NCR 7728-4000 / 4001

Customer Installation and User Guide

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

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Contents

Revision Record

Document Title

NCR 7728-4000 Installation & User Guide

Revision 01.00.00 (March 2005)

Page No.	Remarks
All	New NCR edition, including service and repair options

Welcome to the Digital Check /NCR 7728 System

Digital Check is a leading provider of branch and teller scanners worldwide. DCC continues to introduce new check scanning products to meet the growing worldwide demand for distributed capture by integrating the best US and European technologies.

What comes with the Digital Check Scanner?

The shipping box contains:

- Digital Check scanner
- a cable to connect the scanner to your PC
- a modular power supply
- an Ink-Jet Cartridge (if the scanner includes a printer)
- support paperwork (see Support Paperwork below)

If the Digital Check scanner uses a SCSI interface, you will receive a SCSI cable and a SCSI Interface card that will need to be installed in your PC. NCR provides an installation service if you require assistance. If the Digital Check scanner uses a USB interface, you will receive a USB cable.

Caution: Please retain your shipping box for warranty returns.

Note: Additional User Guides are available from NCR Information Products Publishing either as downloadable PDF files, or as printed manuals. See *http://www.info.ncr.com/eHome.cfm* to obtain copies.

Support Paperwork

The shipping box may contain a Support Document from your Headquarters Bank Help Desk, or a Support Document from your Sales Organization. For telephone support you should first contact the Help Desk within your Headquarters Bank, or call the NCR Care Center at 1-800-262-7782.

Prior to calling, please write down any error codes or messages from your Digital Check scanner, as well as the NCR Model Number and the Serial Number of your scanner:

Digital Check Model	NCR Model Number	Digital Check Model	NCR Model Number
DCC TS 210	NCR 7728-2100	DCC TS 300 with Ink-Jet	NCR 7728-3001
DCC TS 210 with Ink-Jet	NCR 7728-2101	DCC TS 350	NCR 7728-3500
DCC TS 220	NCR 7728-2200	DCC TS 350 with Ink-Jet	NCR 7728-3501
DCC TS 220 with Ink-Jet	NCR 7728-2201	DCC TS 400	NCR 7728-4000
DCC TS 300	NCR 7728-3000	DCC TS 400 with Ink-Jet	NCR 7728-4001

NCR Model Number _____ Serial Number _____

Thank you for your purchase of the Digital Check / NCR System

Overview

The TellerScan™ 400ES is the latest version of the popular TellerScan 400 Countertop Check Scanner. This newly refined product contains **E**nhancements and **S**tandardized (ES) components to further improve the product's reliability and serviceability. The enhancements consist of a larger capacity inner sort pocket, and an additional pinch-roller mechanism that actually drives the documents into the pocket.

Additionally, this new product now has standardized electronic components that make it hardware compatible with other TellerScan models that have taken full advantage of the ever increasing power of the PC to further enhance image processing and MICR decoding.

The TellerScan™ 400ES is an easy-to-use, compact, high-speed check scanner that connects to a PC (personal computer). The scanner automatically images the front and/or back of checks and also magnetically reads the MICR (Magnetic Ink Character Recognition) code line. The images and code line data can then be stored on the PC or utilized in your application.

Options

Scanner options include:

- Ink-jet endorser - to print characters, logos and/or graphics on the backside of checks.
- Badge reader-reads a credit card-type magnetic stripe. Used for security and batch identification of documents.
- RIDO (Red Ink Drop Out) feature that does not capture anything printed with red ink on the document.

System Requirements

In order to operate the TellerScan™ 400ES, the recommended and minimum requirements for your PC are:

Recommended	Minimum
500 MHz Pentium III processor	333 MHz Pentium II Processor
128 MB RAM	64 MB RAM
200 MB free hard disk space	100 MB free hard disk space
Windows 98™, Windows NT™ 4.0, Windows 2000™, or other Operating System with appropriate interface	Windows 95™, Windows 98™, Windows 2000™, or other Operating system with appropriate interface
Current Adaptec PCI SCSI-2 (or equivalent) Host Adapter and cable	Adaptec SCSI (or equivalent) Host Adapter and cable

Radio Frequency Interference

The TellerScan™ 400ES generates, uses, and can radiate radio frequency energy. If the scanner is not installed and used properly-that is, in strict accordance with the instructions in this manual-it may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A digital devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against harmful interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user, at his/her own expense, will be required to take whatever measures may be required to correct the interference.

The use of shielded cables is required when connecting this device to any/all peripheral or host devices. Failure to do so may violate FCC rules.

Features of the TellerScan™ 400ES

Figure 1 - Outside the TellerScanu400ES

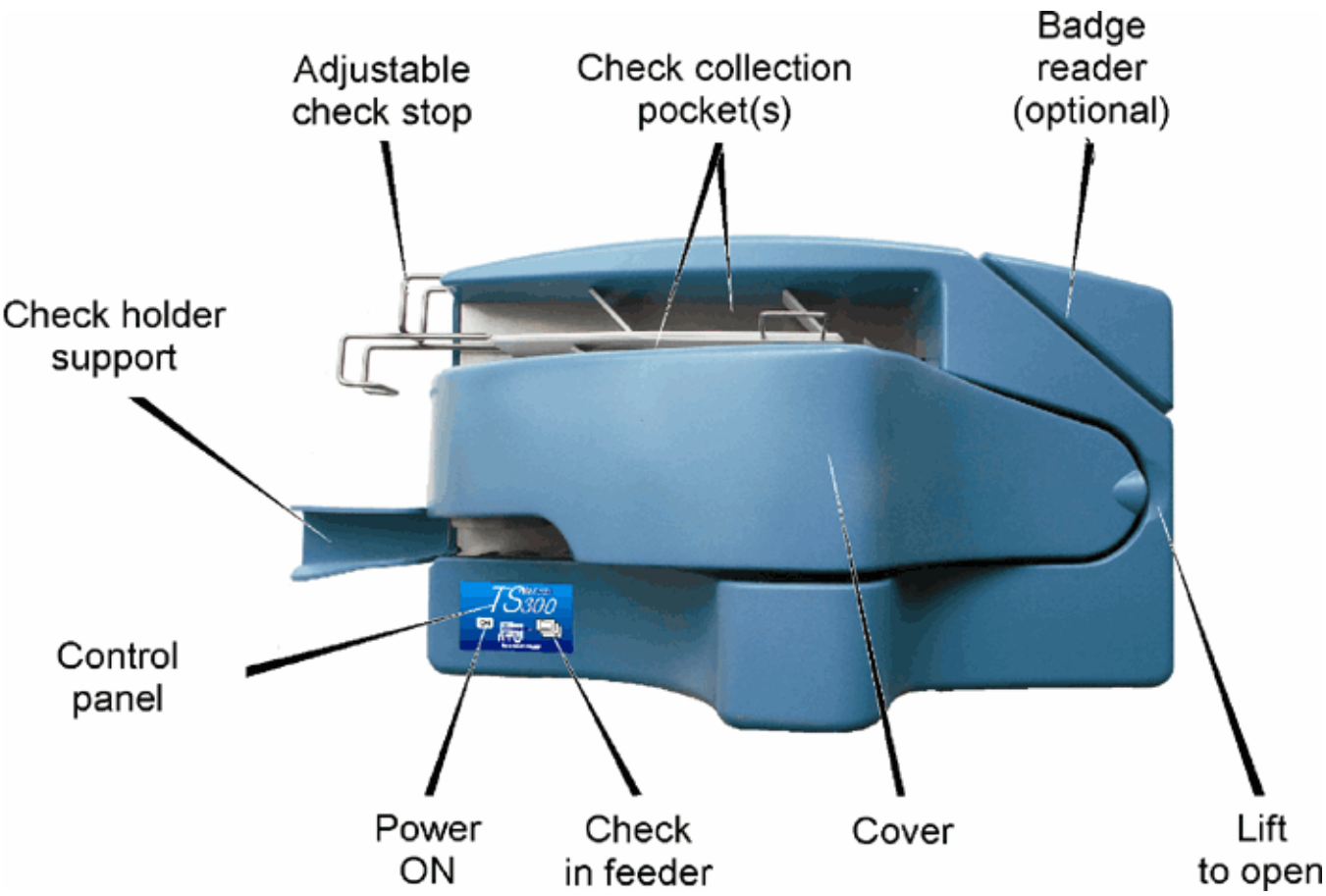


Figure 2 - Rear Deck of TellerScan™ 400ES

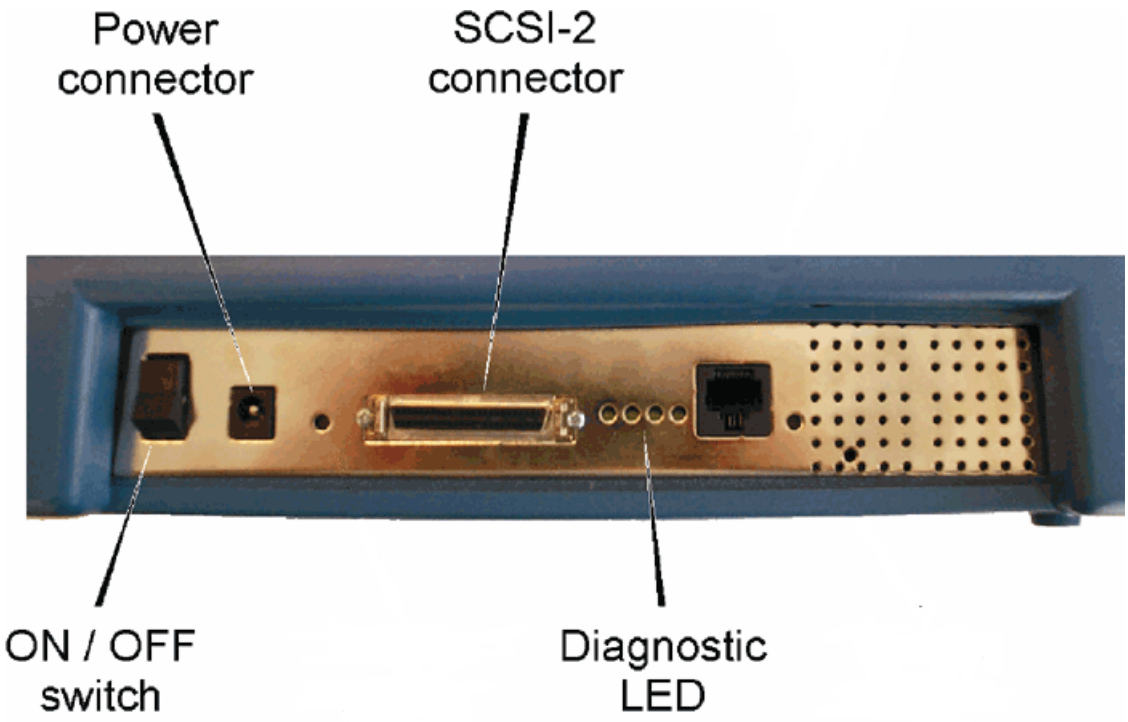
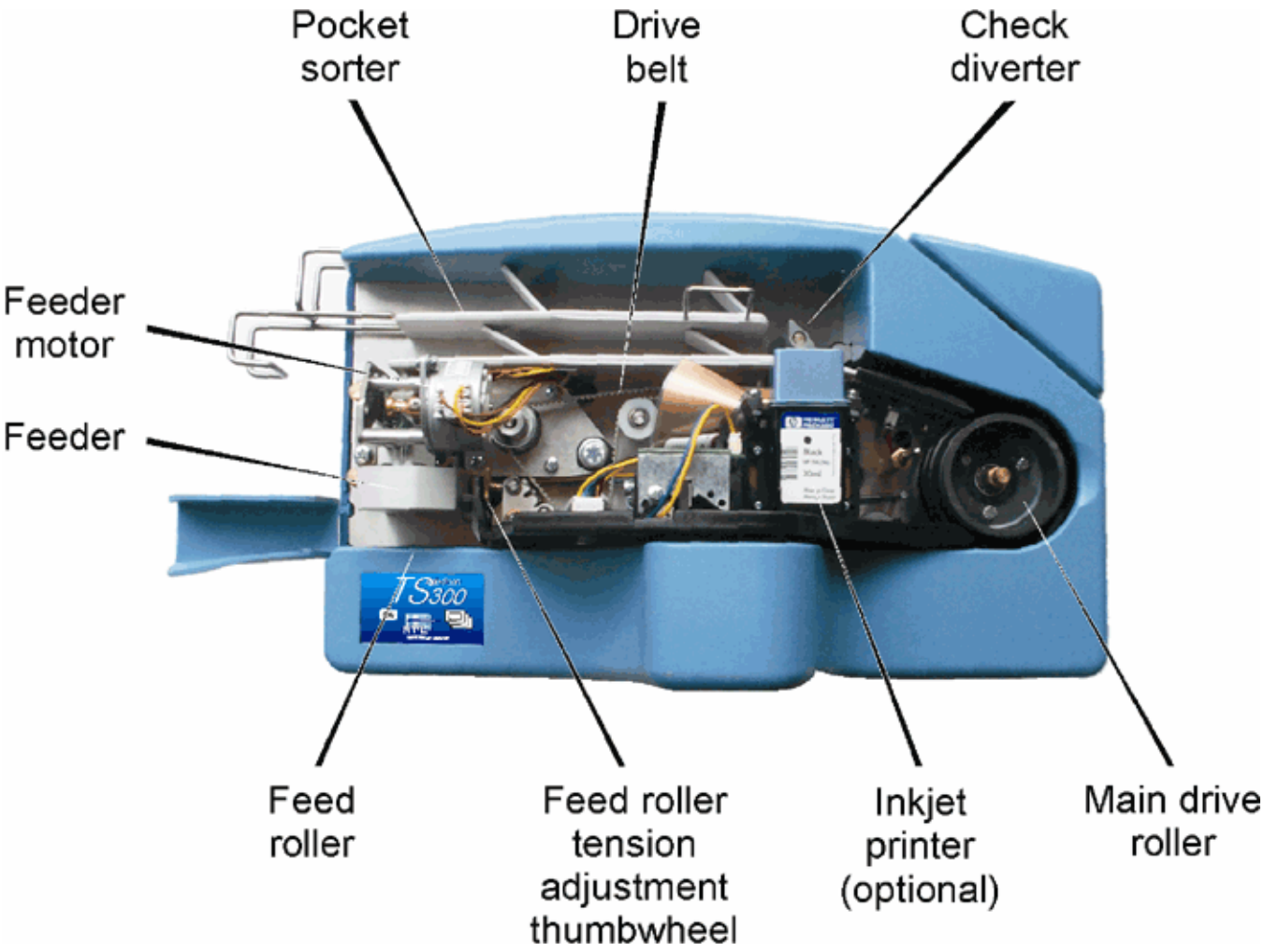


Figure 3 - Inside the TellerScan™ 400ES



Equipment List

The TellerScan™ 400ES package includes the following pieces:

- TellerScan™ 400ES scanner
- Modular power supply
- TellerScan™ Demo software and installation driver (diskette)
- Operator Manual
- Sample Cleaning Cards (3)
- Check Holder Support

The following additional equipment may also be included:

- SCSI Interface Kit - Current Adaptec SCSI Host Adapter Card (or equivalent), Scanner/SCSI Card Connection Cable, and SCSI driver software (if required).

  Note: The SCSI Interface Kit may be packaged separately.

- Ink jet cartridge (for scanners equipped with the optional Ink jet printer endorser)
- Ink jet replacement pads or cartridge absorber
- Scanner Cleaning Cards (25 cards per box)

Installing the Scanner

If your computer does not have a SCSI Board (such as the current Adaptec PCI SCSI-2 board), have a qualified technician install the SCSI Board and SCSI Driver Software in accordance with the manufacturer's instructions.

Warning: **Before you connect the scanner to a power outlet, be sure that the Modular Power Supply input rating (as shown on the bottom label) corresponds to the voltage at your location.**

1 Install the Check Holder Support onto the body of the left side of the scanner. Insert tongue in groove and push downward.

2 Locate the scanner on a flat surface near PC and away from direct light.

3 Connect the power cord from the Modular Power Supply to the Power Connector on the Scanner Rear Deck. (See Figure2.)

Caution: The magnetic field created by the Modular Power Supply can interfere with accurate reading of the MICR code line.

4 Locate the Modular Power Supply at least 3 feet away from the scanner in a ventilated area, then connect to a source of power.

5 Make sure the TellerScan™ 400ES is turned off.

- Verify that the green power indicator on the Control Panel is not lit; the On/Off switch is located on Rear Deck (see Figure 2).

6 Connect the SCSI Cable to the TellerScan™ 400ES. (SCSI-2 Interface Connector is on Rear Deck. Ensure connector locks snap into place.)

Note: The scanner SCSI ID number is “2”, and the scanner terminates the SCSI line.

7 Turn on the scanner. (Verify power by observing green LED on control panel.)

- When you switch on the TellerScan™ 400ES, the scanner will perform an automatic Power On Self Test (POST) to verify that it is functioning correctly. If a problem is detected, the 'Checks in Feeder' LED on the control panel will flash continuously. Call NCR, as detailed in the back of this manual.

Note: The center cover must be installed to activate the power interlock switch.

8 Turn on the PC.

Note: If windows finds a new Plug and Play device, the driver “*.inf” file is located on the Demo floppy. Look in the directory folder that matches your operating system.

Power On Self Test (POST)

At power-up, the scanner automatically runs a diagnostic self-test to verify that the electronics are working properly. If something fails, the 'Document Ready LED' starts flashing and the Error Code for the test that failed is displayed by the 4 Diagnostic LEDs located on the rear panel. (See Figure 2)

The error Codes are as follows:

	[Left]			[Right]
ERROR	**LED 4**	**LED 3**	**LED 2**	**LED 1**
Program Checksums	OFF	OFF	OFF	ON
RAM	OFF	OFF	ON	OFF
EEPROM	OFF	OFF	ON	ON
IMAGE ADC	OFF	ON	OFF	ON
SCSI Driver	OFF	ON	ON	OFF
Flash Write	OFF	ON	ON	ON

Please record any startup errors and report them to NCR when you call for service.

Testing the Scanner

The TellerScan™ Demo software is a test program that allows you to operate the scanner, change different scanner settings, and view and store images on your PC's hard disk.

Note: The TellerScan™ Demo program is not suitable for production work. Additional application software is required.

1 Load the TellerScan™ Demo diskette into the floppy drive.

2 Create a 'TellerScan Demo' folder on your hard drive.

3 Copy all the files and folders from the diskette to the new TellerScan Demo folder.

4 Create a Windows shortcut to the scandemo.exe file (right click on the file.)

5 Drag the new shortcut icon to the desired desktop work area.

6 Double click on the new icon, then wait for the program to begin.

7 Load the checks in the Automatic Check Feeder with the front of the check facing the front of the scanner.

Note: Checks must be jogged properly in order to feed correctly. The bottom and leading edges of the check stack must align to one another.

8 Click on the “Scan 1” button:

- The scanner should feed one document.
- The Demo program should display the image of that document
- The Demo program should display the MICR information, if the document was encoded.

How to Load Checks

You can load checks one-by-one or load a stack and let the Automatic Check Feeder feed them automatically. The Automatic Check Feeder can accommodate up to 100 checks.

1 Remove all rubber bands, staples, paper clips, pins, etc.

2 Fan the stack to ensure separation between checks.

3 Checks must be aligned properly to one another to insure accurate feeding, scanning, and MICR reading. This can be easily accomplished with the use of a commercial check jogger, or manually as follows:

   a Align the stack along the bottom edge to make sure that the checks enter the feed mechanism flat on the base plate. This can be done by holding the stack loosely, then striking the bottom of the stack on a hard, flat surface.

   b Once aligned along the bottom edge, the leading edges must also be aligned. This can be accomplished by gently striking the right side of the stack with a flat object as they set loosely held on the flat surface.

   Note: You don't have to separate checks by size.

4 Make sure that the fronts of all the checks face the front side of the scanner.

5 Securely holding the stack in your hand, place the stack of checks against the pressure plate, push back to depress the plate, then slide the stack down all the way to the bottom.

6 Make sure the “Checks in Feeder” LED is lit on the Control Panel.

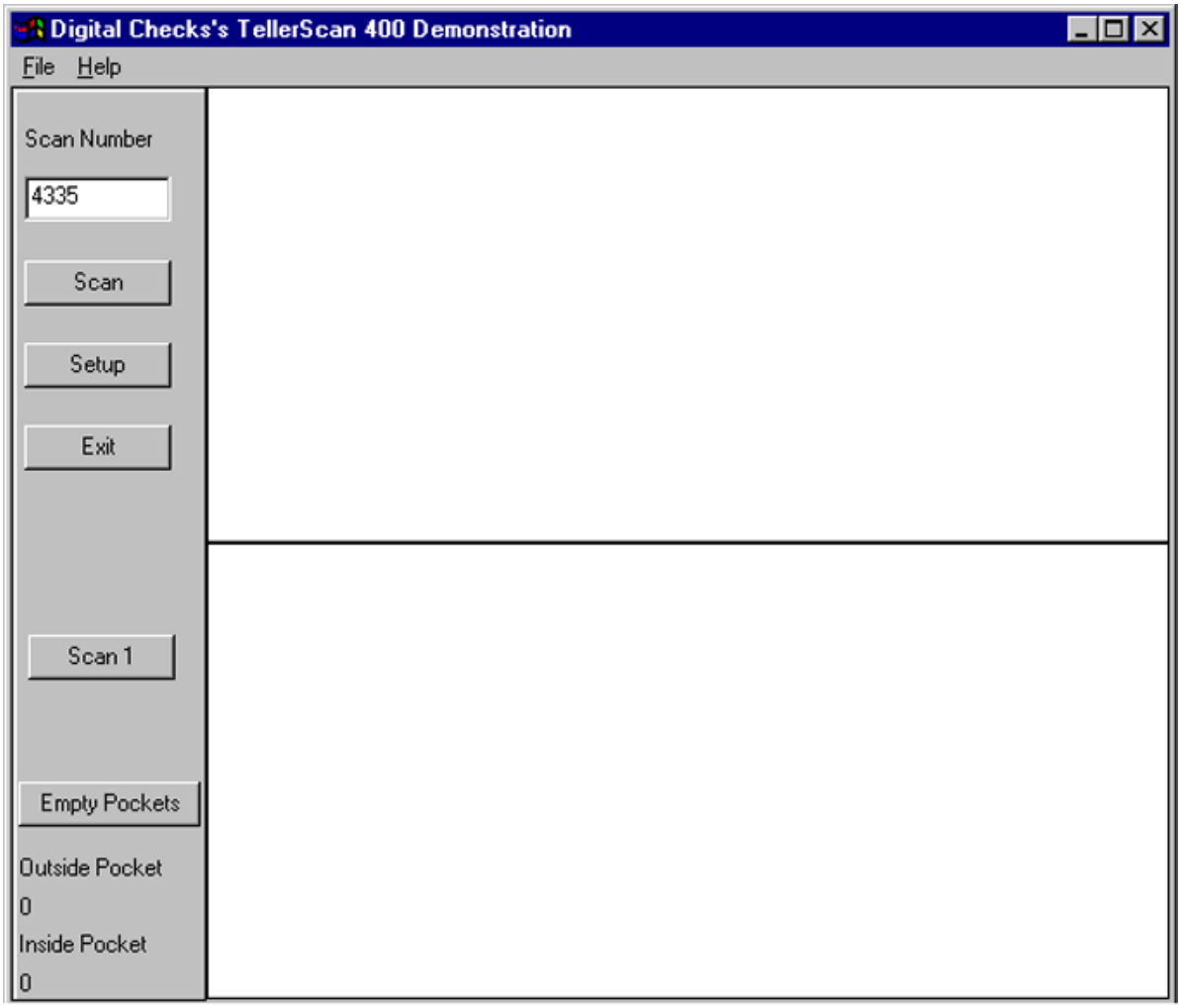
How to Use the TellerScan™ Demo Program

The TellerScan™ Demo software is a test program that allows you to operate the scanner, change different scanner settings, and view and store images on your PC's hard disk.

Note: The TellerScan™ Demo program is not suitable for production work. Additional application software is required.

- Images will be saved to the TellerScan Demo directory.
- MICR Ascii codeline data will be saved to the “scandemo.mcr” file TellerScan Demo folder

Figure 4: Demo Program Main Screen



Scan Button - Scanning checks is easy with the TellerScan™ 400ES: Click on the Scan button (see Figure 4). When you do this, the word “Scan” will change to “Quit”; click on “Quit” when you want to stop scanning. The scanner will utilize the current scanner settings or the default settings.

Setup Button - The TellerScan™ Demo software already has certain default values set for Image Format, Magnetic Code, DPI, Display Settings, and Scan Settings. If you want to view or change these settings: Click on the Setup button on the TellerScan™ 400ES Demo software screen. You'll see a screen that looks like Figure 5. Select the new settings you want, then Click OK.

Exit Button - Click this button to Exit the Demo Program.

Scan 1 Button - Click this button to command a single scan cycle.

Empty Pockets - Click this button to reset pocket counters.

Figure 5 - Demo Program Setup Screen

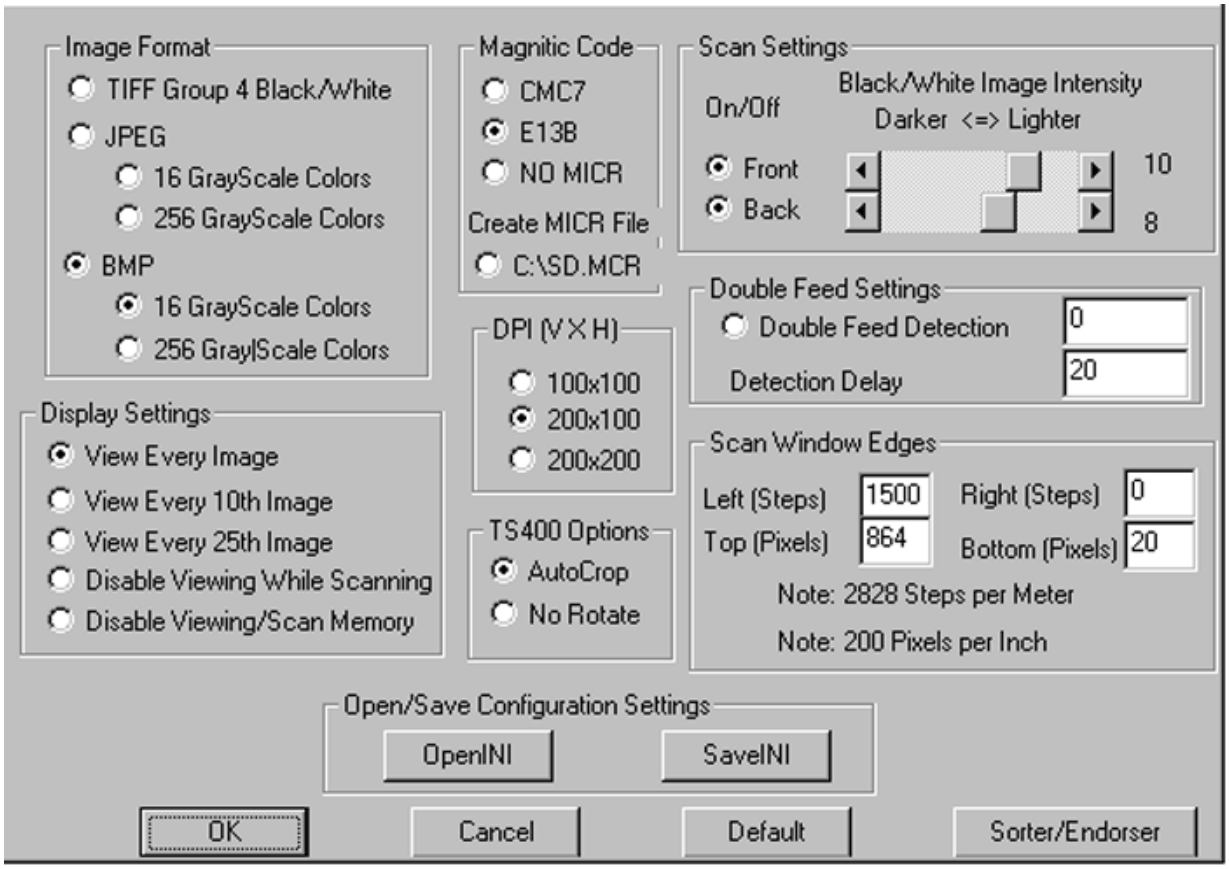


Image Format - Check images can be saved as TIFF (Tagged Image File Format), JPEG (Joint Photographic Experts Group), or BMP (Bitmap) files. Images can be saved as two types, 'Black & White' or 'Grayscale' (16 or 256

levels). Grayscale 256 levels will provide the best quality image, but will also result in the largest file size.

Magnetic Code - Select CMC7 or E13B to match the type of MICR printing on the checks being scanned.

Create MICR File - When enabled, MICR codeline information is saved in an ASCII file called 'sd.mcr' located in the root directory.

Scan Settings - Select Front and/or Back side scanning. For 'Black & White' type images only, the density must be set to produce the desired results. Higher values produce lighter images. Lower values produce darker images.

Display Settings - Off-loads some of the PC screen paint overhead functions thereby producing higher scanner throughput rates.

DPI - (Dots per Inch) Select the desired vertical by horizontal resolution to meet the scanning requirement. Higher values create a better quality image but also increase the file size.

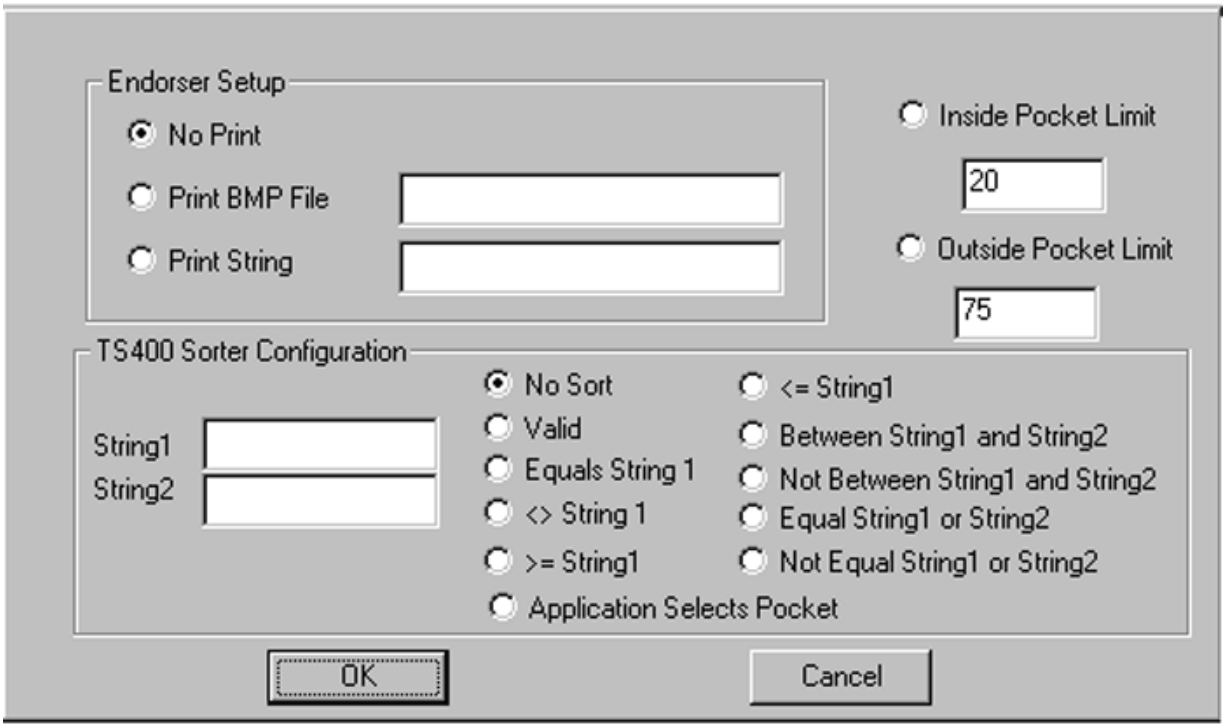
TS400 Options - 'AutoCrop' removes image outside the document area that is still inside the pre-defined scanning window. 'No Rotate' presents the images as they are captured by the scanner in a vertical orientation.

Double Feed Settings - Enable/Disable the Double Feed Detection function. Detection Delay allows a pseudo double feed condition to exist for a preset period (length in mm) before the error is indicated. This feature is useful for skipping over a heavy ink endorsement area of a check that might otherwise be interrupted as a double feed condition.

Scan Window Edges - Select the window size for the largest check to be scanned. The Autocrop function (as described in TS400 Options earlier) will take care of cleaning up images of smaller checks being scanned when the window is set to a larger size.

Sorter/Endorser - Presents another set-up screen to select various functions (See Figure 6).

Figure 6 - Demo Program Sorter/Endorser



Print BMP File - Enter path and name of file to print.

Note: File must be formatted to print head capability.

Print String - Enter characters (alpha and numeric) to print.

Inside/Outside Pocket Limit - Enter values at which scanner is to automatically stop scanning documents.

TS400 Sorter Configuration - Select 'No Sort' to disable sorting. Select 'Valid' to enable sorting based on correct reading of the MICR code line. Other selections are for advanced string sorting which is not defined in this manual.

Note: With 'Valid' selected, any check whose MICR code line is not read completely correct will be sorted to the inside reject pocket.

Frequently Asked Questions

Question: Will the TS 400ES handle both business and personal checks?

Answer: Yes, the exit pockets accommodate both personal and business size checks.

Question: Can documents other than checks be scanned in the TS 400ES?

Answer: Yes, any normal paper weight and size document that meets the specifications and fits the basic scan "window" of 9 inches long by 4.13 inches high can be scanned (remittance slips, balance tickets, signature slips, etc.).

Question: What PC is recommended to operate the TS 400ES?

Answer: Recommended 500 MHz Pentium III with 128 MB RAM (see inside front cover for more information).

Question: Can the TS 400ES be "daisy chained" with another SCSI device on the controller PC?

Answer: No, this is not a standard connection configuration. Each TS 400ES wants to have its own dedicated PC with SCSI Host Adapter.

Question: What is the SCSI ID for the TS 400ES?

Answer: SCSI ID = 2.

Question: Is the TS 400ES ISIS compatible?

Answer: No, not at this time. An ISIS requirement evaluation will be conducted upon request.

Question: Does the TS 400ES have endorsement capabilities for the back of the check?

Answer: Yes, that feature is an option available at the time of ordering. The ink jet printer gives a two-line endorsement along with logo and graphic capabilities.

Question: Does the speed of the scanner vary depending upon any outside variables?

Answer: Yes, currently the TS 400ES scanner transport has a throughput speed of 80-90 checks per minute in the bitonal mode. This speed can be enhanced using software techniques and will be slower with changes in grayscale scanning from 16 to 256 levels and 100 dpi to 200 dpi scanning, and personal to business size checks. The speed will vary from about 30 checks per minute to about 90 checks per minute.

Question: Does the scanner or the software do the compression of the check images?

Answer: Compression is performed on the PC using software routines.

Question: What kind of data file does the scanner provide?

Answer: The scanner provides a standard Group IV TIFF image of the front and back of the documents and a separate comma delimited ASCII file of the MICR code line. Each image is a single file, so the front and back of a check are two separate files. Average bitonal file size is 8K, but will vary based upon selection parameters. Other file formats are also available through the API (Application Program Interface).

Question: In addition to the TS 400ES and the PC, is there anything special that a user may need to buy?

Answer: Yes, in order for the TS 400ES to interface with the PC, the user must have a SCSI Host Adapter Card and appropriate Interconnect Cable. A SCSI Interface Kit is available. Check Imaging application software is also required.

Operator Maintenance

Dust, lint and small particles may get into the track area between the front and rear scan heads.

Note: You will need to obtain a container of canned air for this procedure. They are readily available at most office supply stores.

Clean this area as follows:

1 Install the nozzle in a container of canned air.

2 Spray the area around the Pusher Bar and the Automatic Check Feeder (slide the Pressure Bar back and forth while spraying).

Cleaning the Feed Rollers

The feed rollers should be cleaned every week or after every 20,000 checks (whichever comes first). To clean the roller, use the pre-saturated, disposable Cleaning Card (NCR Direct # 195342). This card is effective in cleaning the scanner's magnetic head, track area, and rubber roller surfaces.

Note: Do not open the package until you are ready to use the cleaning card. You want to use it immediately before the card dries out:

1 Carefully remove card from pouch.

2 To clean magnetic head, insert card into scanner hopper, then command a scan cycle. Repeat using other side of card. Repeat two more times after reversing card end for end.

3 To clean rollers, insert card into hopper while holding on to the trailing end. Command a scan cycle and allow card to enter pinch rollers only until left side of card aligns to left side of check holder attachment, then allow rollers to turn against card. Repeat after reversing card end for end.

Replacing the Ink Jet Cartridge

Replacing the Ink Jet Cartridge (Optional Standard Endorser)

When it's hard to read the endorsement due to poor ink coverage, replace the ink jet cartridge. Here's how:

Note: The Standard TellerScan™ 400 Endorser uses a Hewlett Packard ink jet cartridge HP 51629A, NCR Direct # 530046.

1. Open the Center Cover
2. Remove the used ink jet cartridge as follows:
   - **a** Grasp the top of the cartridge
   - **b** Gently pull up on the cartridge at the rear.
   - **c** Discard the used cartridge
3. Prepare a new ink jet cartridge as follows:
   - **a** Take the new cartridge out of its package
   - **b** Remove the tape covering the ink jet nozzles
   - **c** Don't touch the ink with your fingers or clothing; it stains

   Note: Don't touch the electrical contacts (copper-colored areas).
4. Insert a new ink jet cartridge as follows:
   - **a** Insert the nose (ink-jet end) of the cartridge into the cradle and slide forward while keeping the reservoir end of the cartridge tilted slightly upward.
   - **b** Push the cartridge downward firmly until it snaps into position.
5. Close the Center Cover.

Troubleshooting

The TellerScan™ 400ES transport is designed to scan millions of items without trouble. On board diagnostics, power on self-testing and an easy-to-service modular design ensure reliable, problem-free operation.

However, here are some troubleshooting tips in case you do have problems.

Clearing Jams

If a jam occurs, the paper path must be cleared. To do this, first remove any document that is present in the input tray. Then try to advance the jammed document by pressing the EJECT button in your application program. In case the document does not move:

1. Remove the central top cover by grasping it on the right side and lifting upward.
2. Work documents free of the mechanism and clear the path of any jammed document. Make sure that the rollers are free of paper and debris.
3. Rotate the mechanism, if necessary, by manually turning the Main Drive Roller located on the right side. (See Figure 3.)
4. Replace the cover and stack the documents back into the input tray.

Improper Feeding

If you experience feed problems with the TellerScan™ 400ES:

1. Open the Center Cover by grasping the right side and gently lifting upward.
2. Using your fingers, turn the Feed Roller Tension Adjustment. Thumb wheel (refer to Figure 3.)
3. If the scanner is feeding more than one check at a time, the mechanism is too loose. Tighten by turning the adjustment screw very slightly clockwise.
4. If no checks feed, the mechanism is too tight. Loosen by turning the adjustment screw very slightly counterclockwise.

   Note: This is not a very sensitive adjustment.
5. Close the Center Cover.

Double Feeding

The TellerScan™ 400ES uses sensors that measures how opaque a check is to make sure that it doesn't feed two checks at the same time.

- If an actual “double feed” does occur, adjust the Thumb wheel as described in the previous section.

- If the sensors measure the opacity of a single check as if it were a double check, the double feed alarm will be indicated. Sometimes an opaque logo on the front of a check or heavy ink stamp on the back will cause the sensors to think they are detecting a double feed condition (thereby stopping the scanner) when in fact they are not. To solve this problem:

  a Start the TellerScan™ 400ES Demo Program.

  b Click on the Setup button.

  c In the Detection Delay control box, set the number to a higher value.

  d Click on OK.

  Note: Detection Delay allows a pseudo double feed condition to exist for a preset period (length in mm) before the error is indicated. This feature is useful for skipping over a heavy ink endorsement area of a check that might otherwise be interrupted as a double feed condition and trigger the logic. Be careful not to get the Delay value too high or the entire check will be skipped which is equivalent to disabling the Double Feed function.

  e If the double feed problem persists, disable Double Feed Detection in the setup screen. Then call NCR as detailed at the back of this manual.

Other Feeding Problems

If you experience feed problems:

1 Clean the feed roller (see the Operator Maintenance section).

2 Clean the scanner (see the Operator Maintenance section for details).

3 If your feeding problem persists, call NCR as detailed at the back of this manual.

Check Image Fades Toward the Bottom

If you notice that the check image fades toward the bottom, clean the scanner (see the Operator Maintenance section for details).

Scanning Problems

If you experience a scanning problem, run the TellerScan™ 400ES Demo Program:

1 Double-click on the TellerScan™ Icon or click on the TellerScan™ Menu Item.

2 Load several checks into the Automatic Check Feeder.

3 Click on the “Scan” button.

- If the TellerScan™ 400ES scans the item correctly, there may be a problem with your application software. Contact your software service department.

- If the item is not scanned correctly, call NCR as detailed at the back of this manual.

Badge Reader

If you have a problem with the optional badge reader:

1. Make sure that the magnetic strip faces in-toward the scanner-and down.
2. Quickly slide the card in one end and out the other. (The base of the card should glide along the base of the badge reader.)
3. Use a cleaning card (NCR Direct # 533056) to clean the card reader.
4. Try another card.
5. If the problem persists, call NCR as detailed at the back of this manual.

TS 400ES Specifications

Scanning Device	2 x 840 cell, 105mm long, linear CCD Array
Light Source	2 x 37 LED superbrite array Green/Yellow – Optional Red
Scanning Method	Concurrent, duplex (front & rear)
Document Size	Up to UNI A6
Document Height	2.16 – 4.13 inches (55 - 105mm)
Document Length	3.42 – 9.0 inches (87 – 229mm)
Document Weight	16 – 32 lbs. (60 – 120gr./sq. m
Auto Feeder Capacity	80-100 documents (depending on document thickness and condition)
Output Sort Pockets	Two pockets, each holding 80-100 documents (depending on document thickness and condition)
Scanning Capture Speed	39.4 in./sec. (100 cm/sec.) @ 100 dpi horizontal resolution 19.7 in./sec. (50 cm/sec.) @ 200 dpi horizontal resolution
Scanner Image Format	Uncompressed Bitonal (Black & White) and Grayscale
Grayscale Image Depth	4 or 8 bits/pixel (16 or 256 shades)
Image Resolution	V H Format
(dots per inch)	100x100 4/8 Bit Gray Scale
	200x100 B/W, 4/8 Bit Gray Scale
* Interpolated Mode	200x100* B/W, 4/8 Bit Gray Scale
	200x200 B/W, 4/8 Bit Gray Scale
Scan System Throughput	30-90 checks per minute (running 6 inch checks) (depending on image format, resolution, and PC power)
Double Feed Device	IR (Infrared) transmissive type Software scalable

Double Feed Detection	Programmable delay - performs skip-over function
SCSI Interface	SCSI-2; SCSI ID 2
Image Compression	TIFF Group IV (bitonal) or JPEG (grayscale) performed by software running on the workstation
Image Transmission	Through the SCSI port
MICR Recognition	MICR recognition firmware for E13B or CMC7 standards
MICR Data Transmission	Through the SCSI port
Environmental Specifications	
Temperature (operating)	60–90 degrees F (15–32 degrees C)
Humidity (operating)	35–85% non-condensing
Scanner Physical Dimensions	
Height	7.4 inches (18.8 cm)
Length	12.8 inches (32.4 cm)
Depth	7.3 inches (18.4cm)
Weight	9 lbs. (4.1kg)
Electrical Specifications	
Power Consumption	75 Watts (maximum)
Input Voltage	115 VAC (+/- 10%) 60 Hz 230 VAC (+/- 10%) 50 Hz
Agency Approvals	UL, CUL, CE, FCC
Product Life	Designed for a useful life of 20 million checks
Duty Cycle	8000 to 12000 checks per day
MTTR (Mean time to repair)	30 minutes
Operating Systems Support	Windows ’98, ME, NT, 2000, XP

Service Features

Power On Self Test (POST)

At power-up, the scanner automatically runs a diagnostic self test to verify that the electronics are working properly. If something fails, the 'Document Ready LED' starts flashing and the Error Code for the test that failed is displayed by the 4 Diagnostic LEDs located on the rear panel. (See Figure 2)

Error Codes are as follows:

	Left	Left	Right	Right
ERROR	**LED 4**	**LED 3**	**LED 2**	**LED 1**
Program Checksums	OFF	OFF	OFF	ON
RAM	OFF	OFF	ON	OFF
EEPROM	OFF	OFF	ON	ON
IMAGE ADC	OFF	ON	OFF	ON
SCSI Driver	OFF	ON	ON	OFF
Flash Write	OFF	ON	ON	ON

Note: Record the error and give it to the agent when you call for repairs.

SCSI Identification Address

The default SCSI ID number is "2". The default configuration status is Terminator Resistors Installed. These settings should not be changed.

Call NCR

Call the NCR Care Center at 1-800-262-7782 to arrange for service to your scanner. Tell the agent if you need Warranty repair. You can also arrange a ‘warranty uplift” to Advanced Exchange.

NCR provides on-site repair service for the TellerScan™ 400ES. Or you can use the depot level repair service. The following charts show how these depot services work:

New or Warranty Failure

New or Warranty Failure Process

Customer is unable to make hardware operational on receipt, or has determined there is a problem during the Warranty period. Customer then records the symptoms and / or error messages, and obtains the class, model and serial number of the unit.

Example:
Class - Model: 7728-4001
And
Serial Number: XXXXXXXX

Customer Calls The NCR Care Center at: **1-800-262-7782** and reports the warranty failure.

NCR verifies the Class, Model and Ink Jet option with customer

NCR assigns a Work Order number and verifies the customer address.

Customer packs the scanner in the original packaging, inserts the problem details and return address, records the Work Order Number on the outside of the box, then returns the defective scanner to:

NCR Corporation
Attention: 7728 Repair
405 Edison Way
Reno, Nevada 89502 USA

Phone: 1-775-856-1832

Customer retains the scanner serial number, work order number and shipment tracking number for enquiry purposes; E-mail to Service.WDC@NCR.Com

NCR arranges the Warranty repair and closes the Work Order. NCR then ships the scanner to the return address, by prepaid next-day air.

Depot Repair and Return

Repair and Return Service (USA Only)

Customer has determined there is a problem not solved by operator maintenance. Customer records the details and / or error codes, then obtains complete class, model and serial number of the defective scanner.

Example:
Class - Model: 7728-4000
And
Serial Number: XXXXXXXX

Customer Calls The NCR Care Center at: **1-800-262-7782** and reports the failure.

NCR verifies the Class, Model and Ink Jet option with customer

NCR assigns a Work Order number and verifies the customer address.

Customer packs the scanner in the original packaging, inserts the problem details and return address, records the Work Order Number on the outside of the box, then ships the defective scanner, prepaid, to:

NCR Corporation
Attention: 7728 Repair
405 Edison Way
Reno, Nevada 89502 USA

Phone: 1-775-856-1832

Customer retains the scanner serial number, work order number and shipment tracking number for enquiry purposes; E-mail to Service.WDC@NCR.Com

NCR repairs the defective scanner and closes the Work Order. NCR then ships the scanner to the return address, by prepaid next-day air.

Advance Exchange on Failure

Advance Exchange Service (USA Only)

Customer has determined there is a problem not solved by operator maintenance. Customer records the details and / or error codes, then obtains complete class, model and serial number of the defective scanner.

Example:
Class - Model: 7728-4000
And
Serial Number: XXXXXXXX

Customer Calls The NCR Care Center at: **1-800-262-7782** and reports the failure.

NCR verifies the Class, Model and Ink Jet option with customer

NCR assigns a Work Order number and verifies the customer address.

NCR ships the replacement hardware by next-day air.

Customer exchanges the defective equipment.

Customer packs the scanner in the original packaging, inserts the problem details and RMA form, records the Work Order Number on the outside of the box, then ships the defective scanner to:

NCR Corporation
Attention: 7728 Repair
405 Edison Way
Reno, Nevada 89502 USA

Phone: 1-775-856-1832

Customer retains the scanner serial number, work order number and shipment tracking number for enquiry purposes; E-mail to Service.WDC@NCR.Com

NCR repairs the defective equipment and closes the Work Order. NCR then stores the repaired equipment for the next customer exchange.