NCR 7728-3500 / 3501

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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Revision Record

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NCR 7728-3500 Installation & User Guide

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

The TellerScan™ 350 incorporates a motorized feeder, which enables the scanner's single check drop feature. This feature allows an operator to load a single check with one hand since the default position of the check hopper, when empty, is partially open.

Options

Scanner Options include:

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

Equipment List

The TellerScan™350 package includes the following pieces:

- TellerScan™350 scanner
- Modular power supply
- TellerScan™350 Demo software and installation driver (diskette)
- Operator Manual
- Sample Cleaning Cards (3)
- Check Holder Support
- SCSI Interface Kit – Current Adaptec SCSI Host Adapter Card (or equivalent), Scanner/SCSI Card Connection Cable, and SCSI driver software (if required).

  Note: 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

System Requirements

In order to operate the TellerScan™350, 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

Supplies

The TellerScan 350 uses the following supplies:

- Cleaning cards with alcohol, 25 per box, NCR order number 195342.
- Ink-jet cartridge, HP 51604A, NCR order number 529840
- Card-reader cleaning card, 12 per box, NCR order number 533056

Radio Frequency Interference

The TellerScan™350 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™350

Figure 1- Outside the TellerScan™ 350

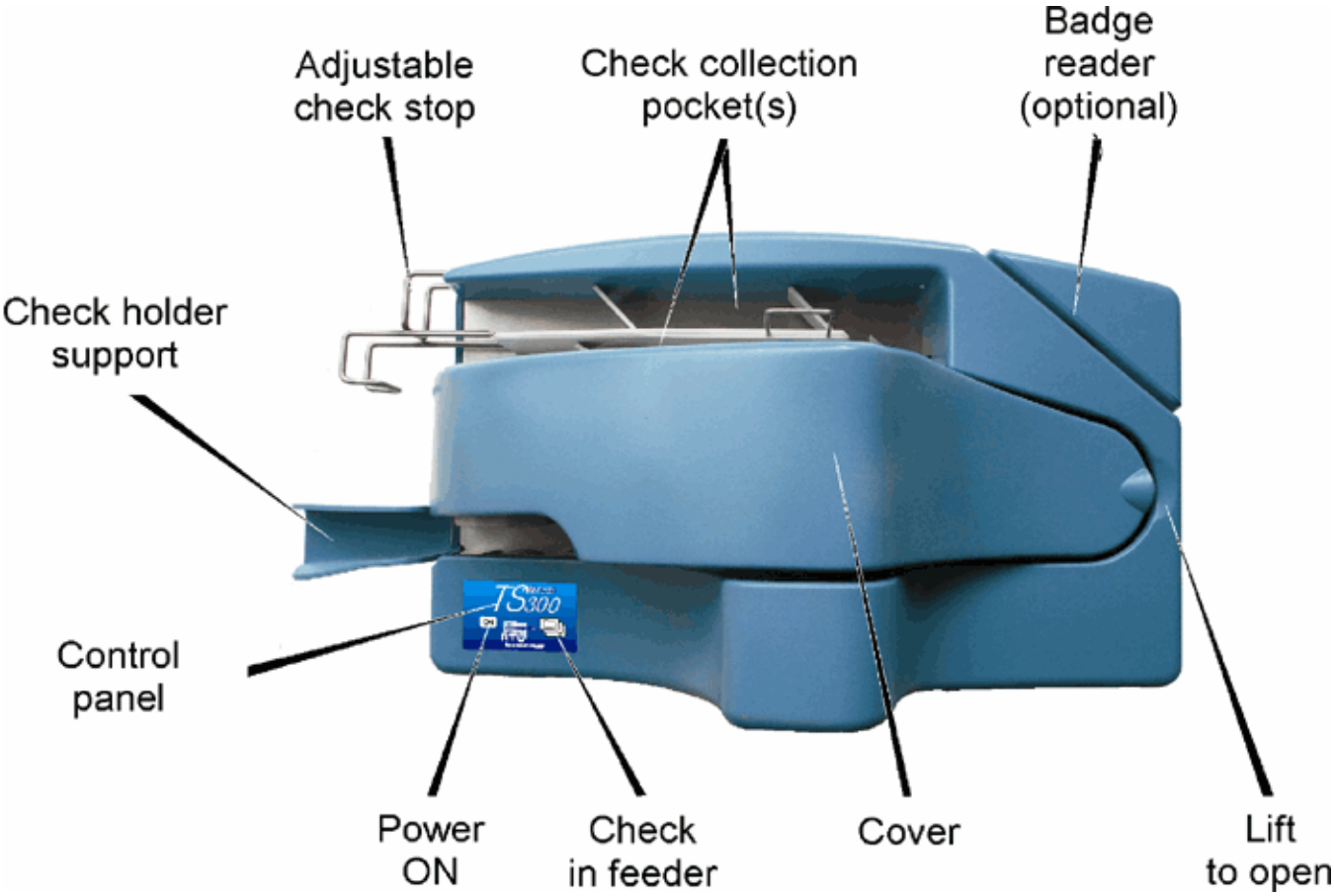


Figure 2 - Rear Deck Connections

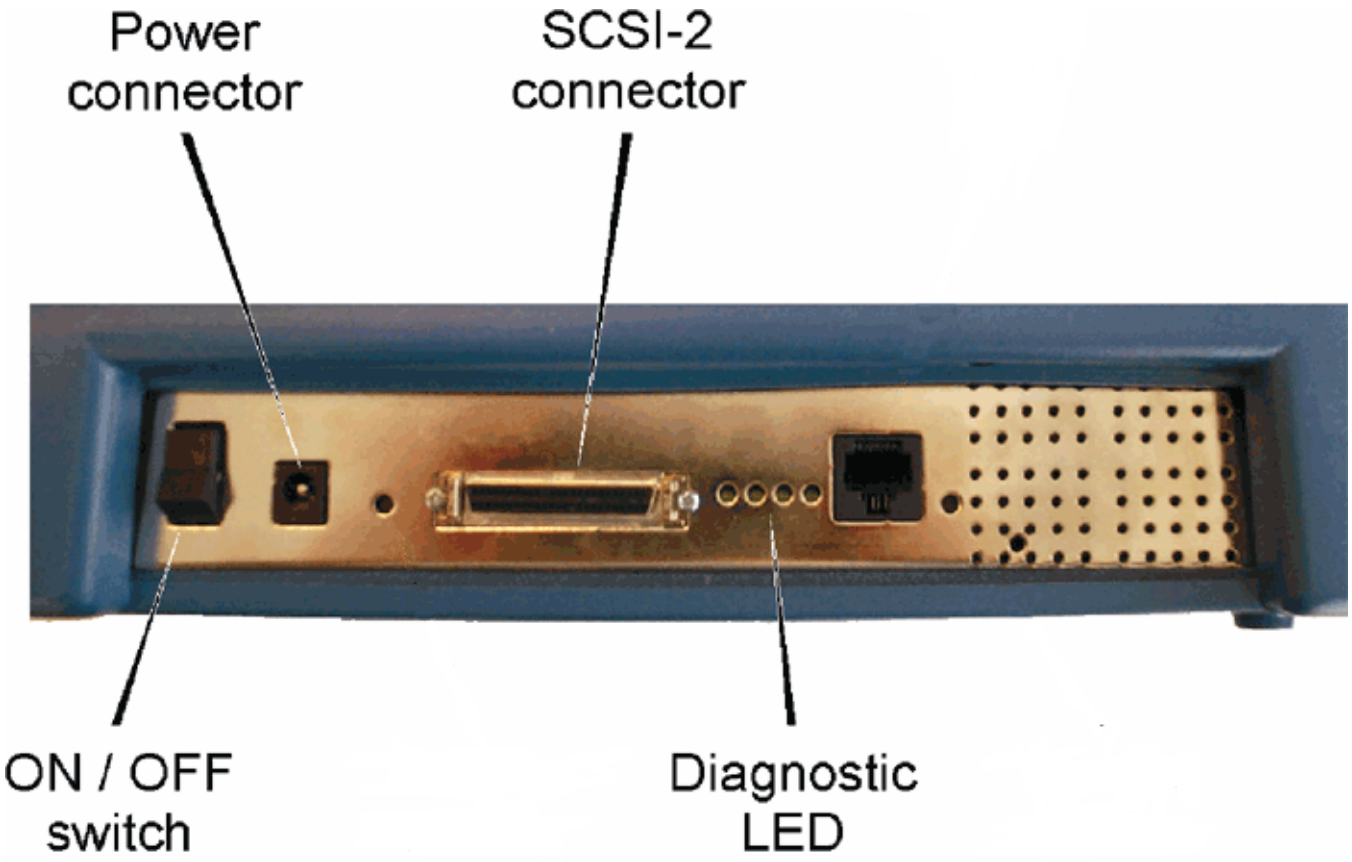
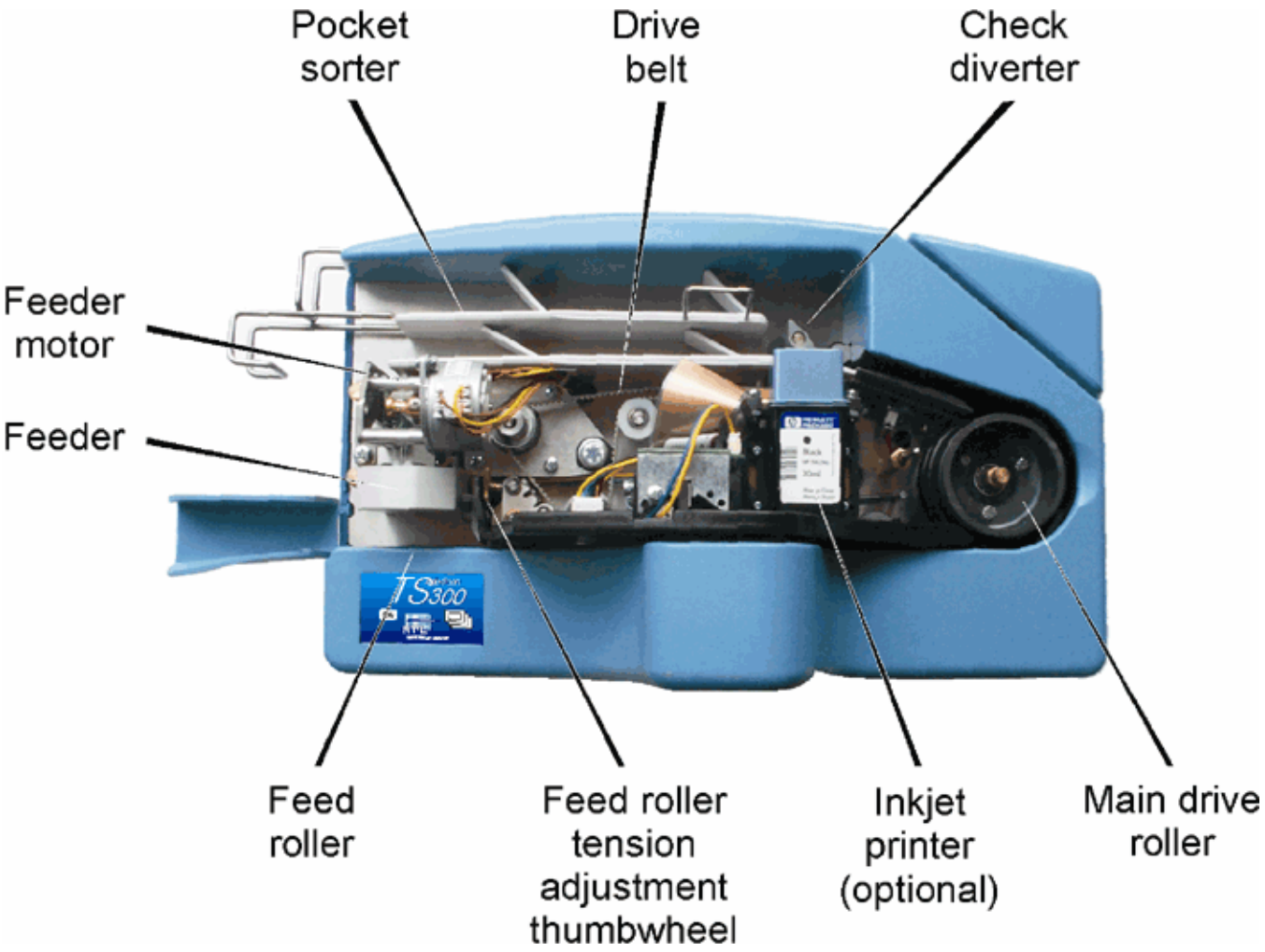


Figure 3 - Inside the TellerScan™ 350



Optional Equipment

The following hardware is optional:

- Standard Endorser Ink-jet printer (rear side of check)
- EBS Endorser (Endorse Before Scan Ink-jet printer)
- Badge Reader (Magnetic card reader)
- RIDO (Red Ink Drop Out for imaging)

Installing the Scanner

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. If it is not correct, do not install the scanner.**

Install the Scanner

To install the Scanner:

1. Install the Check Holder Support onto the body on the left side of the scanner. Insert tongue in groove and push downward.
2. Locate the scanner on a flat surface near the 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 Fig.2.)

Warning: **The magnetic field of 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 it to a source of power.

Install the SCSI Board

IMPORTANT: Any SCSI cards should only be installed by a qualified, trained technician.

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.

Connect the TellerScan™350 to the PC

To connect the scanner to the PC:

1. Make sure the PC is turned off.
2. Make sure the TellerScan™350 is turned off. (Verify that the green power indicator on the Control Panel is not lit; On/Off switch is located on Rear Deck. See Fig. 2.
3. Connect the SCSI Cable to the TellerScan™350 SCSI-2 interface connector on the Rear Deck. Ensure connector locks snap into place.
4. Connect the SCSI Cable to the interface card in the PC. Ensure connector locks snap into place.
5. Turn on the scanner. (Verify power by observing green LED on control panel.)

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

6 Turn on the PC.

Note: If windows finds a new Plug and Play device, the driver "*.inf" file is located on the Demo floppy.

Install the TellerScan 350™Demo Software (Diskette)

The TellerScan™350 Demo software is a basic scan program that allows you to operate the scanner, change different scanner settings, and view and store images on your PC's hard disk. The TellerScan™350 Demo program is not your system software; an additional application software program is required.

Create a 'TS350 Demo' folder on your hard drive, then copy the files from the diskette to the new folder. Double click on the executable file within the folder to start the Demo Program. Additional information may be contained in the read.me file located on the Demo Diskette.

Test Drive the TellerScan™350

The TellerScan™350 Demo software was created to provide you with a simple means to make sure that your system is operating properly, and to demonstrate the many features and capabilities of the TellerScan™350. Working together with your service organization, this software is also an excellent tool to diagnose possible problems.

Getting Started

When you wish to use the TellerScan™350, do the following:

1 Turn on the scanner, then wait for it to complete its startup tests.

Note: When you switch on the TellerScan™350, 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. Contact your service representative.

2 Turn on the PC.

3 Double-click on the TellerScan icon or select the TellerScan Menu Item.

How to Load Checks

You can load checks one-by-one or load a stack into the Automatic Check Feeder. 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:
Align the stack along the bottom edge by holding the stack loosely, then striking the bottom of the stack on a hard, flat surface.
Once aligned along the bottom edge, the leading edges must also be aligned 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 into the check hopper. If the stack will not fit into the check hopper at the default opening, gently push against the pressure plate to make the opening large enough to accommodate the thickness of your stack.

Note: The pressure plate in the TellerScan™350 is motor-driven, and when the hopper is empty, it will sit in a partially open (default) position. This feature permits the single check drop using only one hand.

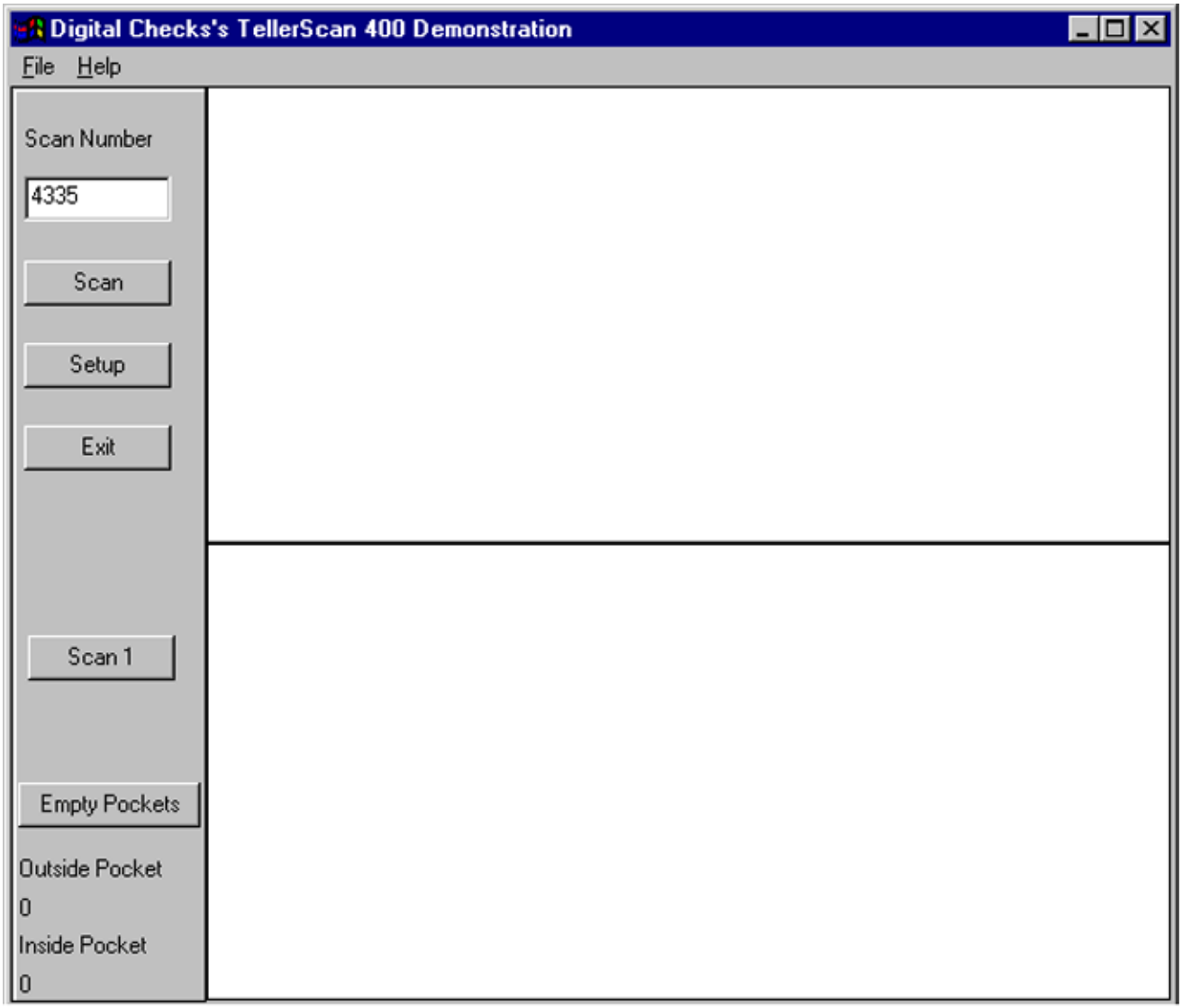
6 Make sure the "Checks in Feeder" LED is lit on the Control Panel.

How to Scan

You control the scanner using the buttons on the Demo Program screen.

- If you loaded a stack of documents, click the *Scan* button.
- If you loaded only one document, click the *Scan1* button.

Figure 4 - Main Screen for the TellerScan™350 Demo Program.



Scan Button - Scanning checks is easy with the TellerScan™350 (see Fig. 4): Click on the *Scan* button. 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 - Click this button to change the default values for Image Format, Magnetic Code, DPI, Display Settings, and Scan Settings.

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.

Changing The Setup Values

If you click the *Setup* button, a new menu appears where you can view or change the setup values.

Select any new settings, then Click *OK*

Figure 5 - Setup screen for TellerScan™ 350 Demo Program

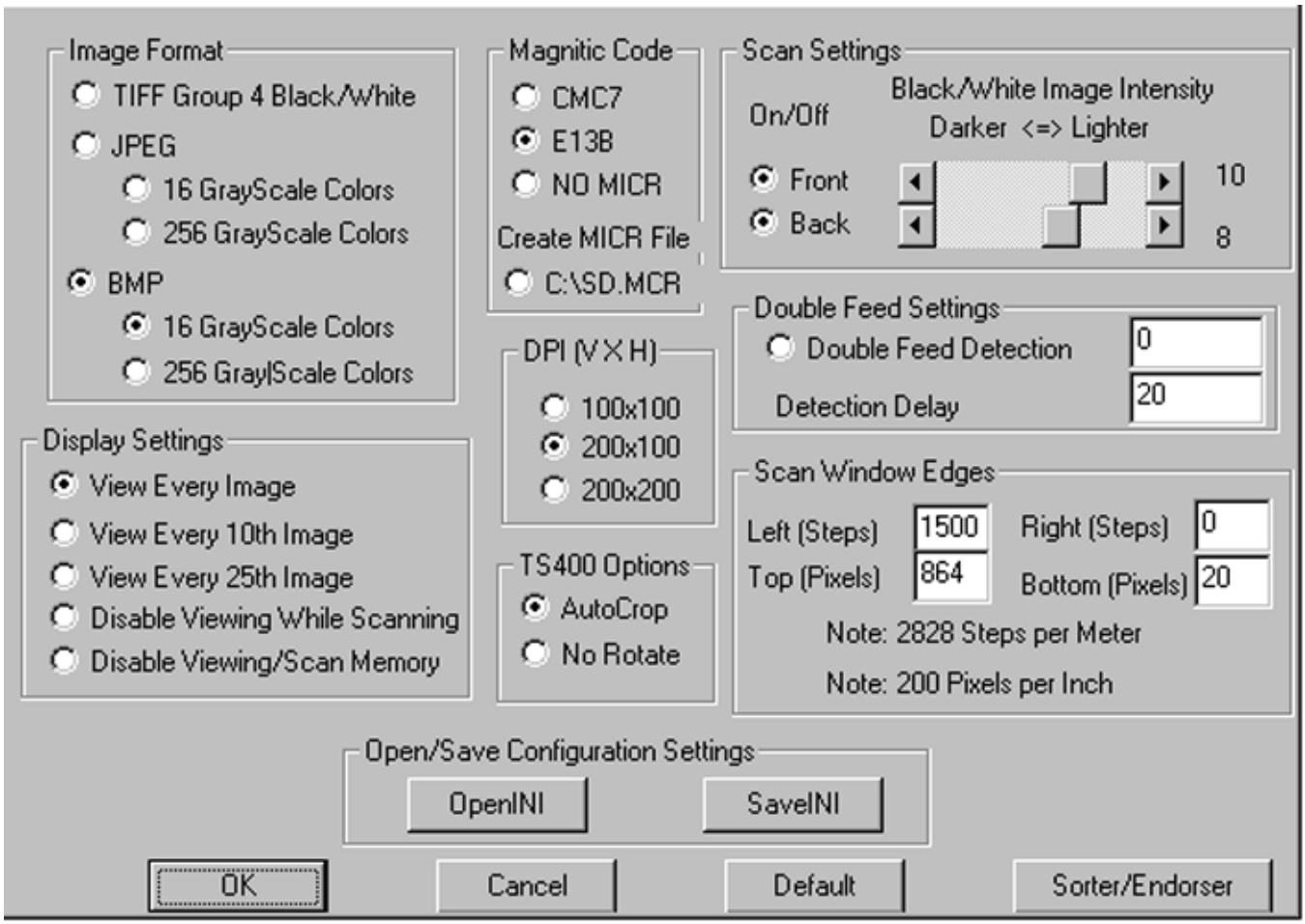


Image Format – Check images can be saved as TIFF (Tagged Image File Format), JPEG (Joint Photographic Experts Group), or BMP (Bitmap) files. Images can be saved as two types, 'Black & White' or 'Grayscale' (16 or 256 levels). Grayscale 256 levels will provide the best quality image, but will also result 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 – Select image viewing options. Turning off the image display can improve the scanner throughput rate if all you wanted to do was capture MICR data.

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.

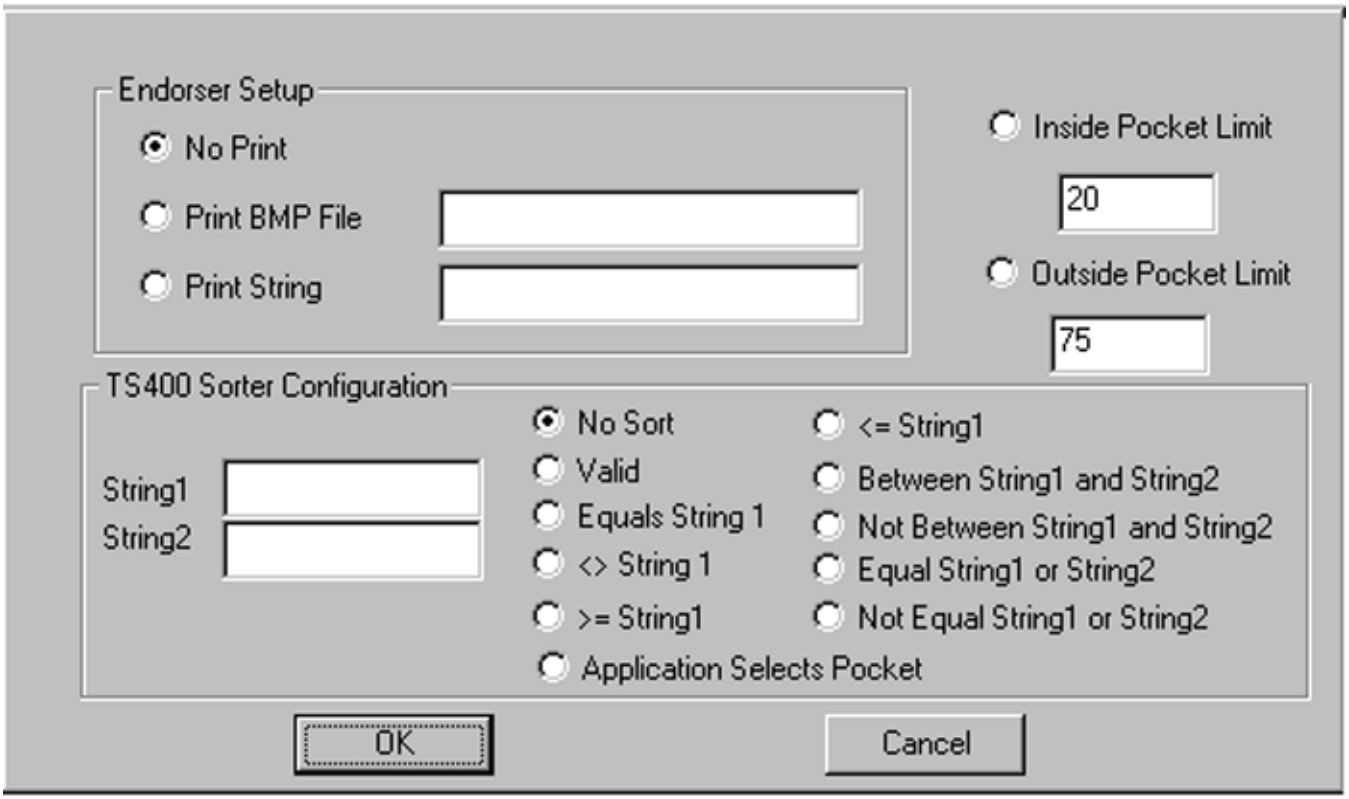
TS400 Options – Are not available on this scanner and do nothing.

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.

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

Figure 6 - Sorter/Endorser Screen for the TellerScan™ 350 Demo Program



Print BMP File – Enter path and name of a bitmap file for the endorser to print.

Note: File must be formatted to print head capability.

Print String – Enter letter and number characters for the endorser to print.

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

TS400 Sorter Configuration – Selections are not used by this scanner

Frequently Asked Questions

Question: Will the TS 350 handle both business and personal checks?

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

Question: Can documents other than checks be scanned in the TS 350?

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 350?

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

Question: Can the TS 350 be "daisy chained" with other SCSI devices on a PC?

Answer: No, this is not a standard connection configuration. Each TS 350 wants to have its own PC with SCSI Host Adapter and stand alone check scanning station.

Question: What is the SCSI ID for the TS 350?

Answer: SCSI ID 2 is the default.

Question: Is the TS 350 ISIS compatible?

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

Question: Does the TS 350 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 350 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 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 350 and the PC, is there anything special that a user may need to buy?

Answer: Yes, in order for the TS 350 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

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 (ICT P/N IS0012). This card is extremely effective in cleaning the scanner's magnetic head, track area, and rubber roller surfaces. Use immediately after opening 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.

Cleaning the TellerScan™350

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).

Replacing the Ink Jet Cartridge, EBS Endorser

When it's hard to read the endorsement due to poor ink coverage from the EBS (Endorse Before Scan Ink-jet printer), replace the ink jet cartridge. Here's how:

Note: The EBS TellerScan™350 Endorser uses a Hewlett Packard 51604A ink jet cartridge, NCR Direct number 529840.

1 Open the Center Cover

2 Remove the used ink-jet cartridge as follows:

- **a** Pull down the small plastic lever at the back of the cartridge.
- **b** Gently move the cartridge backwards so as to let the two pins come out of their seat.
- **c** Gently lift upward on the cartridge.
- **d** Discard the used cartridge.

3 Prepare a new ink jet cartridge as follows:

a Remove cartridge from its package.

b Do not touch the ink with your fingers or get it on your clothing.

c Follow the instructions included in the HP cartridge box.

4 Insert the new ink jet cartridge as follows:

a Slide the cartridge all the way into its cradle ensuring the 2 pins align with the mating holes.

b Using the tab provided, pull the small plastic lever all the way up to the lock position.

5 Replace the center cover.

Note: Remove the ink jet cartridge during transport and when the scanner is not used for long periods of time.

Replacing the Ink Jet Cartridge, Optional Endorser

When it's hard to read the endorsement due to poor ink coverage, replace the ink jet cartridge with a HP 51629A cartridge, NCR Direct number 530046.

Here's how:

1 Open the Center Cover

2 Remove the used ink jet cartridge as follows:

c Grab the top of the cartridge

d Gently pull up on the cartridge at the rear.

e 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™350 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:

1. Remove any document that is present in the input tray.
2. Try to advance the jammed document by pressing the EJECT button in your application program.
3. If the document does not move:
   a. Remove the central top cover by grasping it on the right side and lifting upward.
   b. Work documents free of the mechanism and clear the path of any jammed document and make sure that the rollers are free of paper and debris. Rotate the mechanism, if necessary, by manually turning the Main Drive Roller located on the right side. (See Fig. 3.)
4. Replace the cover and stack the documents back into the input tray.

Improper Feeding

If you experience feed problems with the TellerScan™350:

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 Fig. 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.
   - 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.
3. Close the Center Cover.

Double Feeding

The TellerScan™350 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:

1 Start the TellerScan™350 Demo Program.

2 Click on the *Setup* button.

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

4 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.

5 If the double feed problem persists, disable Double Feed Detection in the setup screen. Contact your qualified service technician

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, contact your qualified service technician.

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™ 350 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™350 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, contact your qualified service technician.

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. If the problem persists, contact your qualified service technician.

TS350 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	Default Pocket 80-100 documents; MICR Reject Pocket 10-30 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
200x100*	B/W, 4/8 Bit Gray Scale
200x200	B/W, 4/8 Bit Gray Scale
* Interpolated Mode	
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; ID selectable at the scanner default is 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 Fig. 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 send it with the scanner when you send it 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™ 350. Or you can use the depot level repair service. The following charts show how these depot services work:

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: 7728-3501
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: 7728-3501
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: 7728-3501
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.