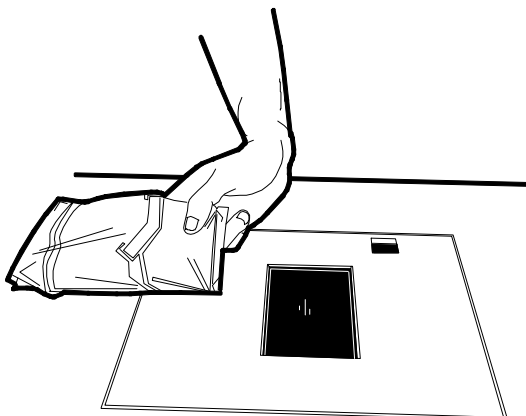**NCR**

7882 Scanner Installation and Owner Guide

12623

497-0419630
Release D
April 26, 2001

Information Products
RSD-Atlanta

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Contents

Revision Record

Date	Pages	Issue	Remarks
11/27/00	All	A	First printing.
02/01/01	All	B	Updated to current product.
03/19/01	All	C	Updated to current product.
04/26/01	12, 13, 32-37	D	Changed parameter default values

Obtaining Additional Information

Other Information Products	
Order Number	**Title**
B005-0000-1305	NCR 7882 Scanner User Guide
B005-0000-1306	NCR 7882 Scanner Repair Guide
BST0-2121-74	NCR Scanner Programming Tags
BD20-1074-A	NCR Scanner/Scale Interface Programmer's Guide

How To Obtain Information Products

Web Sites

- http://inforetail.AtlantaGA.NCR.COM (NCR only)
- http://www.info.NCR.COM (Anyone)

Online Order

- Connect System (NCR only)

Phone Order

- 800-543-2010 (US area)
- 622-3727 (VOICEplus)
- 44-181-242-5350 (International)

Fax Order

- 937-445-6245 (US area)
- 44-181-242-5355 (International)

E-Mail

- Information+Products.Publishing@ DaytonOH.NCR.COM (US area)
- Management.Order@UnitedKingdom. NCR.COM (International)

MS-Mail

- Publishing, Information+Products (US Area)

SMTP

- Order, Management UnitedK (International)

Mail Order

- NCR Corporation IPP-Dayton
  1700 S. Patterson Boulevard
  Dayton, OH 45479 USA
- NCR Corporation
  915 High Road
  North Finchley
  London N12 OHN United Kingdom

Obtaining Technical Assistance

Technical assistance if available as follows.

- Technical assistance in the United States: 1-800-262-7782
- Technical assistance in other countries: call your local NCR office
- To order parts: 1-800-438-7830

Note – If you find any defective parts during installation of a new scanner, contact the factory at one of the following.

- Phone: 353-1-8484222 – Extension 2317
- Fax: 353-1-8484900 – Attention Quality
- E-mail: slrdubquality@ir.slr.com

NCR 7882 Scanner Mountings

NCR 7882 Scanner

The NCR 7882 Scanner is a small, compact laser scanner with many of the same features as the larger scanners. It can be mounted horizontally in a checkstand or vertically above the checkstand. Various mounts are available for the 7882.

Vertical Mount

Scanner

Vertical Mount
With Top Plate

Top Plate
(Horizontal Mount)

Horizontal Mount
Flat Plate Adapter

Horizontal Mount
7820 Adapter

Horizontal Mount
7852 Adapter
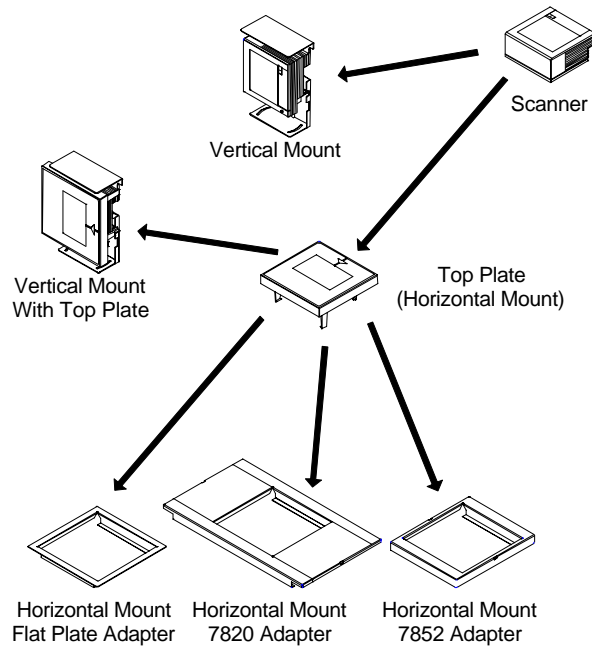
18681

Installation Instructions

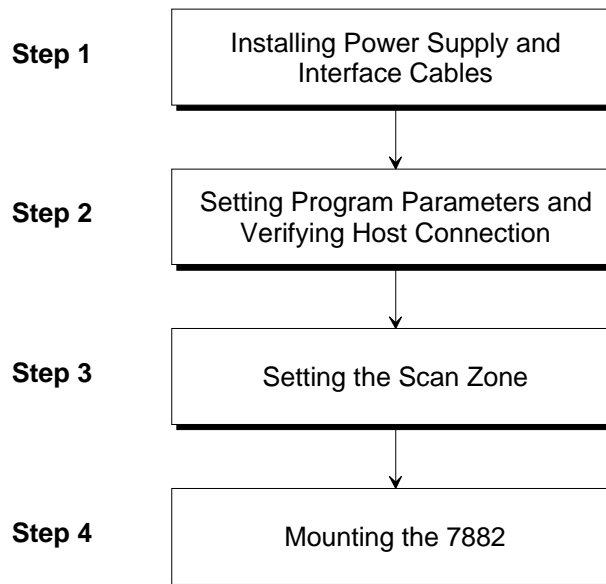When installing an NCR 7882, it is recommended that you first mount the Power Supply and run all the cables. After connecting the unit to the host terminal, make any necessary programming changes and scan some good tags to verify that the scanner is communicating with the host terminal. After verifying that everything is working correctly, mount the unit in the checkstand. If the NCR 7882 does not work properly, refer to the problem correcting section in this document: *Correcting Scanner Problems.*

The following flowchart shows the sequence of installation steps. Detailed descriptions of each step follow.

Step 1

Installing Power Supply and Interface Cables

Step 2

Setting Program Parameters and Verifying Host Connection

Step 3

Setting the Scan Zone

Step 4

Mounting the 7882

18682

Step 1 - Installing Power Supply and Interface Cables

Connecting the Cables to an NCR 7882 Scanner

The NCR 7882 can be powered through a wall adapter Power Supply (shown in the following illustration) or directly from the host terminal. The NCR 7882 automatically detects which power source is being used. In either case, the input voltage to the NCR 7882 should be +12Vdc. The NCR 7882 current never exceeds 600mA.

1. Locate the Power Supply in the checkstand at least 10 inches (25.4 cm) from the 7882 installed position. Be sure to locate the Power Supply where spilled liquids cannot fall onto it.
2. Install the Interface Cable.
3. Fasten a Tie-Wrap around the Power Cable and the Interface Cable to help secure the Power Cable.

Plastic Top Plate

7837 Hand-Held Scanner

Power Supply

7882 Scanner

Host Terminal

Power Cable

Interface Cable
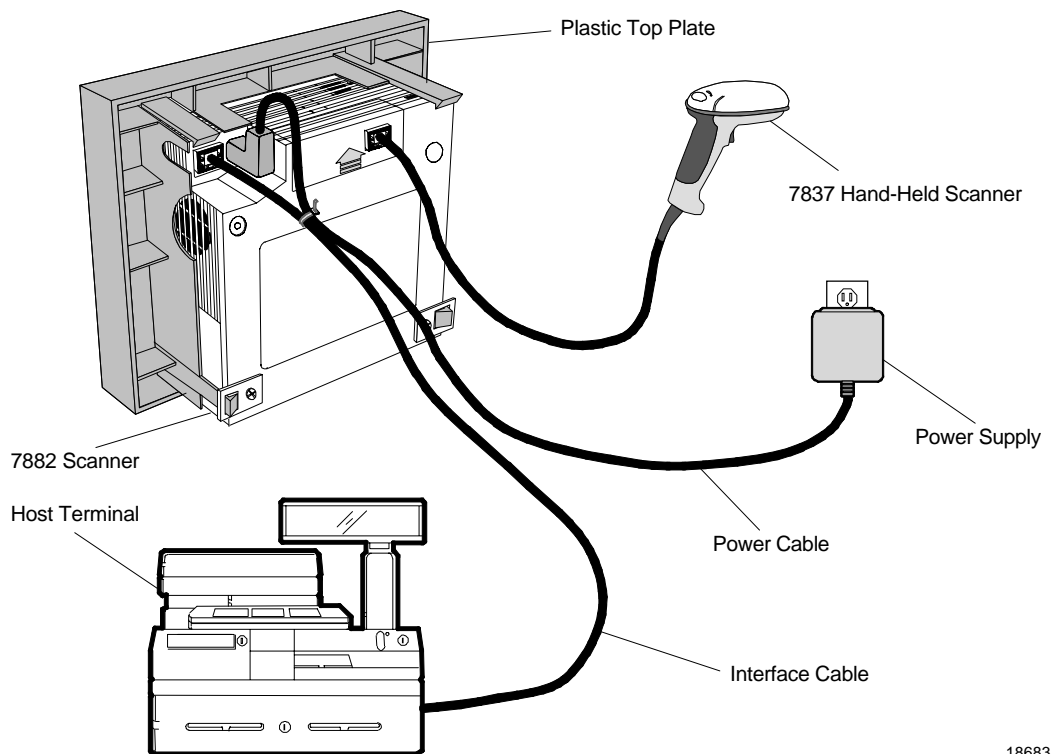
18683

Auxiliary RS-232 Port

The Auxiliary RS-232 Port provides a connection for an RS-232 device such as an NCR 7837 Hand-Held Scanner. The following table gives wiring information about the connector.

Auxiliary RS-232 Port	
Pin Number	Signal Name
1	+5 Vdc
2	NC
3	GND
4	TXD
5	RXD
6	+ 12 Vdc
7	CTS
8	RTS
9	Frame
10	Frame

NCR 7835/7836

- 1416-C313-0040 – Interface Cable
- 1416-C397-0010 – Extension Cable

NCR 7837

- 1416-C445-0025 – Interface Cable
- 1416-C397-0010 – Extension Cable

The NCR 7882 auxiliary RS-232 port hardware is limited to the following fixed parameters.

Baud Rage	9600
Parity	Odd
Stop Bits	1
Number of Data Bits	7
Hardware Handshaking	None
Terminator Character	CRLF
UPC-A Prefix Character	d
UPC-E Prefix Character	d
EAN 8 Prefix Character	d
EAN 13 Prefix Character	d
Code 128 Prefix Character	f
Code 39 Prefix Character	a
Interleaved 2 of 5 Prefix Character	b

Note – ASCII data cannot be sent from the auxiliary RS-232 port when the NCR 7882 is set for OCIA Short format. In this case, the 7882 generates an error beep.

When an NCR 7836 is attached to an NCR 7882, the 7836 requires the following programming.

- Reset to serial (default values) – Label ZA
- Enable code ID (default values) – Label FB

Step 2 - Setting Program Parameters and Verifying Host Connection

Now you need to turn on the 7882. After making any necessary program changes, scan a few tags to verify that the 7882 is communicating with the host terminal.

Turning On the 7882

The 7882 does not have an On/Off switch. Use the circuit breaker switch in the checkstand that supplies power to the unit as the On/Off switch. Put this switch in the On position.

Programming the Communication Parameters

Caution: Some host terminals can corrupt the 7882 program if they are running and are connected to the 7882 while you are making program changes. Either turn off the host terminal or disconnect the interface cable before scanning any programming tags.

If the Interface Cable is provided as a kit rather than being included with the 7882, you can set the communication parameters by scanning the bar code on the label on the cable package. Standard defaults are set for most RS-232 or OCIA cables. If the cable is for a specific host terminal, all the necessary parameters required for that host terminal are set. The bar code label on the Interface Cable package must be the first bar code scanned after applying power to the 7882.

If the Interface Cable came with the 7882, the communication parameters are probably correct and you should not need to make any changes to these parameters. However, if the 7882 does not communicate with the host terminal, scan the appropriate tag from the following set of communication protocol tags.

Note – When scanning bar codes on the following pages, be sure to completely cover all bar codes except the one you are scanning.

OCIA Single Cable
NCR 2127, 2154, 2155, 2156, 2157, 2760, 7050, 7051, 7052, 7053, 7054, 7450, 7070

||||||| |||| ||| ||| ||| ||| |||| |||
1 P 1 4 1 6 C 0 1 1 0 0 4 0

RS-232
NCR 2170, 7452, 7445
ICL 9518/200, 9520/150,
MicroBilt MB-8010 Checkreader,
9-Pin D Shell, 6-Pin Modular

||||||| |||| ||| ||| ||| ||| |||| |||
1 P 1 4 1 6 C 0 1 9 0 0 4 0

IBM Format
IBM 4683/4 with Port 17,
4694 Models 244/245 Port 9A,
4694 Models 001,004,024 Port 9E,
4693, 4682/3/4 Port 5B

||||||| |||| ||| ||| ||| ||| |||| |||
1 P 1 4 1 6 C 0 2 0 0 0 4 0

OCIA Short Format
NCR 2113, 2126, 7058

1 P 1 4 1 6 C 0 1 4 0 0 4 0

OCIA Long Format
NCR 1255, 2151, 2152, 2552, 2557, 2950

1 P 1 4 1 6 C 0 2 6 0 0 4 0

RS-232 Beetle
SNI Beetle 3L

1 P 1 4 1 6 C 2 6 3 0 0 4 0

RS-232 Gilbarco
Gilbarco Controller

1 P 1 4 1 6 C 2 3 7 0 0 4 0

RS-232 Ruby
Verifone Ruby (4M)

1 P 1 4 1 6 C 2 5 4 0 0 4 0

RS-232 Wayne
Wayne Controller

1 P 1 4 1 6 C 2 3 6 0 0 4 0

Programming Defaults

Scanning the **Default** programming tag sets most program parameters to factory defined values as shown in the following chart. However, some parameters do not have default values so they are not changed, they stay as they are programmed.

01 Communications Protocol	
Protocol	No default value – remains as programmed

11 Good Read Tone	
Tone On/Off	On
Tone Frequency	Choice 6 of 8 Levels
Tone Length	Choice 3 of 16 Levels
Tone Volume	Choice 4 of 8 Levels
Not-On-File Volume	Choice 2 of 8 Levels

12 Timers	
Lockout Time	750 Milliseconds
Restart Lockout Timer	Off
Active Time	15 Minutes

13 Bar Codes – 1	
UPC/EAN	Enable
Version D	Disable
Extend UPC-A To EAN-13	Disable
Extend UPC-E To UPC-A	Disable
Periodical Codes	Disable
Periodical Code Extension	2-Digit & 5-Digit
Send Data	Data As Decoded

14 Bar Codes – 2	
Code 39	Disable
Minimum Characters Allowed	8
Full ASCII	Disable
Check Digit Present	Disable
Transmit Check Digit	Disable
Allow 1- or 2-Character Tags	Disable

15 Bar Codes – 3	
Interleaved 2 of 5	Disable
Bar Code Length	Range Check
Value 1	08
Value 2	16
Check Digit Present	Disable
Transmit Check Digit	Disable

17 Bar Codes – 4	
Code 128	Disable
Minimum Data Characters	3
UCC 128	Disable

16 Label Identifiers

Identifier Type	Unique Prefix
Common Byte 1	5D
Common Byte 2	42
Bar Code Type	No Default value – remains as programmed

	UPC-A	UPC-E	EAN-8	EAN-13	Code 39	Code 128	I 2 of 5
Common Byte	0	0	0	0	2	2	2
Unique Identifier	41 Hex	45 Hex	46 Hex	46 Hex	31 Hex	33 Hex	32 Hex

20 RS-232 Parameters – 1

Baud Rate	9600
Parity	Odd
Stop Bits & Character Length	1 Stop Bit, 7-Bit Character
Handshake	RTS High Wait For CTS

21 RS-232 Parameters – 2

BCC Options	Disable
Interface Control	None
Check Digit	Enable UPC-A, Enable EAN-8, Enable EAN-13, Disable UPC-E

22 RS-232 Prefix Byte

Prefix Byte	Disable
ASCII Code	02

23 RS-232 Terminator Byte

Terminator Byte	Enable
ASCII Code	03

24 RS-232 Communications Options

Message Delay	10 Milliseconds
Normal Or Eavesdrop Mode	Normal Mode

21 Miscellaneous Parameters

IBM Tone Control	Enable
IBM Rexmit Control	3 Times
IBM Tag Data Format	Hex

Making Other Program Changes

If you still need to make program changes after setting the communication parameters, you can enter information directly from the Programming Worksheets. The Programming Worksheets, located at the back of this book, identify all the available program parameters. Each worksheet relates to a specific programming mode. Most programming options have defaults, identified by a heavy box, that are determined at the factory. Scanning the **Default** tag as the first tag after applying power to the 7882 sets the parameters to these values.

Changing the 7882 program is accomplished by scanning the proper sequence of programming tags, which are included with the unit. Following are three major steps for making program changes.

1. Enter the Base Programming State by scanning the **Programming Mode** tag as the first tag after applying power to the 7882.
2. Select a Programming Worksheet and enter its parameter data by scanning the appropriate Hex tags.
3. Save the program by scanning the **Save and Reset** tag.

Note – In most instances the factory determined defaults are the correct parameter setting. However, if you do need to make changes, it is recommended that you first set all parameters to default values, then make any necessary changes to the appropriate parameters.

Scan Sample Tags

Now you should scan some sample tags to verify that the 7882 is communicating with the host terminal. Following are four good tags that you can use. After verifying that the 7882 is communicating properly with the host terminal, continue with the installation.

Note – For maximum performance, full size labels must be used. The *UPC Symbol Specification Manual* gives the exact size requirements for UPC labels. If the bar height is less than specified, more precise presentation to the scanner is required, reducing productivity.

UPC-A

```
1 77062 37920 4
```

Code 39

```
1 7 7 0 6 2 3 7 9 2 0
```

Code 128

```
1 7 7 0 6 2 3 7 9 2 0
```

Interleaved 2 of 5

```
0 1 7 7 0 6 2 3 7 9 2 0
```
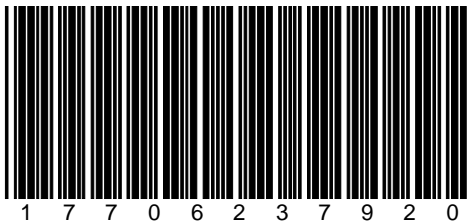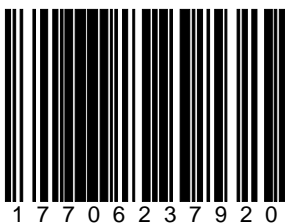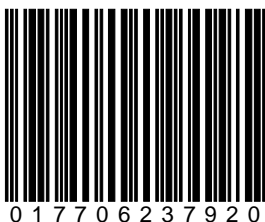
Determining Label Quality

Many labels in a typical retail environment are unreadable. The following illustration shows some of the common problems. Vendors and printers regularly supply products to the market with bar codes that are overprinted, underprinted, or truncated. Some labels have missing margins. Others may be printed around the corners of packages, or on media not likely to remain flat when picked up.
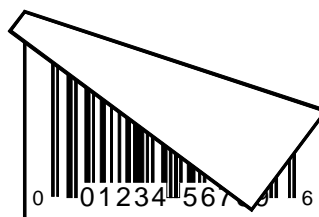
Bar Code Scratched   **Bar Code Folded**   **Bar Code Truncated**

Bar Code Torn   **Poor Color Contrast**   **Red Bar Code On Red Background**

R0026

The readability of a label depends on variables such as size, placement, color, paper type, ink viscosity, and package coatings. The middle of a printing run can yield erroneous labels due to the many variants involved. In particular, poor color contrast and marginal print quality can make a label hard to read.

UPC bar code requirements are identified in the **UPC Symbol Specification Manual** that is published by the Uniform Code Council, Inc. Contact the following for a copy of this document.

Uniform Code Council, Inc.
8163 Old Yankee Road, Suit J
Dayton, OH 45458
Phone: 513-435-3870

Contact the following for information on Code 39 or "3 of 9" bar code labels.

AIM – USA
634 Alpha Dr.
Pittsburgh, PA 15238-2802
Phone: 412-963-8588

EAN bar code requirements are identified in **General Specification for Article Symbol Marking**, Copyright EAN-1977.

Step 3 - Setting 7882 Scan Zone

The scan zone on a 7882 Scanner can be set to horizontal or vertical. Changing the scan zone changes the angle of the scan lines coming from the scanner.

Vertical
Scanning

Horizontal
Scanning
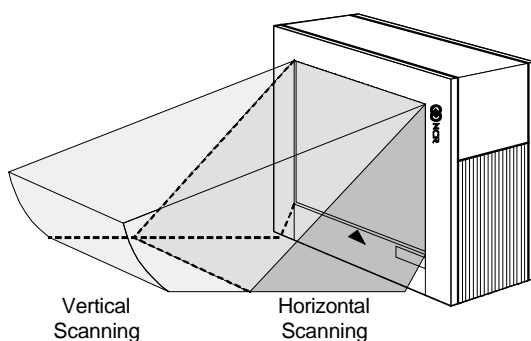
16011

You change the scan zone by turning the screw on the bottom of the cabinet. Be sure to turn the screw all the way in one direction or the other, do not leave it turned part way.
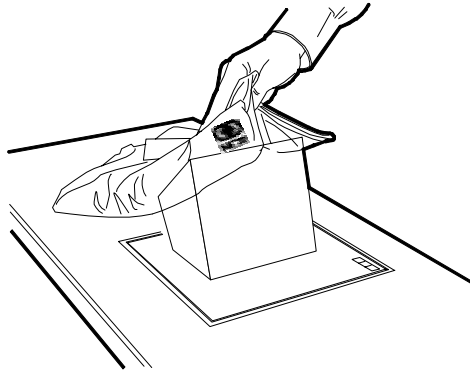
Scan Zone
Adjusting Screw
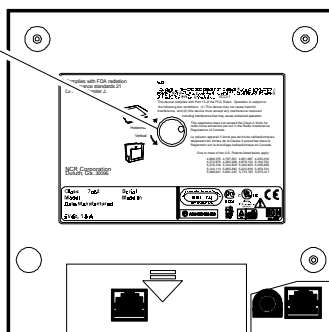
18684

When selecting the scan zone, you must also consider how you are mounting the scanner, horizontally or vertically. This permits you to optimize the performance for your particular installation. Following are four common installations that identify the installation type and the scan zone setting. They are given in order of scanning efficiency with the first being the most efficient, and the last being the least.

Horizontal - Pass-by Scanning

This installation provides the most efficient way to scan items. It is typically used in checkouts where speed is extremely important. In this installation, the operator slides items from the input area on the checkstand, across the scanner, and to the output area on the checkstand.

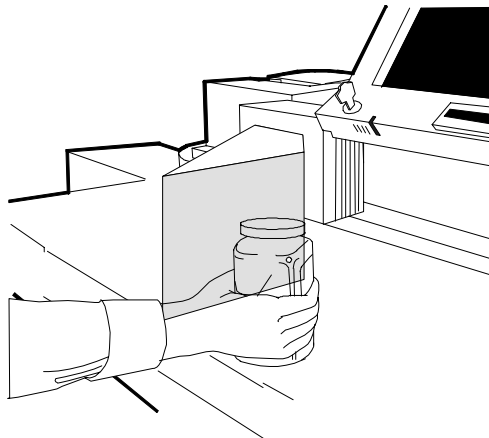Typical Installation -
   Hyper/Super Market

Scan Zone - Horizontal

Installation - Horizontal

16012

Vertical - Pass-by Scanning

This installation is used where the checkstand is not large enough to mount the scanner horizontally, but pass-by scanning is needed. In this installation, the operator slides items from the input area on the checkstand, past the scanner, and to the output area on the checkstand.

Typical Installation -
   Drug Stores
   Super Market in Europe
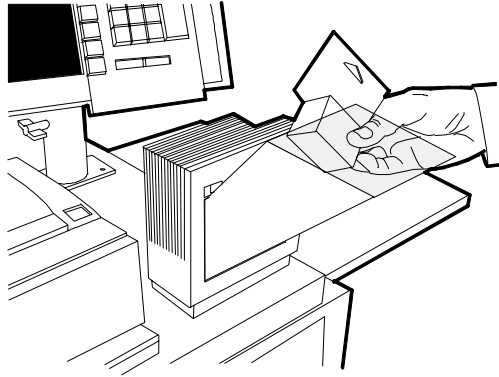   With Operator Seated

Scan Zone - Horizontal

Installation - Vertical

OR
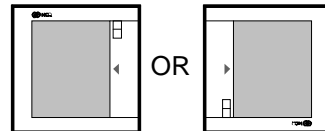
16013

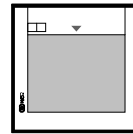# Vertical - Presentation Scanning from Top

This installation is used on small checkout counters that do not have enough room for pass-by scanning. Here the operator picks up the item, presents it toward the top of the scanner, then bags the item all in one motion.

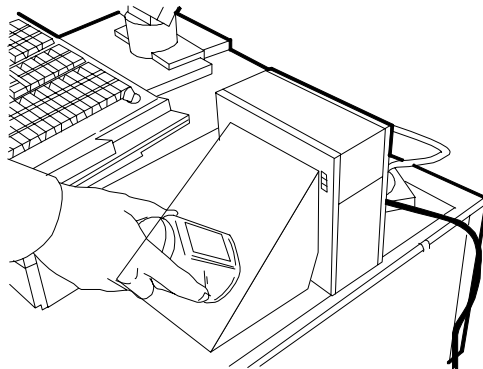Typical Installation -
Specialty Store

Scan Zone - Vertical

Installation - Vertical
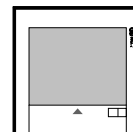
16014

Vertical - Presentation Scanning from Bottom

This installation is used on very small checkout counters. In this installation the operator picks up the item, presents it toward the bottom of the scanner, then bags the item all in one motion.

Typical Installation -
Convenient Store

Scan Zone - Vertical

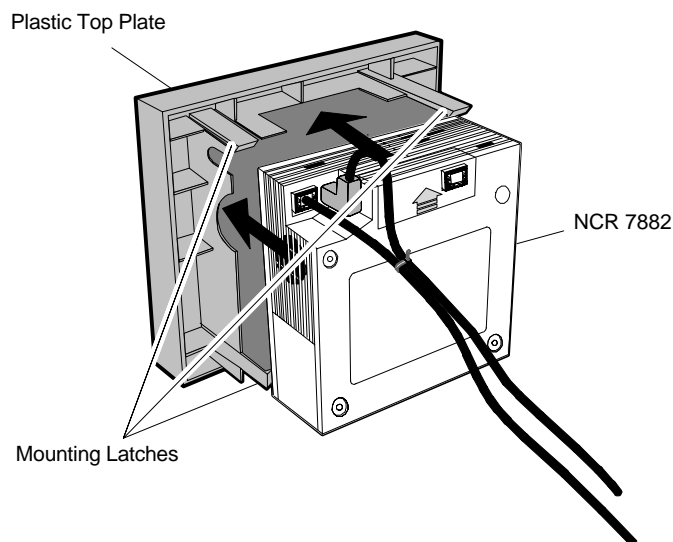Installation - Vertical

16015

Step 4 - Mounting the 7882

Rubber Feet

The NCR 7882 Scanner is supplied with rubber feet that can be attached to the sides of the cabinet. This permits the scanner to sit on the checkstand in a vertical position without being mounted to the Vertical Mounting Bracket. There are round recesses in each side of the cabinet that accept the rubber feet. Remove the paper backing from the rubber feet and stick them to the cabinet in the round recesses.

Plastic Top Plate

Your installation may use a Plastic Top Plate. Make sure no rubber feet are attached to the cabinet.

1. Properly align the scanner with the Plastic Top Plate.
2. Fasten the scanner to the Top Plate making sure that all four latches are securely latched around the scanner.
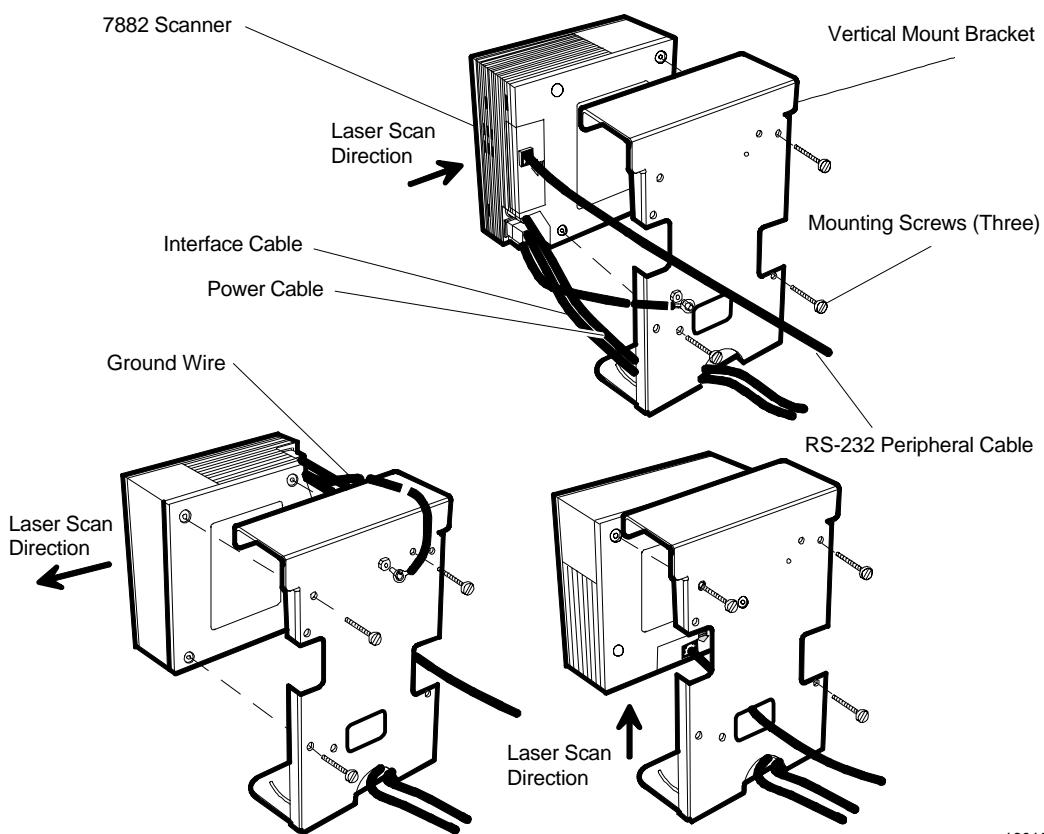
Plastic Top Plate

NCR 7882

Mounting Latches

18718B

3. Install two Latch Clips – **horizontal installation only**. These clips secure the NCR 7882 to the Plastic Top Plate in case something falls on the assembled unit.
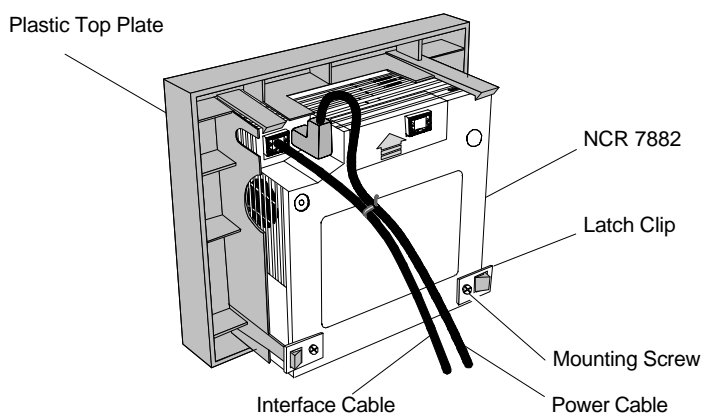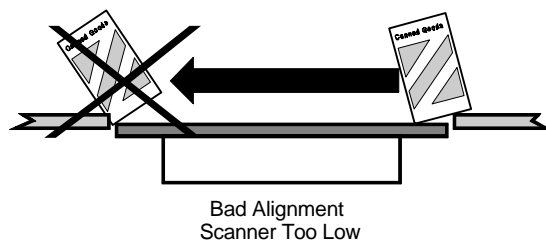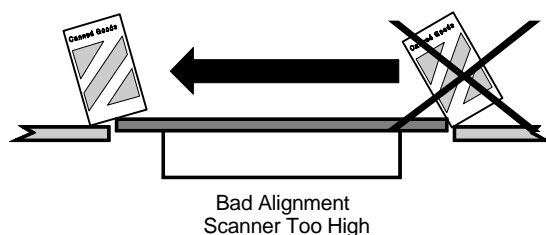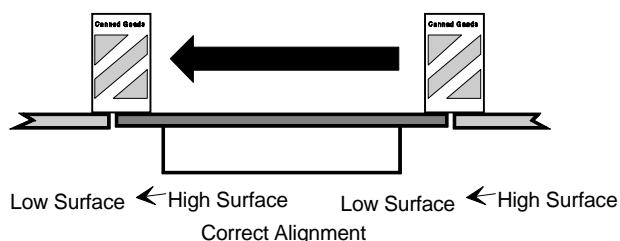

18749

Vertical Mounting Bracket

16016

Checkstand Cutout

1. Put the NCR 7882 into the hole in the checkstand. Diagrams in *NCR 7882 Specifications* show the various dimensions of the hole.

2. Align the 7882 to the Checkstand. The leading edge of the Top Plate must be flush or up to 1/16 in. (0.15 cm) below the top of the checkstand. The trailing edge of the Top Plate must be flush or up to 1/16 in. (0.15 cm) above the top of the checkstand.

Low Surface ← High Surface   Low Surface ← High Surface

Correct Alignment

Bad Alignment
Scanner Too High

Bad Alignment
Scanner Too Low

14231

Checkpoint Cable

If you are installing and NCR 7882 Scanner, with the Checkpoint feature, on a Vertical Mounting Bracket, route the Checkpoint Cable along side the Interface Cable.

Note – If the installation includes the Checkpoint feature, a representative from Checkpoint must connect the Checkpoint Cable to the Checkpoint equipment after you install the NCR 7882.
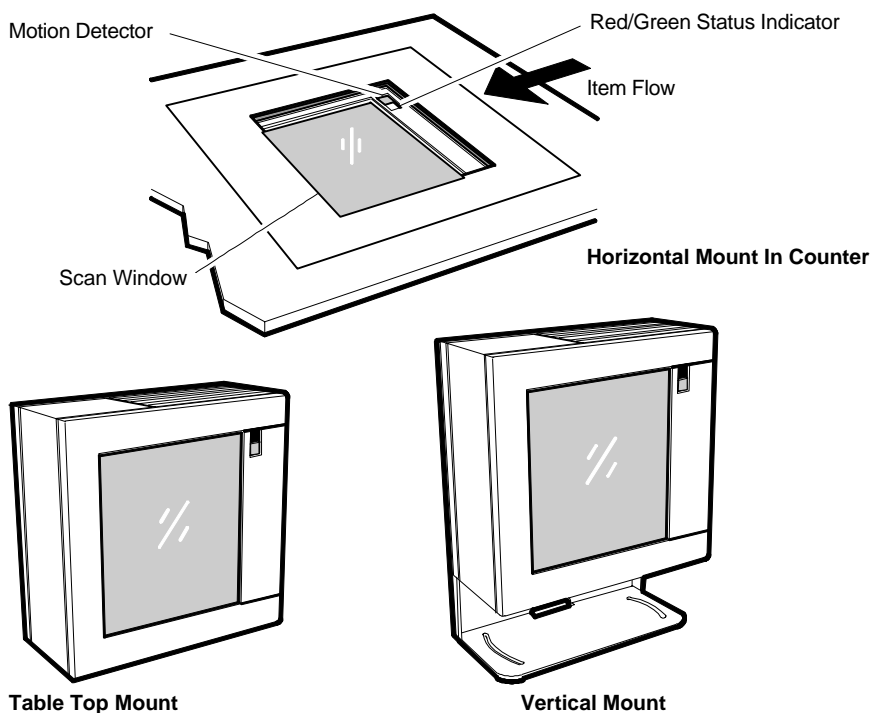
Cable Clamps

The NCR 7882 is supplied with two Cable Clamps (006-0687102). Install these clamps under the checkstand as needed to support the cables and keep them out of the operator's way.

Operating the Scanner

The NCR 7882 is a fixed position device that is not handled or moved by the operator during operation. It is maintained and serviced by trained service personnel only. The operator has no access to any laser module components.

The 7882 does not have a power switch. However, you turn it on and off by using the circuit breaker switch, located in the checkstand, that supplies power to the unit. Be sure this switch is in the On position.

The Red Indicator is on when the 7882 is ready. When the scanner reads a bar code, the Red Indicator turns off and the Green Indicator turns on. Nothing happens if the bar code is not read. The correct way to do pass-by scanning is to just slide the item past the scan window without lifting the item. With presentation scanning, you lift the item, move it straight toward the scan window, then bring the item back away from the scanner.

Motion Detector

Red/Green Status Indicator

Item Flow

Scan Window

Horizontal Mount In Counter

Table Top Mount

Vertical Mount

11959

Cleaning the Scanner

Keeping the scan windows clean helps keep the read rate exceptionally high. During normal operation the scan windows get dirty, and if you permit the dirt to accumulate, performance degrades to the point where the scanner cannot read bar codes. Use a soft cloth to clean the scan windows, using a common, non-abrasive, liquid window cleaner. Be sure to spray the cleaner onto the cloth, not directly onto the scanner.

Wiping Action
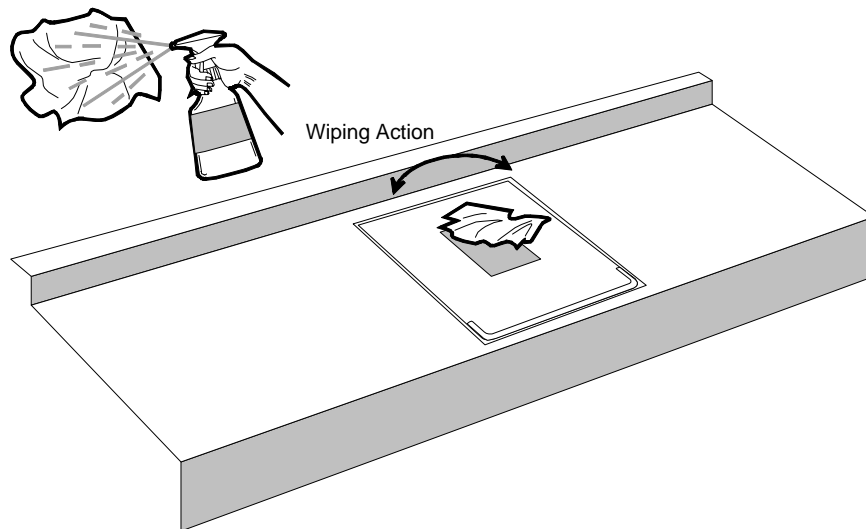
15937

Correcting Scanner Problems

When the NCR 7882 is first turned on, several diagnostic tests are run to check the status of various components. If a failure occurs, a series of beeps and flashes of the Green Status Indicator identify it. The number of beeps (flashes) identifies the problem. The problem indication is repeated continuously with a 3-second pause between each indication series. Following the first problem indication, the beeps are turned off and only the Green Status Indicator flashes to identify the problem.

If the diagnostics identify a problem, you must have the scanner repaired. Refer to *Obtaining Technical Assistance* on page 3. Although several conditions can be identified, following are the most common.

Green Status Indicator	Tones	Problem	Suspect Component
2 Flashes	2 Beeps	RAM – Write / Read failure	Printed Circuit Board
5 Flashes	5 Beeps	Motor running too slow	• Motor • Printed Circuit Board
6 Flashes	6 Beeps	EEPROM failure – cannot load contents into memory	Printed Circuit Board
12 Flashes	12 Beeps	ROM sum check failure	Printed Circuit Board

There are other conditions that are not identified by the diagnostics when you turn on the NCR 7882. The following chart identifies some of the more common problems.

Problem	Status Indicators	Tone	Possible Cause	Corrective Action
Scanner does not operate	Red Off Green Off	Off	No power to the unit	• Check the electrical outlet for proper power • Verify that AC Power Cord is properly connected
Scanner is quiet	Red & Green flashing continuously	Off	Sleep mode	• Pass anything in front of the motion detector
Scanner reads only two labels	Red flashing Green Off	Off	Communications is IBM 468x and scanner is off-line	• Verify that IBM host is turned on • Verify that IBM host is recognizing the 7882 • Verify that the interface cable is properly connected
Scanner reads only two labels	Red On Green Off	Off	7882 is not communicating with the host	• Check for expected communication protocol • Check host terminal for proper operation • Check interface cable connections
Scanner does not read any labels	Red flashing rapidly	Off	Scanner has been disabled by the host terminal	• Terminal should enable scanner later in the transaction
Scanner does not read any labels	Red On Green Off	Off	Internal failure	• Remove power from 7882 and then supply again • Have scanner repaired

Interface Information

Interface Connector

Ground Lug

10 1
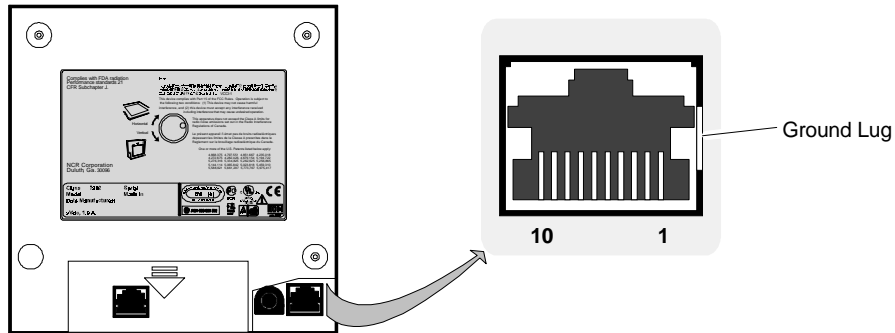
Pin	OCIA	IBM	RS-232	WEDGE
1	RDATARTN	NC	+12Vdc (IN) OR DSR (IN)	NC
2	RDATA/	NC	DTR (OUT)	KBCLK/
3	SDATA/	NC	TXD (OUT)	NC
4	CLKOUT/	NC	RTS (OUT)	NC
5	CLKIN/	NC	CTS (IN)	NC
6	TERMRTN	NC	RXD (IN)	NC
7	NC	TMPWR	NC	PCCLK/
8	NC	TRA	NC	PCDATA/
9	NC	TRB	NC	
10	GND	GND	GND	

19013

Most Common Interface Cables

- 1416-C011-0040   OCIA Single Cable
- 1416-C019-0040   RS-232 to PC
- 1416-C020-0040   IBM port 17
- 1416-C070-0040   IBM port 9A/9E
- 1416-C142-0040   IBM port 5B
- 1416-C653-0040   RS-232 powered from NCR7448/7451 POS
- 1416-C676-0030   PS/2 Keyboard wedge

Communications Protocol

The Communications Protocol function identifies the communications protocol the NCR 7882 is using. Scan the **Diagnostics Mode** and **Hex 3** programming tags (must be first tags scanned after applying power). Three beeps sound after scanning the **Hex 3** tag, identifying the programming tag. Next, the Status Indicator flashes green and a series of beeps sound that identify the communications protocol. Use the following table to determine the communication protocol.

Tone	Communication Protocol
1 Beep (Short high pitched)	OCIA NCR Short / Datachecker
1 Beep	OCIA NCR Long
2 Beeps	OCIA Non-NCR
3 Beeps	IBM 468x (4A)
4 Beeps	IBM 468x (4B)
6 Beeps	RS-232
7 Beeps	OCIA Single-Cable
10 Beeps	Keyboard Wedge
11 Beeps	Casio / OCIA Non-NCR

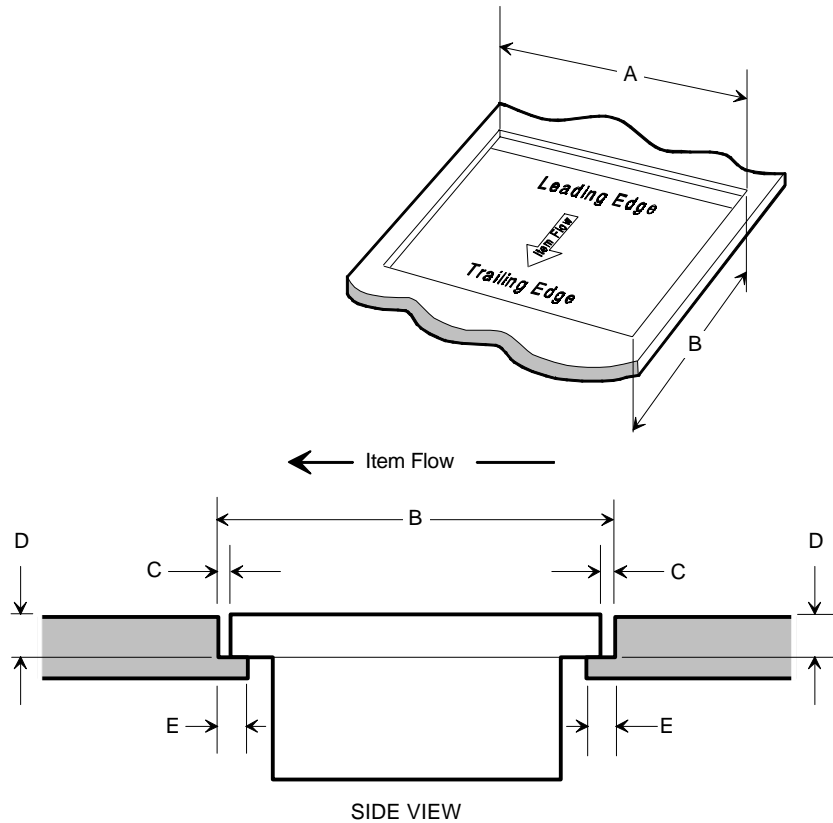Scan the **Hex 3** tag to repeat; remove power to end.

Programming Worksheet

1 0   COMMUNICATIONS PROTOCOL

Protocol

0	1	3	4	5
OCIA NCR Short (Datachecker)	OCIA NCR Long	IBM Slot Scanner	IBM Hand-Held Bar Code Reader	RS-232

6	A	B
OCIA Single Cable	Keyboard Wedge	IBM 1520 Bar Code Reader

19020A

NCR 7882 Specifications

Checkstand Hole –
7882 Scanner Horizontal Mount

SIDE VIEW

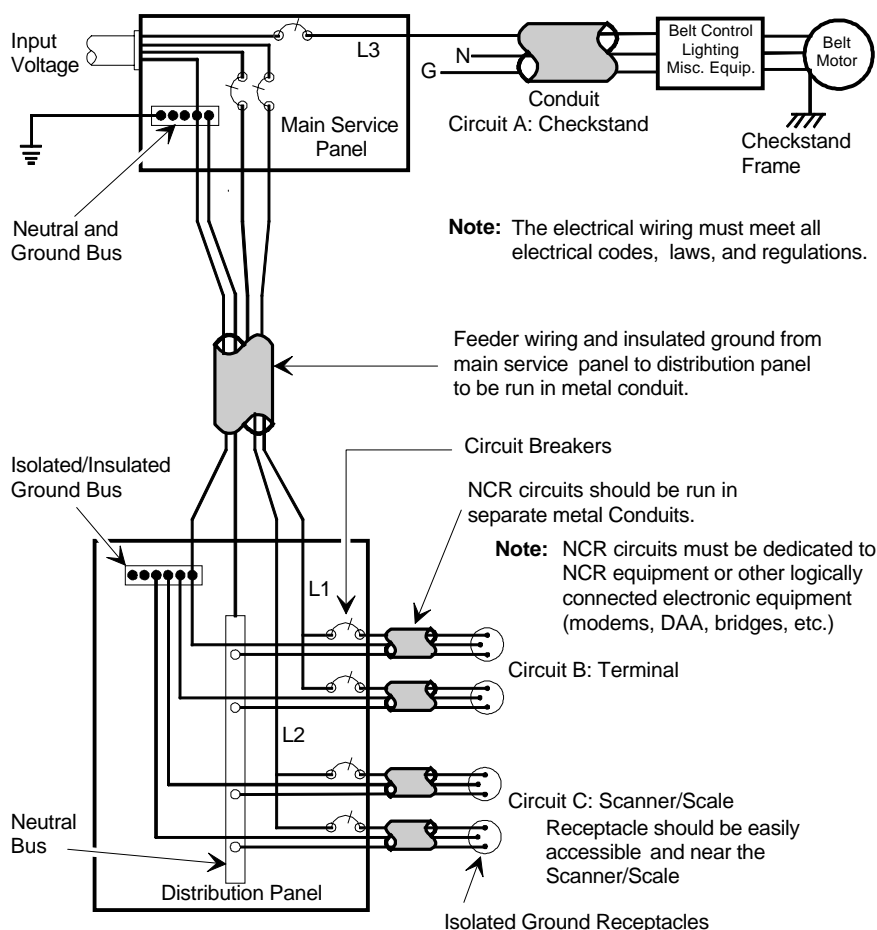| Features	A	B	C	D	E
F062	8 5/8 in. 21.91 cm	8 5/8 in. 21.91 cm	1/16 in. 0.16 cm	1 1/16 in. 2.70 cm	1/2 in. 1.27 cm
K011 (7852 Mount)	9 5/8 in. 24.45 cm	11 5/16 in. 28.73 cm	1/16 in. 0.16 cm	1 1/16 in. 2.70 cm	1/2 in. 1.27 cm
K010 (7820 Mount)	20 1/8 in. 51.12 cm	11 5/8 in. 29.53 cm	1/16 in. 0.16 cm	13/32 in. 1.03 cm	7/16 in. 1.11 cm

11981

Checkstand Hole – 7882 Scanner Flat Mount

Item Flow

SIDE VIEW
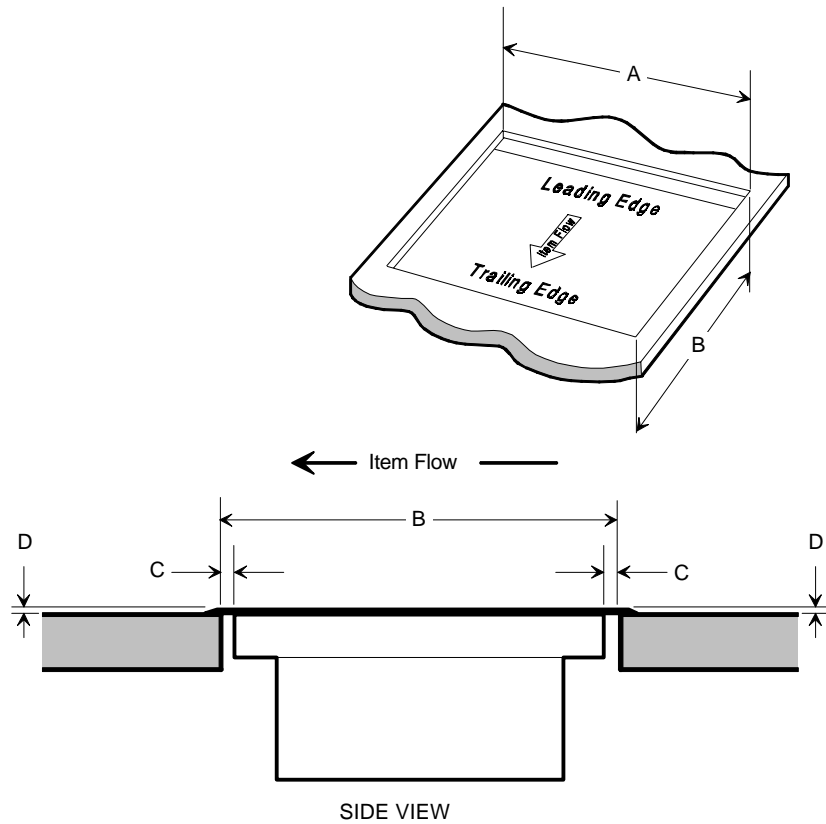
Features	A	B	C	D
K012	8 3/4 in. 22.22 cm	8 3/4 in. 22.22 cm	1/16 in. 0.16 cm	1/16 in. 0.16 cm

11993

Ventilation Requirements

The NCR 7882 Scanner/Scale is designed to operate without an exhaust fan in the checkstand; however, there must be adequate convection air flow. The ambient temperature inside the checkstand cannot be higher than 104° F (40° C). Also, the ambient temperature inside the checkstand cannot be higher than 12.6° F (7° C) above the ambient temperature outside the checkstand. For example, if the ambient temperature outside the checkstand is 76° F (24.4° C), the ambient temperature inside the checkstand cannot be greater than 88.6° F (31.4° C). If the checkstand contains other heat producing equipment, you may need to use forced air to keep the temperature within the specified range. However, air coming into or leaving the checkstand **MUST NOT** enter or exit past the 7882 Scanner/Scale.

Electrical Wiring

Note: The electrical wiring must meet all electrical codes, laws, and regulations.

Feeder wiring and insulated ground from main service panel to distribution panel to be run in metal conduit.

NCR circuits should be run in separate metal Conduits.

Note: NCR circuits must be dedicated to NCR equipment or other logically connected electronic equipment (modems, DAA, bridges, etc.)

Receptacle should be easily accessible and near the Scanner/Scale

Installation Type	Input Voltage	L1, L2	Circuit Breakers
U.S., Canada, & Japan	100Vac to 120Vac	100Vac to 120Vac	Standard single-pole; value determined by type of device branch and by electrical code.
International	220Vac to 240Vac	220Vac to 240Vac	
European	220Vac	220Vac	European double-pole.

R0121

Programming Worksheets

`1` `0` COMMUNICATIONS PROTOCOL

Protocol

`0`	`1`	`3`	`4`	`5`
OCIA NCR Short (Datachecker)	OCIA NCR Long	IBM Slot Scanner	IBM Hand-Held Bar Code Reader	RS-232

`6`	`A`	`B`
OCIA Single Cable	Keyboard Wedge	IBM 1520 Bar Code Reader

19020A

`1` `1` GOOD READ TONE

`A` **Tone On/Off**

`0`	`1`
Off	On

`B` **Tone Frequency (Hertz)** `B`

When entering Tone Frequency, the adjustment can be incremented upward by scanning the **Hex B** tag. Each time you scan the **Hex B** tag, the tone frequency increases one unit. Scan the **End** tag or a valid Hex tag to end this mode.

`C` **Tone Length (Milliseconds)** `C`

When entering Tone Length, the adjustment can be incremented upward by scanning the **Hex C** tag. Each time you scan the **Hex C** tag, the tone length increases one unit. Scan the **End** tag or a valid Hex tag to end this mode.

`D` **Tone Volume** `D`

When entering Tone Volume, the adjustment can be incremented upward by scanning the **Hex D** tag. Each time you scan the **Hex D** tag, the tone volume increases one unit. Scan the **End** tag or a valid Hex tag to end this mode.

`E` **Not On File Tone Volume** `E`

When entering Not On File Tone Volume, the adjustment can be incremented upward by scanning the **Hex E** tag. Each time you scan the **Hex E** tag, the tone volume increases one unit. Scan the **End** tag or a valid Hex tag to end this mode.

19021A

| 1 | 2 | **TIMERS** |

A	**Lockout Time (Milliseconds)**	0	1	2	3	4	5	6	7
		450	600	750	900	1050	1200	1350	1500

B	**Restart Lockout Timer**	0	1
		Off	On

C	**Active Time (Minutes)**	0	1	2	3
		0	15	30	60

19022A

| 1 | 3 | **BAR CODES - 1** |

A	**UPC/EAN**	0	1
		Disable	Enable

B	**Version D**	0
		Disable

C	**Extend UPC-A To EAN-13**	0	1
		Disable	Enable

D	**Extend UPC-E To UPC-A**	0	1
		Disable	Enable

E	**Periodical Codes**	0	1
		Disable	Enable

Periodical Code Extension	0	1	2
	2-Digit Only	5-Digit Only	2-Digit & 5-Digit

Send Data	0	1	2
	Data As Decoded	Periodical Code Data Only	CF Hex If Periodical Data Not Decoded

19023A

1 4   **BAR CODES - 2**

A **Code 39**   0   1
          Disable Enable

B **Minimum Characters Allowed** 2 - F   8 Default

C **Full ASCII**   0   1
          Disable Enable

D **Check Digit Present**   0   1
          Disable Enable

E **Transmit Check Digit**   0   1
          Disable Enable

F **Allow 1- or 2-Character Tags**   0   1
          Disable Enable

19024A

1 5   **BAR CODES - 3**

A **Interleaved 2 of 5**   0   1
          Disable Enable

B **Bar Code Length**   0   1
          Range   Specific
          Check   Check

Value 1   Characters
                     Minimum   0 - 5   0 - 9
                               Character 1 Character 2
                               0 8 Default

Value 2   Characters
                     Maximum   0 - 5   0 - 9
                               Character 1 Character 2
                               0 6 Default

C **Check Digit Present**   0   1
          Disable Enable

D **Transmit Check Digit**   0   1
          Disable Enable

19025A

| 1 | 7 | **BAR CODES - 4** |

| A | **Code 128** | | 0 | 1 |
Disable   Enable

| B | **Minimum Data Characters Allowed** | 1 | 2 | 3 | 4 | 5 |

| C | **UCC 128** | 0 | 1 |
Disable   Enable

19026A

| 1 | 6 | **LABEL IDENTIFIERS** |

| A | **Identifier Type** | 0 | 2 | 3 |
Default Prefix   None   Unique Prefix

| B | **Common Byte 1** | 0 - 7 | 0 - 7 | 5 | D | Default
Hex Character   Hex Character
(ASCII Code Chart)   (ASCII Code Chart)

| C | **Common Byte 2** | 0 - 7 | 0 - 7 | 4 | 2 | Default
Hex Character   Hex Character
(ASCII Code Chart)   (ASCII Code Chart)

| D | **Bar Code Type** | 0 | 2 | 3 | 4 |
UPC-A   UPC-E   EAN-8   EAN-13

| 5 | 6 | 7 |
Code 39   Code 128   Interleaved 2 of 5

Common Byte | 0 | 1 | 2 | 3 |
None   Common Byte 1   Common Byte 2   Both Common Bytes

Unique Identifier | 0 - 7 | 0 - F |
Hex Character   Hex Character
(ASCII Code Chart)   (ASCII Code Chart)

Common Byte and
Unique Identifier Defaults vary
according to Bar Code Type

19027A

2 0 RS-232 PARAMETERS - 1

A Baud Rate

0	1	2	3	4	5	6
300	600	1200	2400	4800	9600	19200

B Parity

0	1	4
Odd	Even	None

C Stop Bits and Character Length

0	1	2	3
1 Stop Bit 7-Bit Character	1 Stop Bit 8-Bit Character	2 Stop Bits 7-Bit Character	2 Stop Bits 8-Bit Character

C Handshake

0	1	2
RTS Low CTS Ignored	RTS High CTS Ignored	Raise RTS Wait for CTS

3	4	5
Raise RTS Ignore CTS	RTS Low Wait for CTS	RTS High Wait for CTS

19028A

2 1 RS-232 PARAMETERS - 2

A BCC Options

0	1
Disable	Enable

B Interface Control

0	1	2	3	5
Odd	ACK/NAK	XOn/XOff	ACK/NAK & XOn/XOff	Special ACK/NAK

C Check Digit

0	1	2	3
Disable UPC-A Disable EAN-8 Disable EAN-13 Disable UPC-E	Enable UPC-A Enable EAN-8 Enable EAN-13 Disable UPC-E	Disable UPC-A Disable EAN-8 Disable EAN-13 Enable UPC-E	Enable UPC-A Enable EAN-8 Enable EAN-13 Enable UPC-E

Note: Check Digit parameter also applies to UPC-E when using OCIA communications.

19029A

2 2 RS-232 RREFIX BYTE

A Prefix Byte

0	1
Disable	Enable

B ASCII Code

0 - 7	0 - F	0 2 Default
Hex Character (ASCII Code Chart)	Hex Character (ASCII Code Chart)	

19030A

2 3 RS-232 TERMINATOR BYTE

A **Terminator Byte** | 0 | | 1 |

Disable   Enable

B **ASCII Code** | 0 - 7 | | 0 - F | | 0 | 3 | Default

Hex Character   Hex Character
(ASCII Code Chart) (ASCII Code Chart)

19031A

2 4 RS-232 COMMUNICATIONS OPTIONS

Message Delay | 0 | | 1 | | 2 |

No Delay   10ms Delay   50ms Delay

**Normal or
Eavesdrop Mode** | 6 | | 7 |

Normal   Eavesdrop

19032B

3 2 MISCELLANEOUS PARAMETERS

**IBM Tone Control
(Good Read Tone Control)** | 3 | | 4 |

Disable   Enable

IBM Rexmit Control | 7 | | 8 |

3 Times Forever

IBM Tag Data Format | E | | F |

Hex   ASCII

19033B

ASCII Code Chart

ASCII Code Chart															
00	NULL	**10**	DLE	**20**	SP	**30**	0	**40**	@	**50**	P	**60**		**70**	p
01	SOH	**11**	DC1	**21**	!	**31**	1	**41**	A	**51**	Q	**61**	a	**71**	q
02	STX	**12**	DC2	**22**	"	**32**	2	**42**	B	**52**	R	**62**	b	**72**	r
03	ETX	**13**	DC3	**23**	#	**33**	3	**43**	C	**53**	S	**63**	c	**73**	s
04	EOT	**14**	DC4	**24**	$	**34**	4	**44**	D	**54**	T	**64**	d	**74**	t
05	ENQ	**15**	NAK	**25**	%	**35**	5	**45**	E	**55**	U	**65**	e	**75**	u
06	ACK	**16**	SYN	**26**	&	**36**	6	**46**	F	**56**	V	**66**	f	**76**	v
07	BEL	**17**	ETB	**27**	'	**37**	7	**47**	G	**57**	W	**67**	g	**77**	w
08	BS	**18**	CAN	**28**	(	**38**	8	**48**	H	**58**	X	**68**	h	**78**	x
09	HT	**19**	EM	**29**	)	**39**	9	**49**	I	**59**	Y	**69**	i	**79**	y
0A	LF	**1A**	SUB	**2A**	*	**3A**	:	**4A**	J	**5A**	Z	**6A**	j	**7A**	z
0B	VT	**1B**	ESC	**2B**	+	**3B**	;	**4B**	K	**5B**	[	**6B**	k	**7B**	{
0C	FF	**1C**	FS	**2C**	,	**3C**	<	**4C**	L	**5C**	\	**6C**	l	**7C**		
0D	CR	**1D**	GS	**2D**	-	**3D**	=	**4D**	M	**5D**	]	**6D**	m	**7D**	}
0E	S0	**1E**	RS	**2E**	.	**3E**	>	**4E**	N	**5E**	^	**6E**	n	**7E**	~
0F	S1	**1F**	US	**2F**	/	**3F**	?	**4F**	O	**5F**	_	**6F**	o	**7F**	DEL

R0040

Regulatory Information

Federal Communications Commission (FCC)
Radio Frequency Interference Statement

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 radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user is required to correct the interference at his own expense.

Information to User: This equipment must be installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to consult an NCR service representative immediately.

Caution: NCR is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by NCR. Such unauthorized modifications, substitutions, or attachments may void the user's authority to operate the equipment. The correction of interferences caused by such unauthorized modifications, substitutions, or attachments are the responsibility of the user.

Voluntary Control Council for Interference (VCCI)
Radio Frequency Interference Statement

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

16105

Canadian Department of Communications
Radio Frequency Interference Statement

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communication.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectriques édicté par Ministère des Communications du Canada.

Identification Labels

The Identification Labels are molded into the bottom of the cabinet. They provide necessary information about the unit: power requirements, radio interference information, and applicable NCR patents.

Complies with FDA radiation Performance standards 21 CFR Subchapter J.

注意

この装置は、第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-1

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

This apparatus does not exceed the Class A limits for radio noise emissions set out in the Radio Interference Regulations of Canada.

Le présent appareil ñ émet pas de bruits radioeléctriques depassant les limites de la Classe A prescrites dans le Reglement sur le brouillage radioeléctrique du Canada.

One or more of the U.S. Patents listed below apply:

4,868,375 4,797,551 4,851,667 4,235,018
4,272,675 4,282,426, 4,679,154 5,194,722
5,276,316 5,334,825 5,262,625 5,256,865
5,144,114 5,065,842 5,023,818 5,459,310
5,588,621 5,661,297 5,773,767 5,975,417

Horizontal
Vertical

NCR Corporation
Duluth, Ga. 30096

Class	7882	Serial
Model		Made In
Date Manufactured		

9Vdc, 1.0 A

EMI (A)
MOC-99-FST-1808

BE01

c UL us
LISTED
I.T.E. Accessory
E152553

CE

ACN 000 003 592

NYCE
NCR

NOM
NO. 437

18548

CE Mark Applicability

This product conforms to the requirements of the following European Union (EU) New Approach Directives.

• 89/336/EECEMC
• 73/23/EECLow Voltage

Declaration of Conformity

We, **NCR Corporation**, Retail Solutions Division Atlanta, 2651 Satellite Boulevard, Duluth, Georgia, 30096-5810, U.S.A., declare under our sole responsibility that the product **NCR Class 7882 Bar Code Scanner** to which this declaration relates is in conformity with the following standard or other normative document following the provisions of the noted Directives.

EU Directive	Harmonized Standard(s)
89/336/EEC (EMC)	EN 55022: 1994 + A1 (1995) + A2 (1997)
	EN 50082-1, Part 1 (1992)
	IEC 801-2: 1984, Severity Level 3
	IEC 801-3: 1984, Severity Level 2
	IEC 801-4: 1988, Severity Level 2
72/23/EEC (Low Voltage)	EN 60950: 1992 A1, A2, A3, A4, and A11
	EN 60825-1

Director of QualityAssurance
NCR Corporation
RSD-Atlanta
2651 Satellite Boulevard
Duluth, GA 30096-5810
U.S.A.

European Contact
EU Patent Attorney
NCR Limited
206 Marylebone Road
London NW1 6LY
England

Laser Safety

The NCR 7882 Scanner is not intended for long-term viewing of the direct laser light. However, the unit is safe if used as it was intended.

Note – The NCR 7882 Scanner is a **CDRH Class IIa** and **IEC Class 1 Laser Product**

Laser Safety Label

(IEC CLASS 1 LASER PRODUCT)

CDRH
Class IIa Laser Product - Avoid
Long-Term Viewing of Direct Laser Light.

Product Laser Classe IIa. Evite othar directamente os raios laser por muita tempo.

Appareil à Laser de classe IIa Eviter
Toute Exposition Prolongeè de la vue
à la lumierè laser directe.
Producto Laser de Clase IIa. Evite la
Exposiciòn Prolongada de la vista a
la Luz del Rayo Laser.

18546

Laser Module Label

This laser module does not comply with 21CFR1040. USE ONLY AS A COMPONENT.
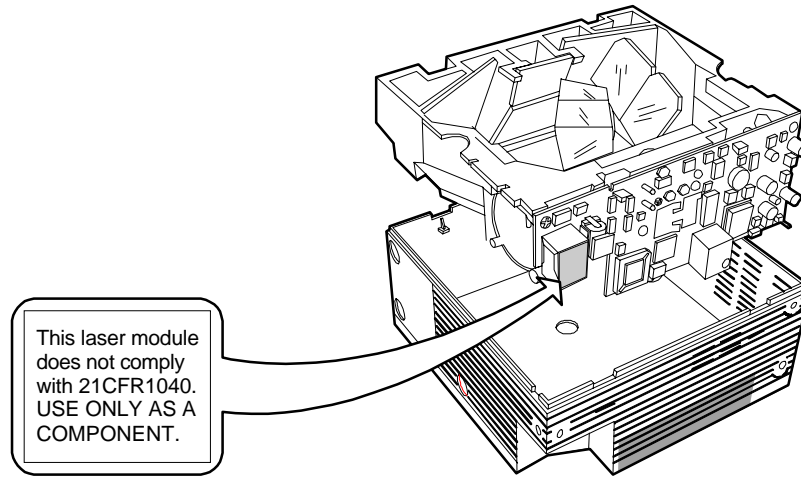
18547

Laser Power

The NCR 7882 Scanner meets the following laser power requirements.

- Class 1 EN 60825-1: 1994 (Europäische Norm)
- Class 1 IEC 825-1: 1993 (International Electrotechnical Commission)
- Class IIA CDRH (Center for Devices and Radiological Health) FDA, U.S.A.

Following is the radiant energy of the laser light as applied to each of the specified requirements.

Maximum Radiant Power (CDRH Calculation)	2.7 Microwatts
Maximum Radiant Power (EN 60825-1 / IEC Calculation)	0.82 Milliwatts
Accessible Emission Limit (CDRH Calculation)	3.9 Microwatts
Accessible Emission Limit (EN 60825-1 / IEC 825-1 Calculation)	0.80 Milliwatts

Warning – Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous radiation exposure.

Programming Tags

Volume Adjustment
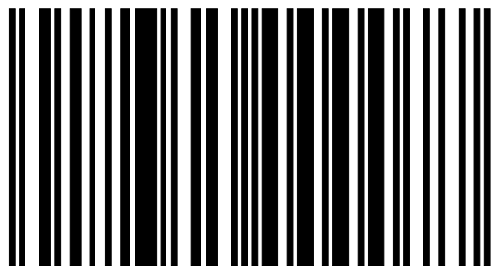
Reset
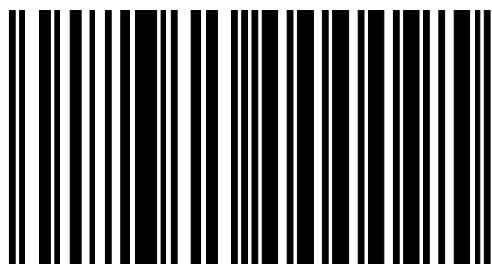
Default

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
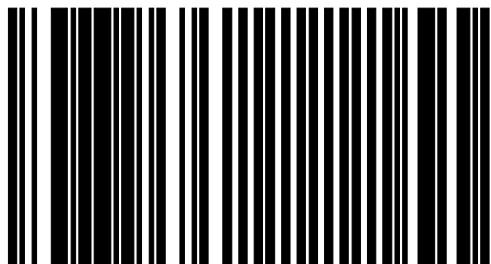
Programming Mode

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
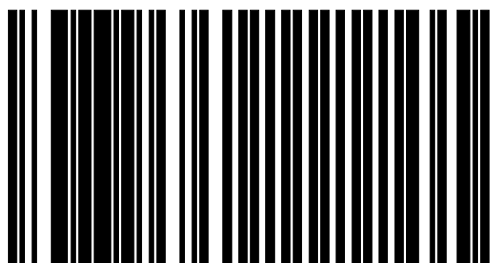
End
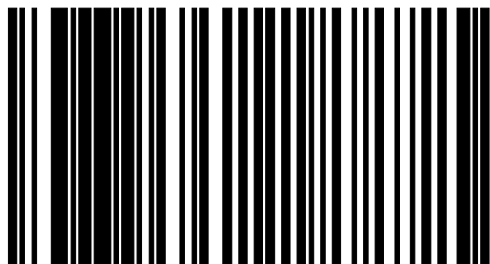
Save and Reset
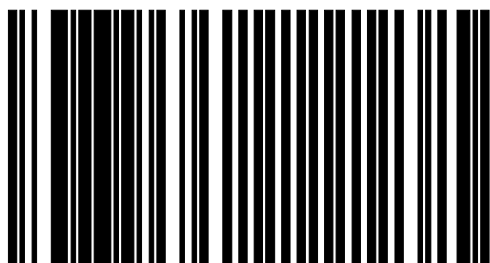
Abort
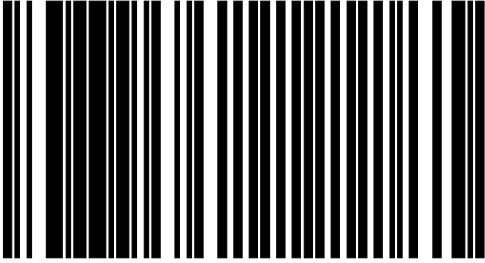
Diagnostic Mode
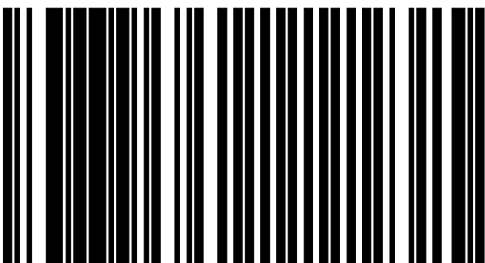
RS-232 Temporary Service Mode
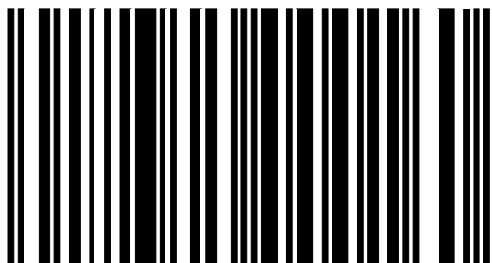
Mode 1
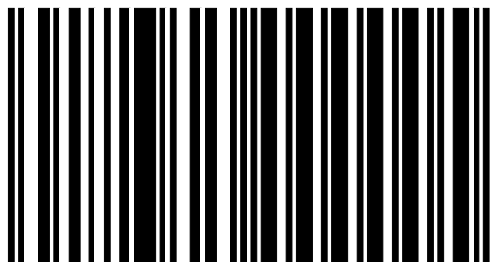
Mode 2
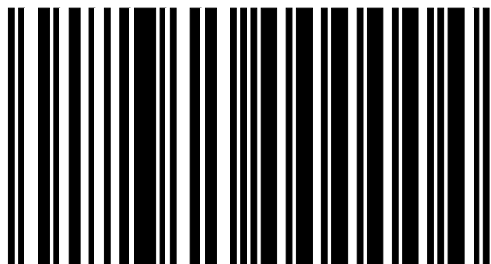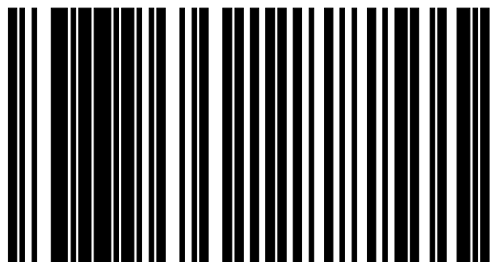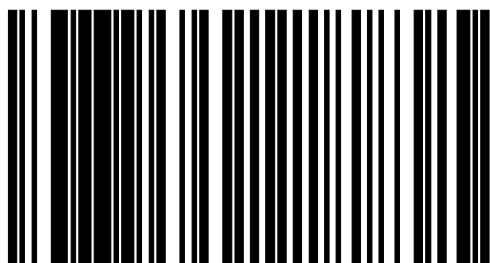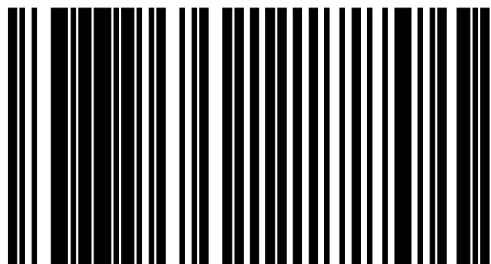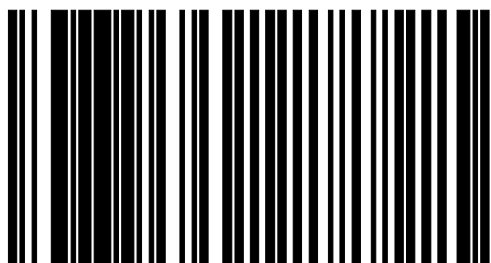
Reset Tallies
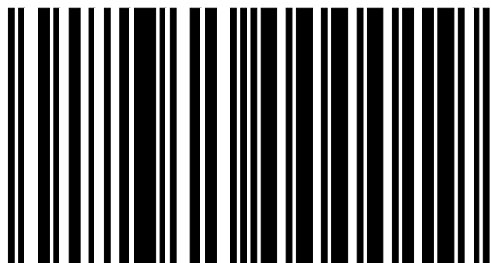
Hex 0
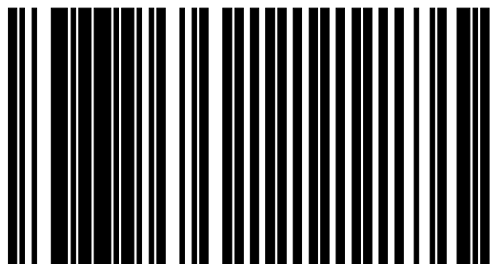
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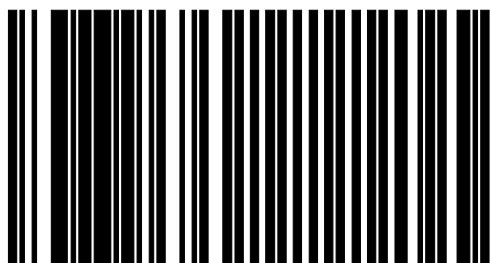
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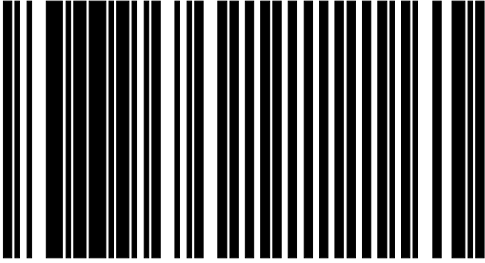
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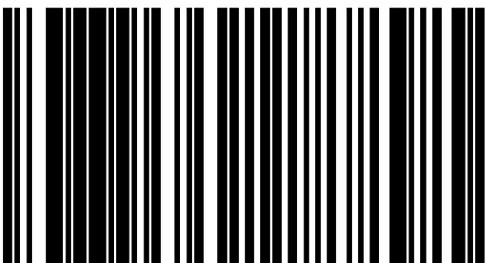
Hex 4

Hex 5

Hex 6

Hex 7

Hex 8

Hex 9

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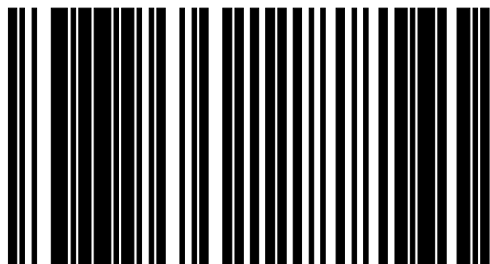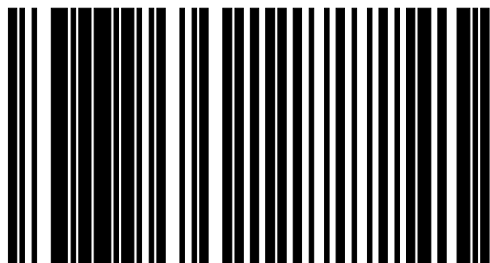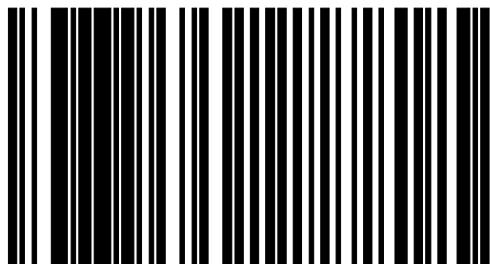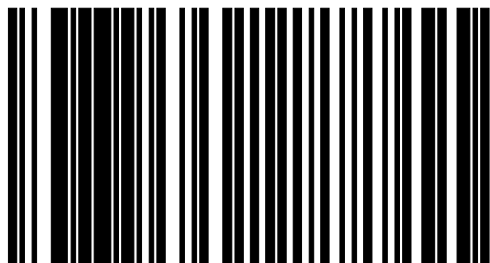
Hex A

Hex B

Hex C

Hex D

Hex E

Hex F