayed on the Application Server...

Solutions
➢ Power down and restart the Exit Interrogator. Wait several minutes and trigger an exit alarm. If nothing happens proceed to Recovery Sections D and B.

Problem
Exit Alarm occurs when item is checked out

Solutions

1. Several conditions could cause this to happen:

2. If the item was checked out while the ILS system was offline to the circulation system and a successful cache sync has not occurred. In this condition, a previously checked out item would alarm following check out and when it is returned.

3. If the item was just checked out using a circulation desk Tag Pad, turn off the Tag Pad used, then turn it back on. If the problem continues, proceed to Recovery Section D, then C.

4. If the patron used the Self-Check, verify that the item was checkout using a circulation terminal. If not, the customer failed to check the item out. If it was checked out, proceed to Recovery Section C.

6.4. Tag Pad

Problem

The Tag Pad reader does not recognize a valid item tag...

Solutions

1. Check to make sure the tag pad is on. The internal ventilation fan should be running. You can feel air through the air vents located on the side of the tag pad if the fan is running. Check to make sure the power cord is connected to the tag pad and plugged into a power source and that all the remaining cable connections are secure. Refer to the connection diagram.

2. If the tag pad is on and the item ID is still not recognized try a different item ID. If several items are not scanned, power off then power on the tag pad. Wait approximately 30 seconds while the software initializes. Try the items again. If you are still having problems proceed to Recovery Section C.

3. LED indication is on the back of the Tag Pad. Blinking green indicates that the Tag Pad is reading the item ID. If no green blinking occurs, turn in off, then on again the Tag Pad. If you are still having problems proceed to Recovery Section C. If green blinking occurs, and no changes occur on the terminal, proceed to Recovery Section D and C.

Problem

Item scanned does not display in the terminal (Barcode Reader).

Solutions

➢ Turn off the Barcode Reader and turn off the Tag Pad. Then, turn on the Tag Pad again and turn on the Barcode Reader. If you are still having problems proceed to Recovery Section C.

Problem

Item entered does not display in the terminal (Non-PC Keyboard Wedge).

Solutions

➢ Turn off the Non-PC Keyboard Wedge and turn back on the power again. If you are still having problems proceed to Recovery Section C.

6.5. Recovery Procedures

Follow the steps outlined in the section to which you were directed. If the recovery steps fail to correct the problems, contact Technical Support.

Section A - Restarting the Patron Self-Checkout Station

1. Power off the Patron Self-Checkout Station by using the power switch located at the rear of the station case.

2. Wait approximately 10 seconds after power off, then power on the station.

3. If scandisk (blue screen) displays after, wait until it automatically scans the disk by itself.

   This will take several minutes to process. It will detect any bad sectors and corrupted files on the hard disk. You should not have to start any of the applications on the Patron Self-Checkout Station. All necessary applications will start automatically.

Section B - Complete System Restart

1. Power off all of the Patron Self-Checkout Stations by using the power switch located at the rear of the station case.

2. Shutdown the RFID Application Server by selecting its icon on the Windows pop-up Task Bar.

3. Locate and click the **Shutdown** button.

4. If any error messages display close them by clicking on **Abort** or **OK** or **Cancel**.

5. Shutdown and restart the server computer.

6. After the RFID Application Server program is restarted, power on the Patron Self-Checkout Stations.

   You should not have to start any of the applications on the Patron Self-Checkout Station. All necessary applications will start automatically.

Section C - Technical Support
➢ Before calling technical support please note the date and time of the problem and what steps you had taken already. Please refer to Contact Section.

Section D - RFID Application Server program Restart

1. Shutdown the Application Server by selecting its icon on the Windows taskbar.

2. Locate and click the **Shutdown** button.

3. If any error messages display close them by clicking on **Abort** or **OK** or **Cance**l

4. Allow the RFID Application Server to automatically be launched by the Patron Self-Checkout Station (should be running).

5. If the program does not start within about a minute, start the RFID Application Server by selecting it in the Start menu under Applications\RFID.
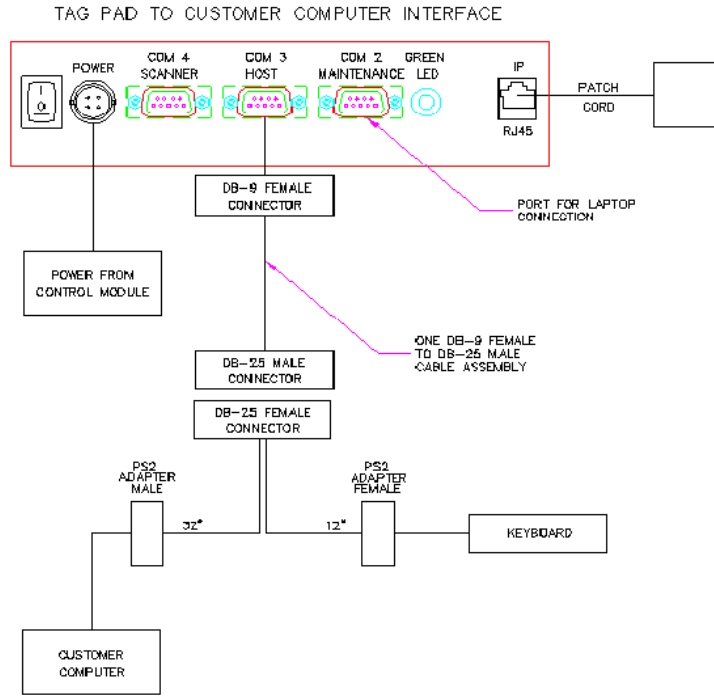
6.6. System Connection Diagram

Figure 6-1: System Connection Diagram

6.7. Contacts

For Technical support:
Checkpoint Technical Support
(800) 257-5540 x4100

The contact and ordering information for the printer paper required for the Patron Self-Checkout Station is:

John Waldron
Instruments & Equipment Co.
800-432-1255
Part #: TRF-82-8
Reference Checkpoint when ordering paper

Chapter 7 System Maintenance Guide

The following section contains detailed instructions for executing various system maintenance tasks.

7.1. Transaction Database Backup

After long periods of use, the ILS Transaction database can become quite large if a purge is not performed regularly. But prior to permanently purging database records and losing them permanently, a backup of the database can be performed to preserve these records as long as they are desired.

The location of the Transaction database varies depending on the directory chosen for installation of the ILS software. The base directory of the ILS software will typically be `C:\RFID`. Wherever the location of the RFID directory, the Transaction database will always be located under `RFID\Applications\DB\TransCoord\`. The filename is `transaction.mdb`.

Creating a temporary backup is recommended prior to performing a purge.

1. Open Windows Explorer.

2. Navigate to the RFID\Applications\DB\TransCoord\ directory.

3. Right-click on `transaction.mdb`. Select Copy.

4. Navigate to the folder you would like to store the backup copy.

5. Right-click on white space within that folder's file listing. Select Paste.

6. It is advisable to rename the backup file. Click on the file to select it.

7. Press F2.

8. Type the new name of the backup file. Make sure you preserve the `.mdb` extension.

9. Press Enter.

7.2. Application Server Tape Backup and Restore

The following serves as a guideline for backing up all files on a server and restoring them as needed. Your steps may vary slightly.

Backup

1. In order to perform a complete backup, the ILS Server application must be exited and you must be logged in as an Administrator. First, follow the procedures in this document (**4.7.1 Shutdown Button**) for shutting down the ILS Server.

2. In order to logon as Administrator, the Autolog program must be disabled. Select Run from the Start menu.

3. Enter Autolog.

4. Select Disable Autolog and press **OK**.

5. Select Shutdown from the Start menu.

6. Select Close All Programs and Log on as a Different User. Press **OK**.

7. Log on as Administrator.

8. The ILS Server will automatically launch. Wait for it to complete and then shut down the program again.

9. Launch the Windows NT backup program. It is located in the Start menu under Programs / Administrative Tools.

10. In the Drives window, select the drive that you want to back up.

11. On the Select menu, click Check.

12. On the Operations menu, click Backup.

13. When the backup is complete logoff, then log back on as RFIDSRV. Once logged back in enable the Autolog process (refer to steps 2-4 above) by entering the appropriate password and selecting Enable Auto Logon.

Restore

1. Follow steps 1 through 9 from the backup instructions.

2. To restore individual files in a backup set on a tape: in the Tapes window, load the catalog of the backup set from which you want to restore certain files.

3. Select all the files you want to restore using the appropriate method:

4. To select contiguous files, click the first filename, hold down SHIFT, and click the last contiguous filename.

5. To select non-contiguous files, click a filename, hold down CTRL, and click each filename.

6. On the Select menu, click Check. A check mark displays in the check box for each selected file.

7. On the Operations menu, click Restore.

7.3. Patron Self-Checkout Station Printer Paper Reloading

Use the following procedure to reload the paper in the patron self-checkout station.

1. Remove the printer cover from the Self-Checkout Station chassis.

2. Insert a tool (small screwdriver) into the printer cover access hole and push against the cover release button.
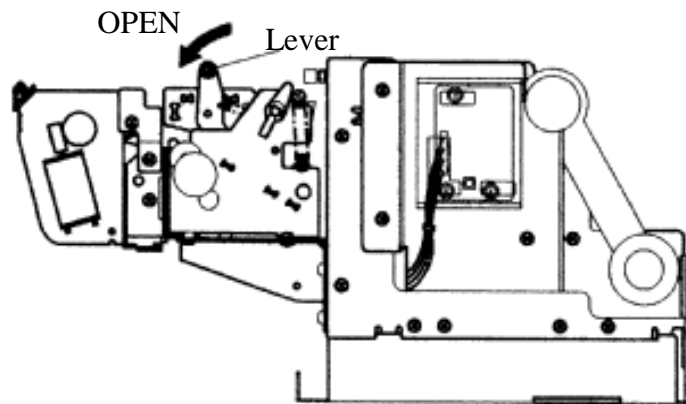

Figure 7-1: Patron Self-Checkout Station Printer Paper Reloading – Roll Release

3. Remove the used paper roll core from the printer.
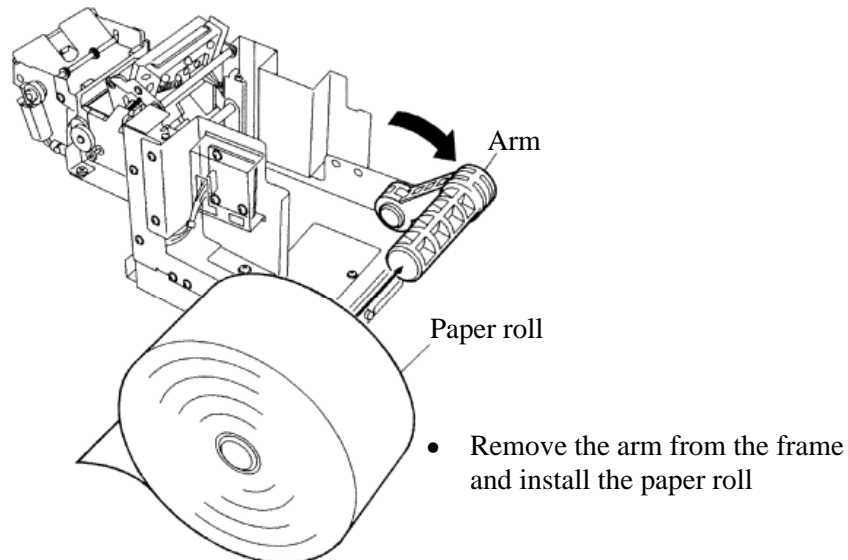
4. Install the paper roll.

Figure 7-2: Patron Self-Checkout Station Printer Paper Reloading – Roll Installation

5. Pass the paper over the damper shaft, then pass it under the thermal head and cutter guide.

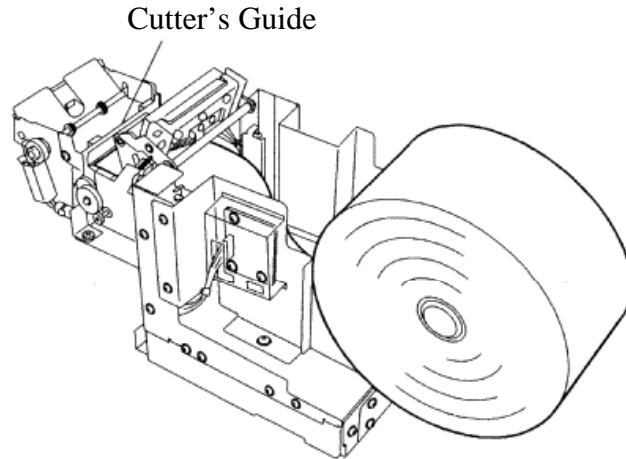6. Feed the paper until the end enters the presenter's roller.

Cutter's Guide

Figure 7-3: Patron Self-Checkout Station Printer Paper Reloading – Cutter's Guide

7. Firmly press the areas indicated with crosshatches on the thermal head until the lever is reset.
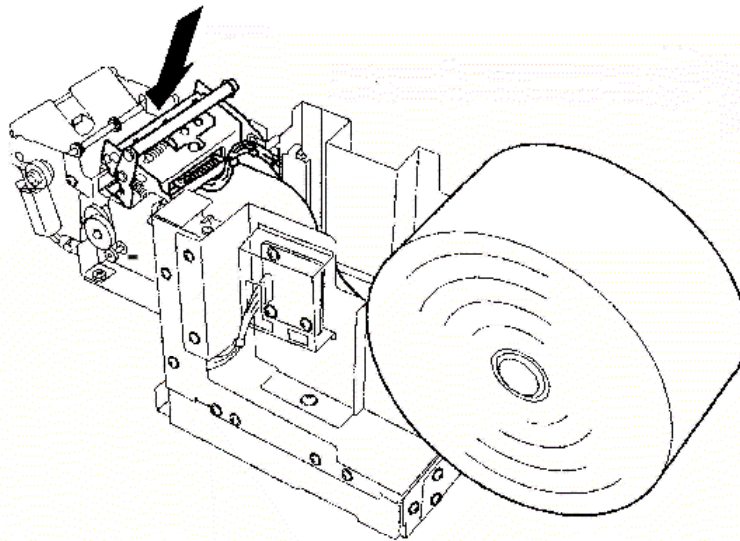

Figure 7-4: Patron Self-Checkout Station Printer Paper Reloading – Crosshatches

8. Carefully place the paper roll on the frame, then wind the roll to remove any slack in the paper. (Incorrectly installing the paper roll may bend the frame or cause a paper jam.)
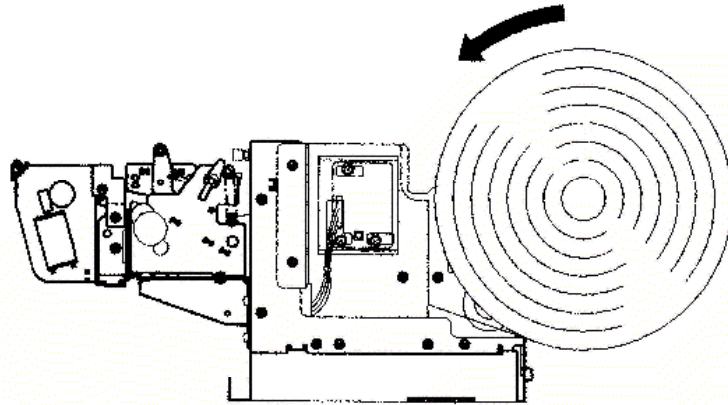
Figure 7-5: Patron Self-Checkout Station Printer Paper Reloading – Winding Roll

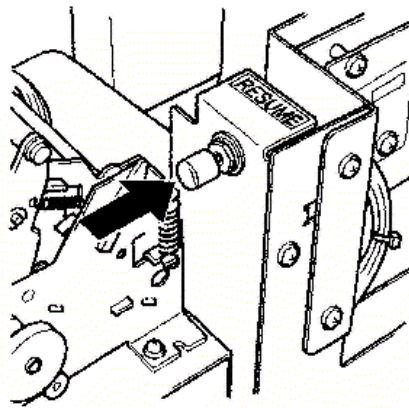9. Press the RESUME button indicated by the arrow.

Figure 7-6: Patron Self-Checkout Station Printer Paper Reloading – Resume Button

7.4. Safety Warnings

Barcode Scanner:

LASER RADIATION
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT

See the Metrologic Instruments IS 4110 and IS4120 ScanQuest® Laser Scan Engine Installation and User's Guide on other Safety intructions, warnings and technical specifications.

7.5. Specifications

Mechanical
Dimensions: 29 " L x 20.75 " W x 6.25 " H
(736.60 mm x 527.05 mm x 158.75 mm)
Weight: 26 lbs. (9.7 kg)
Materials: Acrylic / PVC alloy
Monitor: See the Planar PT1503NT User's Manual.

Electrical
Emissions: FCC Part 15, RSS 210, ETSI 300 330 Compliant
Immunity: ETSI 301489 Compliant
RF Transmit Frequency: 13.56 MHz
Demodulation type: AM
Read range: Up to 10" with a 2.1" x 2.1" Circulation Circuit$^{®}$
Console Power Requirements: 24 VDC, 50-60 Hz, 1.6 A
Safety: Requires dedicated circuit to prevent power surges and spikes from damaging the system. Requires power strip with power and modern surge protection. UL/cUL 60950-1 compliant.

Interfaces
Diagnostics: RS-232
Host: IEEE 802.3, 10 Base-T Ethernet, NE 2000 Compatible Read range

Peripherals
Monitor: Touch Screen 15" flat screen - standard
Printer: Star Micronics TSP 600 Series (643C)
Patron Card Reader (standard): Metrologic IS 4120
Power Supply: 90-264 VAC, 47 – 63 Hz IEC input, 24 VDC @ 4A output, UL Listed

Environmental
Operating temperature:
32 degrees F to 104 degrees F (0 degrees C to 40 degrees C)
Storage Temperature:
-22 degrees to 140 degrees F (-30 degrees C to 60 degrees C)
Storage/operating humidity
5% to 95%, non-condensing
Tag Compatibility
RFID Based Circulation Circuit

NOTES