



NCR 7800 Consumer Price Verifier

User's Guide

BD20-1306-A
Release C
September 1997



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Revision Record

Date	Release	Remarks
9/95	A	First Printing
12/96	B	First Update
9/97	C	Second Update



Radio Frequency Interference Statements

Federal Communications Commission (FCC)

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of 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 interference in which case the user will be required to correct the interference at his own expense.

Caution: NCR is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by NCR. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user. The user is cautioned that changes or modifications not expressly approved by NCR may void the user's authority to operate the equipment.

Warning: **This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**

Warning: **This device does not contain any user-serviceable parts. Repair should only be performed by service personnel authorized and trained by NCR.**



Radio Frequency Interference Statements

Canadian Department of Communications (DOC)

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 Communications.

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

Voluntary Control Council For Interference (VCCI)

注意

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。





Declaration of Conformity

Declaration of Conformity

Manufacturer's Name: NCR
Manufacturer's Address: NCR
Retail Products & Systems - Atlanta
2651 Satellite Boulevard
Duluth, GA 30096
Type of Equipment: Information Technology Equipment - Bar-Code Scanner
Model Number: Class 7800

NCR, 1700 South Patterson Boulevard, Dayton Ohio, 45459, USA, declares that the equipment specified above conforms to the referenced EU Directives and Harmonized Standards.

EU Directives	Harmonized Standards	File, Certificate or Test Report Number
89/336/EEC (EMC)	EN 55022; 1987 (CISPR 22) EN 50032-1, Part 1 (1992): IEC801-2: 1984 IEC801-3: 1984 IEC801-4: 1988	00341
73/23/EEC (Low Voltage Directive)	EN 60 950 Second Edition EN 60 825	81195

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206 Marylebone Road
London, NW1 6LY, England



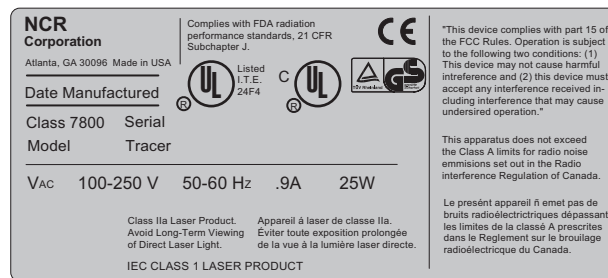


Laser Safety

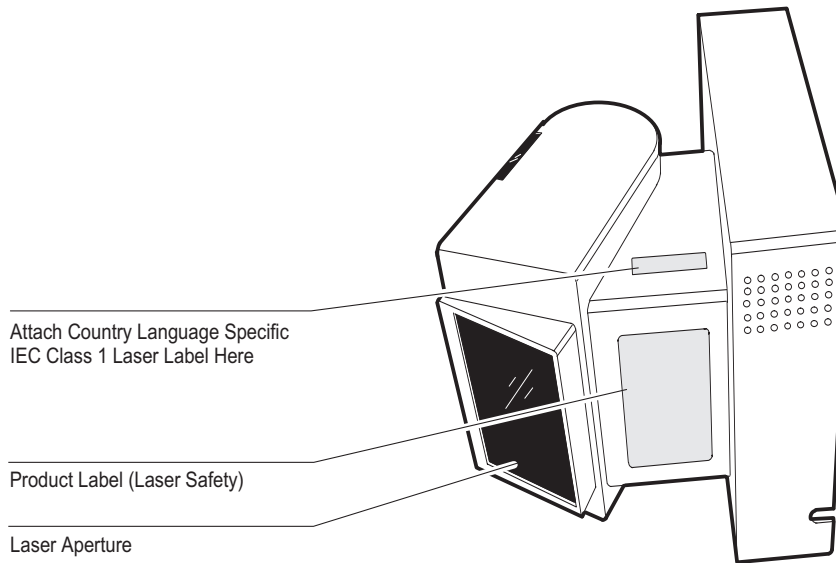
Laser Safety

Product Label with Laser Safety Information

The NCR 7800 Consumer Price Verifier comes from the factory with the Product Label attached.



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Laser Safety

Country Language Specific IEC Class 1 Laser Labels

There are seven Country Language Laser Labels included with the NCR 7800 Consumer Price Verifier for international configurations. The importer/installer must attach the correct IEC label to the scanner cabinet.



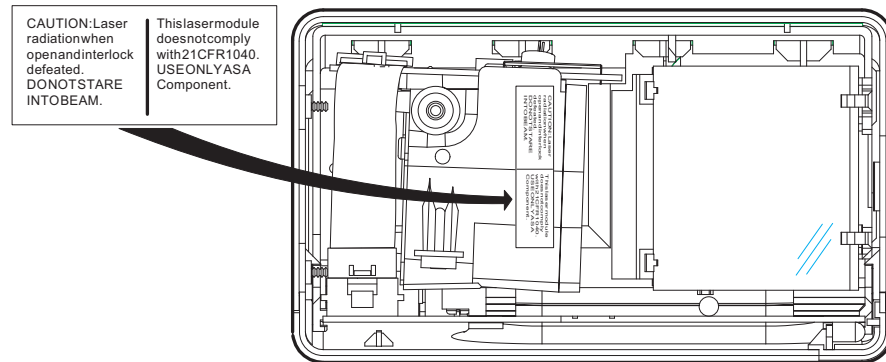
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Laser Safety

Laser Module Label
Location



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Laser Safety

Laser Power

The NCR 7800 Consumer Price Verifier meets the following laser/LED power requirements.

- Class IIa CDRH (Center for Devices and Radiological Health)

“Class IIa Laser Product—Avoid Long-Term Viewing of Direct Laser Light.”

- Class 1 EN60-825 (Europäische Norm)

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

Accessible Emission Limit (CDRH Calculation)	0.99 Milliwatts
Accessible Emission Limit EN60 825-1:1994+All:1996	0.81 Milliwatts

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





Laser Safety





Chapter 1

Introducing the NCR 7800 Consumer Price Verifier

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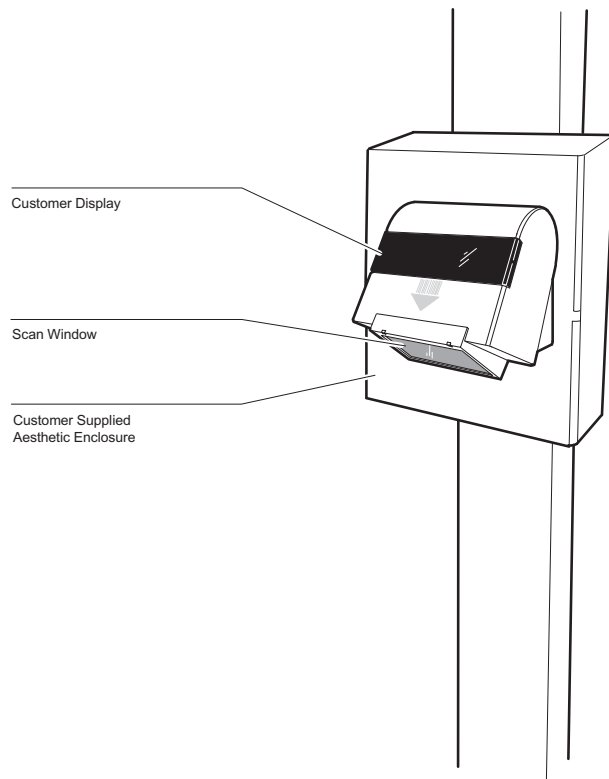


The Consumer Price Verifier

The Consumer Price Verifier

The NCR 7800 Consumer Price Verifier allows the consumer to verify the price of an item before placing it in the cart, thereby eliminating return-to-stock tasks that result when a cost decision is made at the checkout counter.

The price verifier mounts to a wall, round post, or square post for ease of customer access.



12945





The Consumer Price Verifier

An ambient light sensor detects a customer's presence and activates the scanner. The consumer lifts the item up toward the window and the laser scanner reads the bar-code label on the product. Once the bar-code label is read, a tone sounds and the price and description of the item are displayed.

The NCR 7800 does not have an on/off switch, but it contains circuitry that turns the laser scanner off if a label is not scanned within several seconds. This minimizes the amount of time the laser is on and reduces wear on the unit.

Laser Scanning

The price verifier contains a laser module that generates a low-level laser light. The laser light passes through a series of mirrors to generate a scan pattern. A deflector mirror directs the light out the scan window. Reflected light from the bar code is then collected and decoded to determine the bar-code data. The bar code data is sent to the host terminal or store controller where it is analyzed. The price and description data is then sent back to the price verifier for display.

The NCR 7800 produces an omnidirectional scan pattern that makes scanning easier. The pattern looks as if several lines are scanning simultaneously, but is actually a single beam reflected through several mirrors. It is this pattern that enables the NCR 7800 to read bar codes from most orientations.

Bar Code Types

The price verifier reads:

- UPC/EAN/JAN
- Code 128
- Code 39
- Interleaved 2 of 5





Chapter 2

Site Requirements

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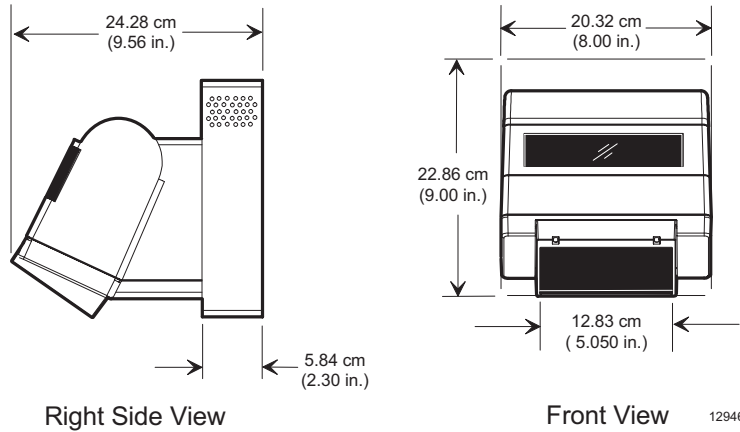




Installation Considerations

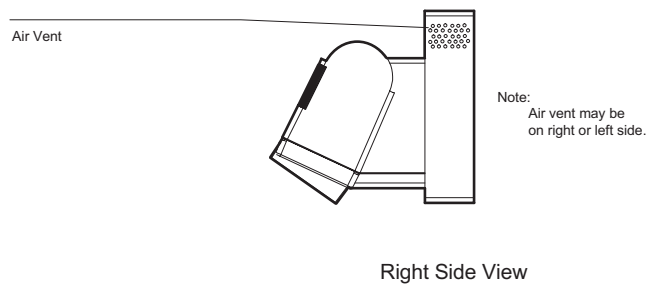
Installation Considerations

Physical Dimensions



Ventilation Requirements

The Consumer Price Verifier is air cooled. Therefore, the air vent must not be blocked. If the unit is mounted in an enclosure, an air vent must be provided.





Installation Considerations

Environmental Considerations

Do not locate the NCR 7800 in direct sunlight. Temperatures above 104 degrees Fahrenheit (40 degrees Celsius) can occur when sunlight falls on objects through windows.

	Working Range	Storage Range
Temperature	50°F to 86°F	-40°F to 140°F
	10°C to 30°C	-40°C to 60°C
Temperature Change	18°F per hour	36°F per hour
	10°C per hour	20°C per hour
Humidity	20% to 80% RH Non-Condensing	5% to 95% RH Non-Condensing
Humidity Change	10% per hour	
Barometric Pressure	105 x 10 ³ Pa to 69 x 10 ³ Pa	
Ambient Light	300 Foot-candles on tag, 7800 not pointed at light source	Not Applicable
Acoustical Noise	50 dBa or less measured at 12 in. (30.48 cm) from any surface	Not Applicable





Installation Considerations

Power Considerations

The NCR 7800 operates from an internal universal power supply that connects to the AC power. Different power cords are available that allow the power supply to support the following input voltage ranges:

- 104 Vac to 127 Vac, 60 Hz, USA/Canada
- 220 Vac to 240 Vac, 50 Hz, European
- 90 Vac to 104 Vac, 50/60 Hz, Japan

The length of the power cord is 3 feet.

Warning: Power supply cord serves as a disconnect device. The electrical outlet should be installed near the equipment and should be easily accessible.

Compliance with ADA Guidelines

Location and Accessibility	ADA Guideline
Hallways	"Objects projecting from walls, with their leading edges between 27 inches and 80 inches above the finished floor shall protrude no more than 4 inches into walks, halls, corridors, passageways, or aisles. (The retailer has to determine if his installation site is defined as one of these.) Objects mounted with their leading edges at or below 27 inches above the finished floor may protrude any amount."
Poles	"Freestanding objects mounted on posts or pylons may overhang 12 inches maximum from 27 inches to 80 inches above the ground or finished floor. Protruding objects shall not reduce the clear width of an accessible route or maneuvering space."
Mounting Height	The first line (top line) of the unit's display should be 47 inches above the floor.





Installation Considerations

Weight Considerations

The post or wall on which the price verifier is mounted should be able to withstand three times the weight of the unit, which is approximately 15 pounds (6.8 kg). Mount any signage independently.

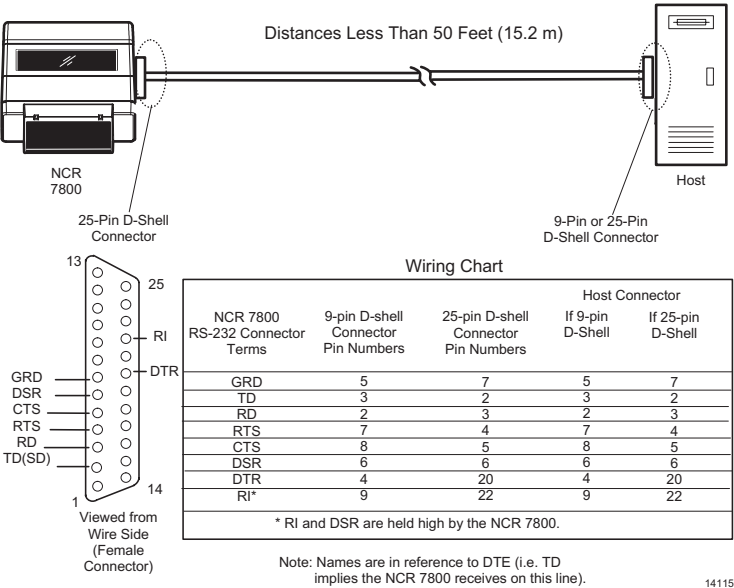
Store Layout Considerations

Do	Don't
Place near items that are most frequently price checked.	Place near pallets where a customer's view could be obscured.
Place in areas that least affect your established traffic patterns.	Place near items not in the database.
Place adjacent to as many departments as possible.	Block major thoroughfares in the store with customers waiting to use the price verifier.
Place at regular intervals in grocery stores (front-middle-back of aisle).	

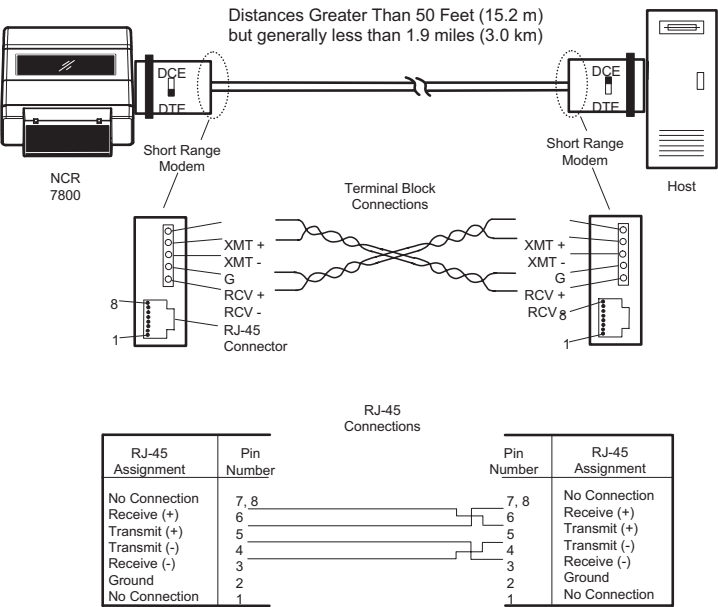


Cable Requirements

Installation Considerations



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Installation Considerations

Note: The distance the short range modem can transmit is based upon the transmission rate and cable diameter. The distance of 1.9 miles (3.0 km) stated above is based on the default transmission rate of 9.6 kbps using 24 AWG (0.5 mm) 4-wire telephone cable (two twisted pairs).

Wiring Categories

Category 3 and 5 are industry standards for communication wiring. A four twisted pair unshielded wiring can be used with Ethernet and StarLan.

Category	Wiring
CAT 5	AT&T 1061 (non-plenum) AT&T 2061 (plenum)
CAT 3	AT&T 1010 (non-plenum) AT&T 2010 (plenum)





Chapter 3

Installing the NCR 7800 Consumer Price Verifier

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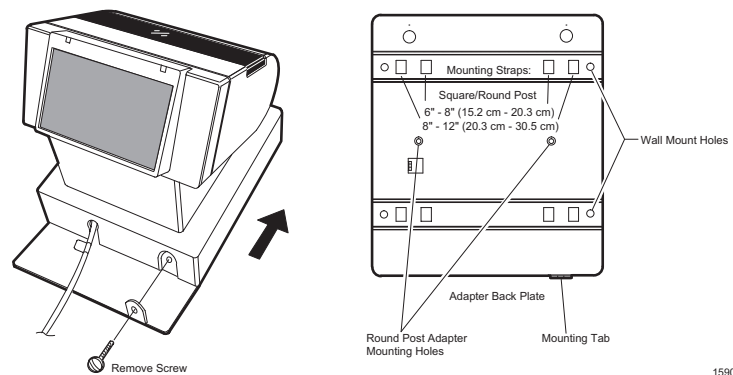
Installation

Warning: The NCR 7800 Consumer Price Verifier must be mounted securely to prevent a hazard. It must be installed in accordance with local building codes.

Adapter Back Plate

Use the adapter back plate to mount the Consumer Price Verifier to a wall or other vertical surface.

Remove the adapter back plate from the Consumer Price Verifier.



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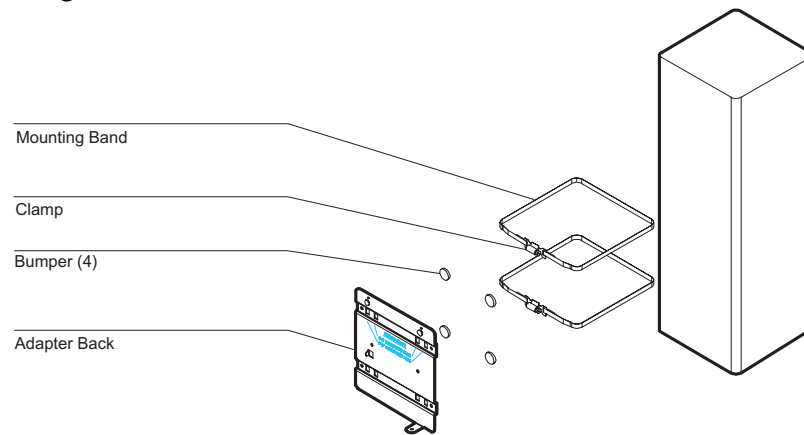
Note: If you are mounting to a hollow wall, such as drywall, use a 3/16 inch diameter (or larger) toggle bolt.



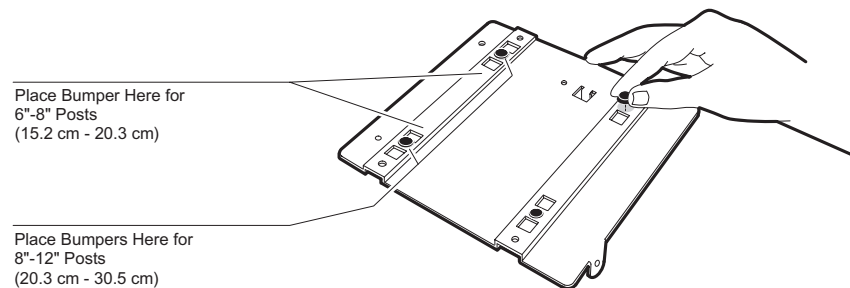


Installation

Square Post Mounting Considerations



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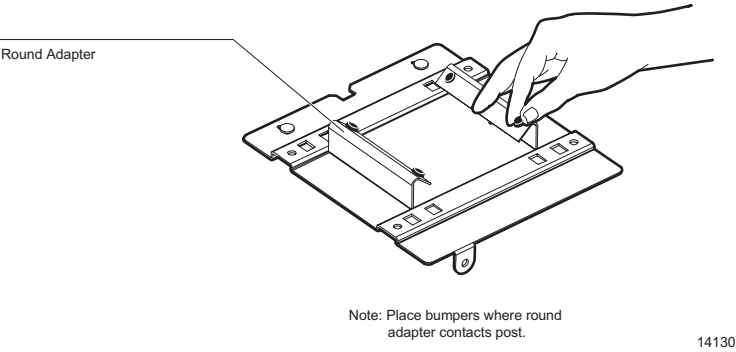
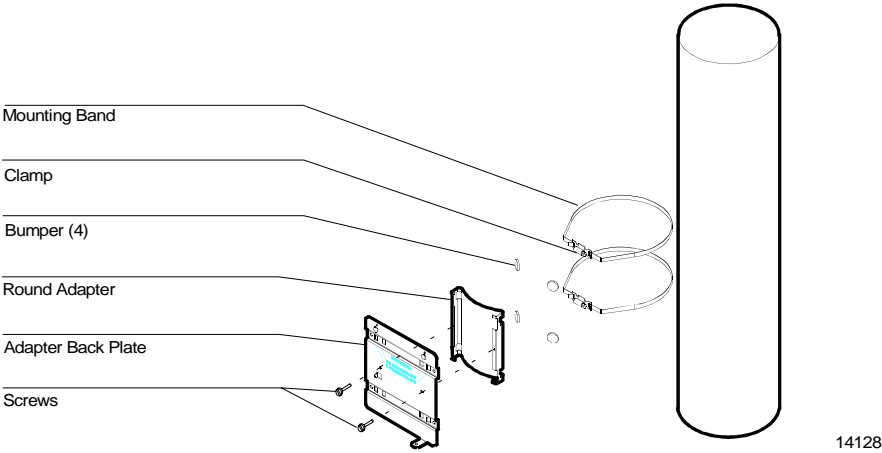




Round Post Mounting Considerations

Circumference to Diameter Conversion Chart

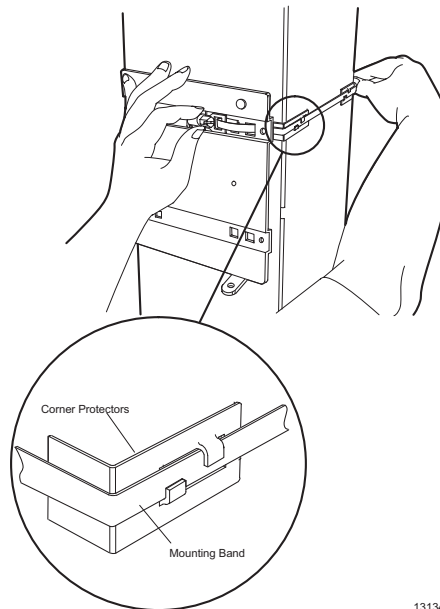
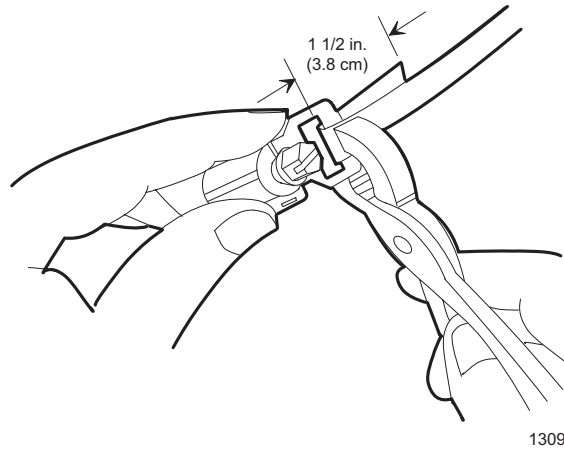
English		Metric	
Circumference	Diameter	Circumference	Diameter
18 13/16 in.	6 in.	47.7 cm	15.2 cm
25 1/8 in.	8 in.	63.7 cm	20.3 cm
31 3/8 in.	10 in.	79.8 cm	25.4 cm
37 11/16 in.	12 in.	95.8 cm	30.5 cm





Installation

Mounting Band

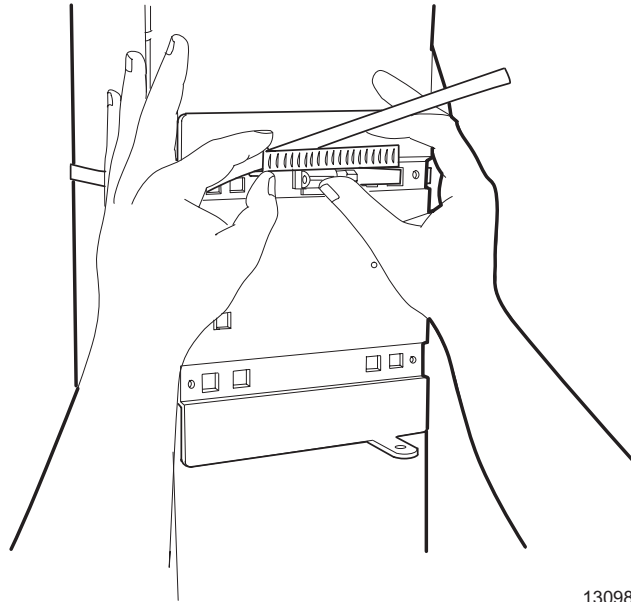


If you plan to use corner protectors on square posts, install them now.

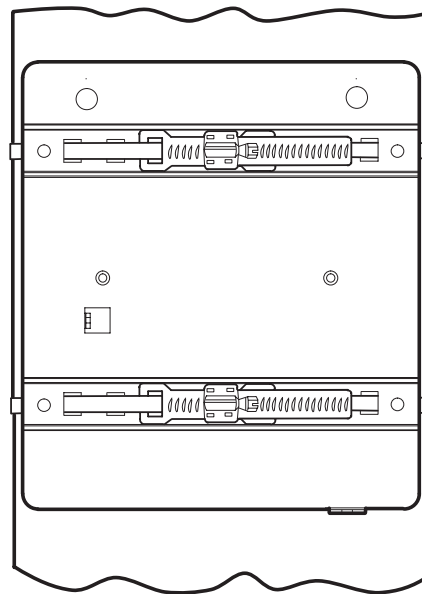




Installation



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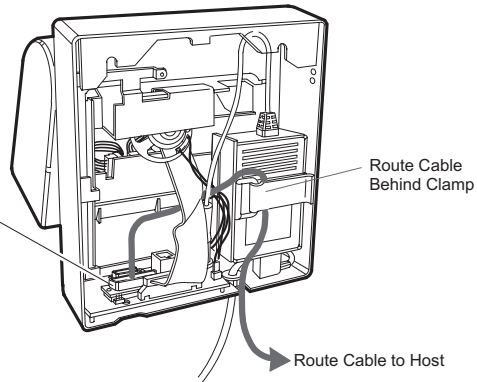




Installation

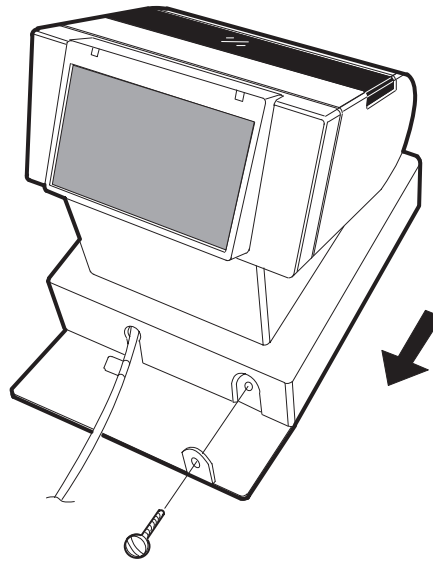
Connect the Interface Cable

RS-232 Connector allows connection of RS-232 cable or short range modem.



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Mount Unit onto Adapter Back Plate



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Chapter 4

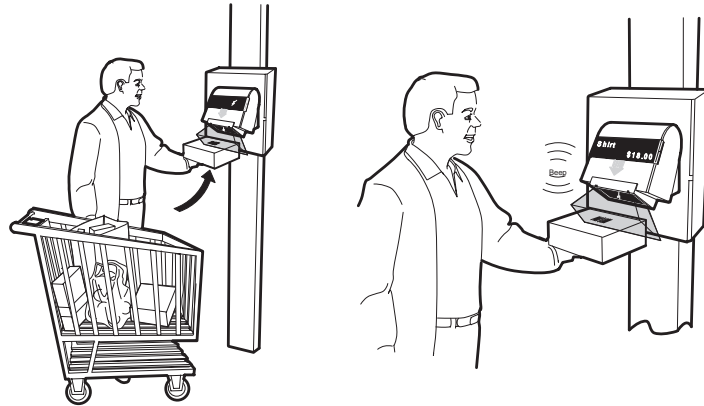
Operating the NCR 7800 Consumer Price Verifier

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NCR 7800 Operation



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Scan Pattern Location

Because the NCR 7800 produces a dense, omnidirectional scan pattern, labels can be read from many different angles.

In order for the scanner to read a label, the center 90% of one scan line must cross the bar code. Therefore, labels are more easily read if the merchandise is positioned so that the label is presented toward the center of the scan pattern.

To successfully read Interleaved 2 of 5 and Code 39 labels, the scan line must cross the entire label, not missing any of the bars or spaces. UPC and Code 128 labels can be read by piecing together separate reads of slightly more than half of each side of the bar code. Therefore, these labels are much easier to read.

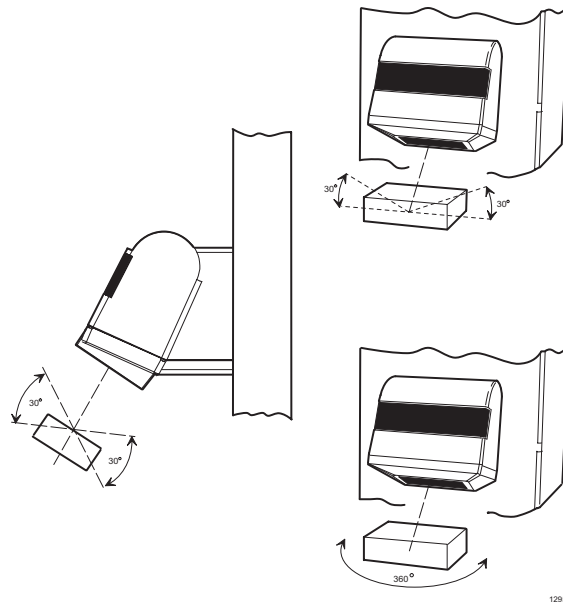




NCR 7800 Operation

Label Orientation

The NCR 7800 can read labels that are presented from several different angles.



Label Distance

Depending on the label, good reading distance can range from 0 to 6 inches (0 to 15.2 cm). Therefore, initially present the label approximately 3 - 4 inches (7.6 - 10.2 cm) from the scan window and move the label closer if necessary.

Audible Read Indicators

The price verifier indicates valid reads by an audible tone. No tone is generated if the scanner does not detect a valid bar code.

Program parameters specify whether the audible tone is enabled or disabled. If enabled, the frequency, duration, and volume can be specified. Chapter 5, *Programming the NCR 7800*, provides details for programming audible tone program parameters.





Bar Code Quality

Bar-code readability depends on the quality of the label. Although bad bar codes can often be read, the scanner cannot read bar codes that are obstructed, defective, or damaged. If a certain bar code cannot be read, inspect the bar-code label in question and verify the quality of the label.

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

A UPC label should be considered readable if it meets or exceeds the requirements set forth in the *UPC Symbol Specification* put out by the UPC Council, Inc. and dated March 1982, and the General Specification for Article Symbol Marking, Copyright EAN-1977. The examples of bad bar codes below are not inclusive.



R0026





NCR 7800 Operation

Preventive Maintenance

Clean the body of the Consumer Price Verifier with a soft cloth dampened by lukewarm water and a mild soap.

Clean the scan window frequently. Use a soft cloth dampened by a common cleaning agent such as Windex, Glass Plus, or 409.

Important! Never spray a cleaning agent directly on the Consumer Price Verifier. Avoid abrasive or harsh cleaning agents.

Introduction to Customer

The following chart provides suggestions for introducing the Consumer Price Verifier to customers.

Topic	Suggestions
Overhead Signage	<ul style="list-style-type: none">• Visibly stands out among other signs
Promotions	<ul style="list-style-type: none">• Store announcements• Advertised in store flyers• Sign in front of store• Introduced by greeter• Demonstrations of use• Video on strategically located TVs
Kiosk	<ul style="list-style-type: none">• Visibly stands out in store• Succinct instructions on kiosk
Item Abandonment	<ul style="list-style-type: none">• Bin for unwanted items nearby





Chapter 5

Programming the NCR 7800 Consumer Price Verifier

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Display Parameters	5-32
Default Display Time	5-32
Character Set Selection	5-32
Parameter Version Number	5-33





Parameter Programming

The Consumer Price Verifier provides sixteen programmable modes to meet a multitude of system requirements. In addition, there are three factory set configuration default modes. Programming worksheets are provided at the end of this manual as a tool for identifying and programming parameters.

Programming Tags

The Consumer Price Verifier is programmed using a set of special programming tags found in the *NCR Scanner Programming Tags* booklet (BST0-2121-74). This booklet is shipped in the box with every unit as well as with every NCR Consumer Price Verifier repair and user guide.





Parameter Programming

Tag	Function	Indication
Default	Sets unit to standard default mode. Scan tag immediately after applying power. The configuration default will displayed.	Short beep - good read Tone - Four quick beeps from low to high frequency
Programming Mode	Sets unit to base state for programming. Scan tag immediately after applying power, or after scanning the Default tag.	Short beep - good read In Base Programming state -Long and short beep
End	Ends certain input sequences. This tag is not used often since the programming mode determines the end of most input sequences.	Short beep - good read
Save and Reset	Saves programmed parameters and restarts the unit. Used in the base state of the Programming Mode .	Short beep - good read Tone - Four quick beeps from low to high frequency
Abort	If scanned in the base programming state, the programming session is terminated. No previously entered parameters are saved. If scanned while entering parameters for a specific programming mode, all parameters entered up to this point are saved, and the unit goes to the base programming state.	Short beep - good read Tone - Four quick beeps from low to high frequency Short beep - good read
Hex 0 - Hex F	Provide programming selection.	Hex 0: short, high frequency beep. Hex 1 - Hex F: Beeps tag value. Multiples of 4 are short beeps grouped together. Others are longer. Example: Hex D is 3 sets of 4 short beeps followed by 1 longer beep.





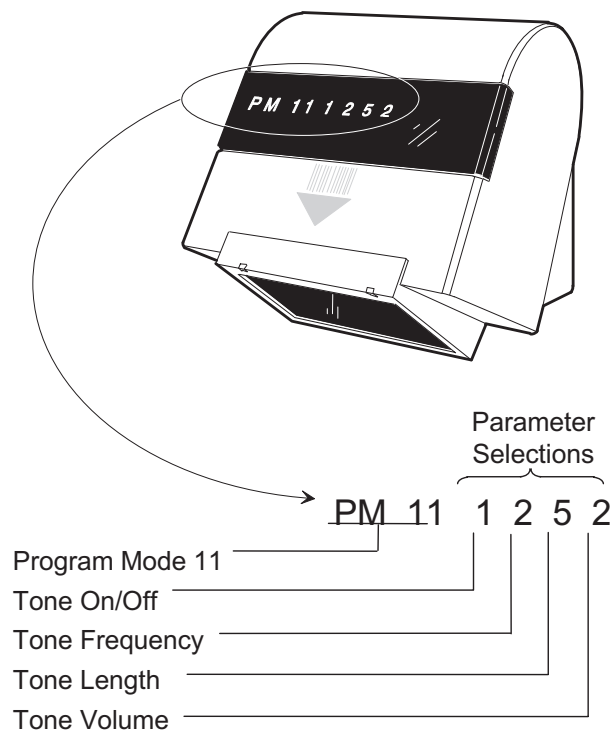
Parameter Programming

Base Programming State

In the base programming state, select specific programming modes by scanning the two hexadecimal tags that identify each programming mode. The hexadecimal identifiers for each programming mode are shown at the top of each programming worksheet next to the title of the programming mode.

Programming Mode

In each specific programming mode, the Consumer Price Verifier will display information for the parameters associated with the selected programming mode. The figure below shows what might be displayed for the Good Read Tone programming mode.



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Parameter Programming

Programming Worksheets

Each programming mode has an associated programming worksheet (see Appendix A) that details the structure of each programming mode, mapping out how to identify and change each of the parameter values within the specific programming mode.

Shortcuts

In most parameter programming situations, only one or two parameters in a specific programming mode will need to be changed. To make this task easier, most programming modes contain shortcuts that allow specific parameters to be changed without having to flow through all the parameters in a programming mode. These shortcuts are depicted in the programming worksheets with an alpha character in a box just left of the parameter name. Scanning the corresponding alpha Hex tag provides a shortcut to that specific parameter.

ASCII Characters

Some programming parameters require byte data to be entered. Use the ASCII Code Chart for the appropriate data.

ASCII Code Chart									
00	NULL	10	DLE	20	SP	30	0	40	@
01	SOH	11	DC1	21	!	31	1	41	A
02	STX	12	DC2	22	"	32	2	42	B
03	ETX	13	DC3	23	#	33	3	43	C
04	EOT	14	DC4	24	\$	34	4	44	D
05	ENQ	15	NAK	25	%	35	5	45	E
06	ACK	16	SYN	26	&	36	6	46	F
07	BEL	17	ETB	27	'	37	7	47	G
08	BS	18	CAN	28	(38	8	48	H
09	HT	19	EM	29)	39	9	49	I
0A	LF	1A	SUB	2A	*	3A	:	4A	J
0B	VT	1B	ESC	2B	+	3B	;	4B	K
0C	FF	1C	FS	2C	,	3C	<	4C	L
0D	CR	1D	GS	2D	-	3D	=	4D	M
0E	S0	1E	RS	2E	.	3E	>	4E	N
0F	S1	1F	US	2F	/	3F	?	4F	O
								50	P
								51	Q
								52	R
								53	S
								54	T
								55	U
								56	V
								57	W
								58	X
								59	Y
								60	Z
								61	a
								62	b
								63	c
								64	d
								65	e
								66	f
								67	g
								68	h
								69	i
								70	j
								71	k
								72	l
								73	m
								74	n
								75	o
								76	p
								77	q
								78	r
								79	s
								80	t
								81	u
								82	v
								83	w
								84	x
								85	y
								86	z
								87	{
								88	
								89	}
								90	DEL

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Parameter Programming

Default Modes

The Consumer Price Verifier has three configuration default modes. The factory set standard configuration default setting is RS-232 indirect mode. However, the configuration default setting can be changed within the **Configuration Default Programming Mode** (see the Configuration Default programming worksheet).

Default Mode	Configuration Default Setting
RS-232 Indirect Mode (Standard Default)	1
RS-232 Direct Mode	0
RS-232 Direct Mode (with UPC-E Tags Extended to UPC-A Tags and Code 128, 39, and 12 of 5 disabled)	2



Parameter Programming

Defaults Table

The following table details the parameter defaults of the three factory set configuration default modes. Differences are identified with bold italics. The Programming Worksheets indicate the default value for a parameter with a bolded box when the Configuration Default is set to RS-232 Indirect (1).

Configuration Default Setting	0	1 (Standard Default)	2
Communications Protocol			
Protocol	Direct	Indirect	Direct
Good Read Tone			
Tone On/Off	On	On	On
Tone Frequency	617 Hertz	617 Hertz	617 Hertz
Tone Length	150 Milliseconds	150 Milliseconds	150 Milliseconds
Tone Volume	Selection 3	Selection 3	Selection 3
Timeouts			
Lockout Time	750 Milliseconds	750 Milliseconds	750 Milliseconds
Restart Lockout Timer	On	On	On
Active Time	30 Seconds	30 Seconds	30 Seconds
Multiplier	Disable	Disable	Disable
Bar Codes - 1			
UPC/EAN	Enable	Enable	Enable
Version D	Disable	Disable	Disable
Extend UPC-A to EAN-13	Disable	Disable	Disable
Extend UPC-E to UPC-A	Disable	Disable	Enable
Bar Codes - 2			
Code 39	Enable	Enable	Disable
Minimum Characters Allowed	4	4	4
Full ASCII	Disable	Disable	Disable
Check Digit Present	Disable	Disable	Disable
Transmit Check Digit	Disable	Disable	Disable



Parameter Programming

Configuration Default Setting	0	1 (Standard Default)	2
Bar Codes - 3			
Interleaved 2 of 5	Enable	Enable	Disable
Bar-Code Length	Range Check	Range Check	Range Check
Value 1	08	08	08
Value 2	16	16	16
Check Digit Present	Disable	Disable	Disable
Transmit Check Digit	Disable	Disable	Disable
Bar Codes - 4			
Code 128	Enable	Enable	Disable
Minimum Characters Allowed	3	3	3
UCC 128	Disable	Disable	Disable
Label Identifiers			
Identifier Type	Default Prefix	Default Prefix	Default Prefix
Common Byte 1	5D	5D	5D
Common Byte 2	42	42	42
Bar-Code Type	Not Applicable	Not Applicable	Not Applicable
Common Byte	Not Applicable	Not Applicable	Not Applicable
Unique Identifier	Not Applicable	Not Applicable	Not Applicable
Version Number (UPC-D)	Do Not Include	Do Not Include	Do Not Include
RS-232 Parameters - 1			
Baud Rate	9600	9600	9600
Parity	None	Odd	None
Stop Bits and Character Length	1 Stop Bit, 8-Bit Character	1 Stop Bit, 8-Bit Character	1 Stop Bit, 8-Bit Character
Handshake	RTS High, Ignore CTS	RTS High, Wait for CTS	RTS High, Ignore CTS
RS-232 Parameters - 2			
BCC Options	Disable	Disable	Disable
Interface Control	None	None	None
Check Digit	Enable UPC-A	Enable UPC-A	Enable UPC-A





Parameter Programming

Configuration Default Setting	0	1 (Standard Default)	2
	Enable EAN-8	Enable EAN-8	Enable EAN-8
	Enable EAN-13	Enable EAN-13	Enable EAN-13
	Disable UPC-E	Disable UPC-E	Disable UPC-E
Retransmit on ACK/NAK Timer Expiration	Enable	Enable	Enable
RS-232 Prefix Byte			
Prefix Byte	Enable	Disable	Enable
ASCII Code	02	02	02
RS-232 Terminator Byte			
Terminator Byte	Enable	Enable	Enable
ASCII Code	0D	0D	0D
Power-Up Message			
Power-Up Message	Disable	Disable	Disable
Display Parameters			
Default Display Time	01	01	01
Character Set	01	01	01
Parameter Version Number	0000	0000	0000

Programming Tip

When unaware of how a unit is programmed, set it to all defaults using the **Default** Programming Tag. Then enter any required changes to make the default program match your desired program.





Communications Protocol

Determines how the NCR 7800 communicates with the host terminal or PC.

Protocol

- RS-232 Direct (0)
- RS-232 Indirect (1) - Default

In the Direct Mode of operation, all data sent to the NCR 7800 is displayed. However, in Price Verifiers with firmware versions of 497-040 and higher, commands to the scanner are not sent.

In the Indirect Mode of operation, logical addresses are used to communicate with the NCR 7800. Data to be displayed must be addressed to the display.

In either mode, the host can reconfigure the NCR 7800 and change the information to be displayed.





Good Read Tone

Good Read Tone

Selects the parameters for sounding a tone.

Tone On/Off

Scan **Hex 0** for Good Read Tone Off and **Hex 1** for Good Read Tone On.

Tone Frequency

Selects the frequency of the Good Read Tone. The parameter contains eight different frequencies ranging from 524 Hertz to 1250 Hertz. Select these frequencies using the **Hex 0** through **Hex 7** tags. The default frequency is 617 Hertz.

Since most people cannot determine how a tone sounds based upon knowing its frequency, you can set the Tone Frequency by listening to it. When you are at the Tone Frequency programming selection, you can increment the tone frequency by scanning the **Hex A** tag. Each time the **Hex A** tag is scanned, the tone increments one unit. After reaching the highest frequency, the procedure starts over, starting with the lowest frequency. You can end this mode by scanning the **End** tag or another valid Hex tag.

Tone Length

Selects the length of the Good Read Tone. The parameter contains 9 different lengths ranging from 25 milliseconds to 250 milliseconds. Select these times using the **Hex 0** through **Hex 9** tags. The default length is 150 milliseconds.

As with tone frequency, most people cannot identify short time lengths such as those available for Good Read Tones. Therefore, you can set the tone length by listening to it. When you are at the Tone Length programming selection, you can increment the tone length by scanning the **Hex A** tag. Each time you scan the **Hex A** tag, the tone length increments 25 milliseconds. After reaching 250 milliseconds, the





Good Read Tone

procedures starts over, beginning with 25 milliseconds. End this mode by scanning the **End** tag. However, you can also end it by scanning another valid Hex tag.

Tone Volume

Selects the volume of the Good Read Tone. This parameter contains seven levels of adjustment from the lowest (0) to the highest (6).

As with tone frequency, most people cannot decide on volume levels without listening to them. Therefore, you can set the tone length by listening to it. When you are at the Tone Volume programming selection, you can increment the tone volume by scanning the **Hex A** tag. Each time you scan the **Hex A** tag, the tone volume increments to the next level. After reaching level 6 (maximum), the procedures starts over, beginning with volume level 0 (minimum). End this mode by scanning the **End** tag or another valid Hex tag.





Timeouts

Timeouts

Controls Lockout Time and Active Time.

Lockout Time

Prevents repeatedly reading the same bar code. After a bar code, is read, it must be removed from the scan pattern and the lockout time must elapse before the same bar code can be read again.

Eight different lockout times are available ranging from 450 milliseconds to the maximum value of 1500 milliseconds. The default value is 750 milliseconds. You select times using the **Hex 0** through **Hex 7** tags.

Restart Lockout Timer

Restarts the Lockout Timer each time the same bar code is read. If the bar code moves out of the scan pattern and then back into the scan pattern before the lockout time elapses, the Lockout Timer restarts. The **Hex 0** tag turns this option off. The **Hex 1** tag turns it on (default value).

Active Time

Specifies length of time that the unit stays on after the last good read. Set this value to be long enough for the consumer to pick up and scan the next item. However, keep in mind that you want to minimize the amount of time the laser is on.

Nine options range from 5 seconds to 45 seconds in increments of 5 seconds. To select the Active Time, use the **Hex 0** through **Hex 8** tags. The default time is 30 seconds.





Timeouts

Multiplier

Multiplies the standard Active Times by four. Multiplier is disabled by default.

- 5 seconds becomes 20 seconds
- 10 seconds becomes 40 seconds
- 15 seconds becomes 60 seconds
- 20 seconds becomes 80 seconds
- 25 seconds becomes 100 seconds
- 30 seconds becomes 120 seconds
- 35 seconds becomes 140 seconds
- 40 seconds becomes 160 seconds
- 45 seconds becomes 180 seconds





Bar Codes - 1

Contains programming parameters for UPC/EAN bar codes.

UPC/EAN

Controls reading of UPC/EAN bar codes. When you are in the Bar Codes - 1 programming mode, the UPC/EAN function can be enabled (default) by scanning the **Hex 1** tag and disabled by scanning the **Hex 0** tag.

If enabled, you can program the following parameters.

Version D

Permits you to enable or disable reading UPC Version D bar codes. There are six choices: None (default), D-1, D-2, D-3, D-4, and D-5. To select the type of Version D parameter, scan the appropriate **Hex 0** through **Hex 5** tag. Scanning a valid Hex tag ends the input for this parameter option.

Extend UPC-A to EAN-13

Determines whether to pad the tag data by putting a zero at the front of the tag data, changing 12-digit UPC tags to a 13-character EAN tags. The program does this. Scan the **Hex 0** tag to disable (default) this option or the **Hex 1** tag to enable it. Scanning a valid Hex tag ends the input for this parameter option.

Extend UPC-E to UPC-A

Determines whether to pad the tag data, changing 6-digit truncated UPC tags to 12-character UPC-A tags. Scan the **Hex 0** tag to disable (default) this option or the **Hex 1** tag to enable it. Scanning a valid Hex tag ends the input for this parameter option.





Bar Codes - 2

Contains parameters for Code 39 bar codes.

Code 39

Enable (default) Code 39 bar code reading by scanning the **Hex 1** tag and disable it by scanning the **Hex 0** tag.

If enabled, you can program the following parameters.

Minimum Characters Allowed

Defines how many characters in a bar code must be read the same by two separate scans before determining a valid read has occurred. Set this option to the number of characters in a typical tag to ensure that typical tags are read with at least two complete good scans before sending the tag data to the host terminal or PC.

There are fourteen selections for this parameter (characters 2 through 15). Scan the proper Hex tag (**Hex 2** through **Hex F**) to enter your selection. The default is four characters.

Full ASCII

Code 39 permits full ASCII capability by encoding the additional characters. Disable (default) this function by scanning the **Hex 0** tag or scan the **Hex 1** tag to enable it.

Check Digit Present

Determines whether the bar code must contain a correct check digit to be identified as valid. If enabled, the bar code is ignored if a check digit is not present. If disabled (default), a check digit within a bar code is considered part of the data and is transmitted to the host. Scan the **Hex 0** tag to disable this option or the **Hex 1** tag to enable it.

Transmit Check Digit

Determines whether the check digit is sent to the host terminal or PC. Scan the **Hex 0** tag to disable (default) this option or the **Hex 1** tag to enable it.





Bar Codes - 3

Contains parameters for Interleaved 2 of 5 bar codes.

Interleaved 2 of 5

This function is disabled by scanning the **Hex 0** tag and enabled by scanning the **Hex 1** tag. The default is to enable reading.

If enabled, you can program the following parameters.

Bar-Code Length

Selects the method for determining if an Interleaved 2 of 5 bar code is a valid length. The Range Check method identifies a length range by specifying the minimum and maximum number of characters. The Specific Check method identifies two specific bar-code lengths by specifying the number of characters in each. With this option, the number of characters in all Interleaved 2 of 5 bar codes must be one of the two numbers. Scan the **Hex 0** tag to use the Range Check method or scan the **Hex 1** tag to use the Specific Check method. The default is the Range Check method.





<div></div> Value 1 and Value 2	<p>Specifies the valid Interleaved 2 of 5 bar code lengths. Use this option with the Bar-Code Length parameter described in the previous section. If you select the Range Check method, Value 1 specifies the minimum number of characters in a valid Interleaved 2 of 5 bar code, and Value 2 specifies the maximum number of characters. If you select the Specific Check method, Value 1 contains one specific number of characters, and Value 2 contains another.</p> <p>Accepted values for Value 1 and Value 2 are 4 to 54 readable characters. The number of readable characters must be an even number; if you specify an odd number, it is rounded down one. Each value is input using two Hex tags. The first can be Hex 0 through Hex 5 and the second Hex 0 through Hex 9. The default for Value 1 is 08; the default for Value 2 is 16.</p>
<div></div> Check Digit Present	<p>Determines if the bar code must contain a correct check digit to be identified as valid. If enabled, the bar code is ignored if a check digit is not present. Scan the Hex 0 tag to disable this option or scan the Hex 1 tag to enable it. Disable is the default.</p>
<div></div> Transmit Check Digit	<p>Determines whether the check digit is sent to the host terminal or PC. Scan the Hex 0 tag to disable this option or scan the Hex 1 tag to enable it. The default is to disable sending the check digit.</p>





Bar Codes - 4

Contains programming parameters for Code 128 bar codes.

Code 128

Disable the scanner's ability to read Code 128 bar codes by scanning the **Hex 0** tag and enable it (default) by scanning the **Hex 1** tag.

Selecting the disable option does not prevent the scanner from reading Parameter Programming Tags (found in the *Programming Tags* booklet BST0-2121-74) even though they are Code 128 bar code tags.

Minimum Data Characters Allowed

Refers to the Code 128 characters on a numeric-only Code 128 symbol. For example, given a numeric-only Code 128 symbol of "12 34 56 78", the Minimum Data Characters Allowed would be 4; each Code 128 character is composed of two numeric data characters. Enter your selection by scanning the appropriate hex tag (**Hex 1** through **Hex 5**). The default is three.

UCC 128

Refers to the Uniform Council Code 128 Data Formatter Start Code. Scan the **Hex 0** tag to disable this function or scan the **Hex 1** tag to enable it. The default is disable.





Label Identifiers

Selects the parameters for adding or deleting label identifiers to RS-232 communications.

Identifier Type

Defines the type and placement of label identifiers. You can select the following:

- default identifiers that prefix the message data
- default identifiers that suffix the message data
- unique prefix identifiers
- unique suffix identifiers
- no identifiers

Select the Identifier Type by scanning the appropriate **Hex 0** through **Hex 4** tag. If you select Default Prefix and Default Suffix identifiers, you do not need to enter any other parameter in this programming mode. The factory set default is Default Prefix.





Label Identifiers

Default Prefix and Default Suffix

Scan the **Hex 0** tag to use the default prefix and the **Hex 1** tag to use the default suffix. The default label identifiers vary depending on the type of bar code read. The following chart gives the default identifiers for each bar-code type.

Bar Code Type	Default Prefix Identifiers	Default Suffix Identifiers
UPC-A	41H	41H
UPC-E	45H	45H
UPC-D	44H	44H
EAN-8	46H 46H	46H
EAN-13	46H	46H
39	42H 31H	42H 31H
Interleaved 2 of 5	42H 32H	42H 32H
Code 128	42H 33H	42H 33H

None

Scan the **Hex 2** tag for the None selection. No label identifiers are added to the message data.

Unique Prefix and Unique Suffix

Scan the **Hex 3** tag to use a unique prefix or the **Hex 4** tag to use a unique suffix. A Unique Identifier is associated with each bar-code type. You may use one, two, or no Common Bytes. The figure on the following page shows the possible tag data portion of the message formats.





Label Identifiers

Unique Prefix - All Bar Codes

Unique Identifier	Bar Code Data		
Common Byte 1	Unique Identifier	Bar Code Data	
Common Byte 2	Unique Identifier	Bar Code Data	
Common Byte 1	Common Byte 2	Unique Identifier	Bar Code Data

Unique Prefix - UPC Version D

Unique Identifier	Bar Code Data			
Common Byte 1	Unique Identifier	Bar Code Data		
Common Byte 2	Unique Identifier	Bar Code Data		
Common Byte 1	Common Byte 2	Unique Identifier	Bar Code Data	
Unique Identifier	Version Number	Bar Code Data		
Common Byte 1	Unique Identifier	Version Number	Bar Code Data	
Common Byte 2	Unique Identifier	Version Number	Bar Code Data	
Common Byte 1	Common Byte 2	Unique Identifier	Version Number	Bar Code Data

Unique Suffix - All Bar Codes

Bar Code Data	Unique Identifier		
Bar Code Data	Common Byte 1	Unique Identifier	
Bar Code Data	Common Byte 2	Unique Identifier	
Bar Code Data	Common Byte 1	Common Byte 2	Unique Identifier

Unique Suffix - UPC Version D

Bar Code Data	Unique Identifier			
Bar Code Data	Common Byte 1	Unique Identifier		
Bar Code Data	Common Byte 2	Unique Identifier		
Bar Code Data	Common Byte 1	Common Byte 2	Unique Identifier	
Bar Code Data	Unique Identifier	Version Number		
Bar Code Data	Common Byte 1	Unique Identifier	Version Number	
Bar Code Data	Common Byte 2	Unique Identifier	Version Number	
Bar Code Data	Common Byte 1	Common Byte 2	Unique Identifier	Version Number

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Label Identifiers

Common Byte 1 and Common Byte 2

Specifies the data sent to the host terminal or PC in the Common Byte fields. Input this information as two Hex characters for each Common Byte and use Hex values from 20 to 7E (refer to the *ASCII Code Chart* in *Appendix A*). Do not use the same characters as the Terminator Byte or the message may terminate too soon. Also, a Common Byte cannot be 00. If you are not going to use a Common Byte, scan any Hex tag twice except **Hex 0** or the Terminator Byte value. The following table shows the default values.

Common Byte	Hex	ASCII
Common Byte 1	5D]
Common Byte 2	42	B

Note: Four tags must be scanned in order to go to the next parameter.

Bar-Code Type

Selects the bar-code type for entering its associated label identifier information. After entering a Bar-Code Type, you enter the label identifier information as described in the following sections. This procedure repeats until you have changed all the label identifiers for each bar-code type desired. Scan the **Hex 0** through **Hex 7** tag to enter the appropriate Bar-Code Type. Since you must select each of these individually for your application, no default exists for this parameter.





Label Identifiers

Common Byte

Selects the common bytes to add to the bar-code data message if any are necessary. Each entry is unique to the previously specified Bar-Code Type. Scan the **Hex 0** tag for no Common Bytes, **Hex 1** tag for Common Byte 1, **Hex 2** tag for Common Byte 2, or **Hex 3** tag for Both Common Bytes. The default for this parameter uses Common Byte 2 as a suffix for Code 128, and Interleaved 2 of 5 bar code data. UPC and EAN bar codes do not use Common Bytes.

Unique Identifier

Permits you to specify the data sent to the host terminal or PC in the Unique Identifier field. Each entry is unique to the previously specified Bar-Code Type. Input this information as two Hex characters for each Common Byte and use Hex values from 20 to 7E (refer to the *ASCII Code Chart* in *Appendix A*). Do not use the same characters as the Terminator Byte because the message will terminate too soon. The following table shows the default values.

Hex Tag	Bar Code Type	Hex	ASCII
0	UPC-A	41	A
1	UPC-D	44	D
2	UPC-E	45	E
3	EAN-8	46	F
4	EAN-13	47	G
5	Code 39	31	1
6	Code 128	33	3
7	Interleaved 2 of 5	32	2





Label Identifiers

Version Number

Use this parameter only if UPC-D is specified as the bar code type. To include the Version Number in ASCII, scan the **Hex 1** tag. Scan the **Hex 0** tag if you do not want to include the Version Number. The default is do not include it.





RS-232 Parameters - 1

Contains four of the parameters required for RS-232 communications. You can select the Baud Rate, Parity, Stop Bits and Character Length, and Handshake Options.

Baud Rate

The Baud Rate parameter contains seven baud rate selections: 300, 600, 1200, 2400, 4800, 9600, and 19200. Scan the appropriate **Hex 0** through **Hex 6** tag to set the desired baud rate. The default is 9600 baud.

Parity

Five parity selections are available: Odd, Even, Mark, Space, and None. For 7-bit characters, bit 8 is the parity bit; for 8-bit characters, bit 9 is the parity bit. Choosing no parity and 7-bit character length results in sending two stop bits. Two stop bits must also be received. Scan the appropriate **Hex 0** through **Hex 4** tag to select the desired Parity. The default is Odd parity.

Stop Bits and Character Length

Contains four selections:

- 1 Stop Bit and 7-Bit Character length (0)
- 1 Stop bit and 8-Bit Character length (1)
- 2 Stop Bits and 7-Bit Character length (2)
- 2 Stop Bits and 8-Bit Character length (3)

Choosing no parity and 7-Bit Character results in sending two stop bits. Two stop bits must also be received. If you select 8-Bit Character length and parity, only one stop bit is sent. Scan the appropriate **Hex 0** through **Hex 3** tag to set the Stop Bits And Character Length. The default is 1 Stop Bit and 8-Bit Character length.





RS-232 Parameters - 1

Handshake

Offers six options:

- RTS is always low, CTS is ignored (**Hex 0** tag).
- RTS is always high, CTS is ignored (**Hex 1** tag).
- NCR 7800 raises RTS and waits for CTS to go high before transmitting (**Hex 2** tag).
- NCR 7800 raises RTS before transmitting and ignores the state of CTS (**Hex 3** tag).
- RTS is always low and NCR 7800 waits for CTS to go high before transmitting (**Hex 4** tag).
- RTS is always high and NCR 7800 waits for CTS to go high before transmitting (**Hex 5** tag).

When considering these, note that RTS can be controlled and CTS can only be monitored. Scan the appropriate **Hex 0** through **Hex 5** tag to set the Handshake option. The default is RTS High Wait For CTS.





RS-232 Parameters - 2

Contains some of the parameters required for RS-232 communications.

BCC Option

Binary Check Character (BCC) is the exclusive OR of each byte sent prior to the BCC, except for the prefix byte. The BCC Option parameter permits you to enable or disable BCC. When enabled, the BCC is the last character sent. Scan the **Hex 0** tag to disable the BCC Option or scan the **Hex 1** tag to enable it. The default is for BCC to be disabled.

Interface Control

Permits you to select how to control the transfer of data to the host terminal or PC. The selections are: None, ACK/NAK, XOn/XOff, and ACK/NAK and XOn/XOff.

If you select ACK/NAK, each message sent requires an ACK or a NAK to be returned before another message can be sent. Receiving a message properly causes an ACK to be sent. If there are any errors, a NAK is sent instead. The message is then sent again.

An XOff message, which can be sent at any time, does not permit the transmission of data an XOn message is received. If sending a message when an XOff is received, data transmission stops after sending the current byte. After an XOn message is received, the remainder of the message is sent. XOff and XOn messages are not acknowledged with ACK or NAK messages.

Select the interface control you want by scanning the appropriate **Hex 0** through **Hex 3** tag. The default is None.





RS-232 Parameters - 2

Check Digit

Permits you to enable or disable the transmission of UPC-A, UPC-E, EAN-8, and EAN-13 check digits. Scan the appropriate **Hex 0** through **Hex 3**. The default is enable UPC-A, EAN-8, and EAN-13 and disable UPC-E.

Retransmit on ACK/NAK Timer Expiration

A timer is set when sending a message to the host terminal or PC. If the timer expires before receiving an ACK or NAK response, the message is sent again. Scan the **Hex 0** tag to disable this function or the **Hex 1** tag to enable it. The default is for retransmit on ACK/NAK Timer Expiration to be enabled.





RS-232 Prefix Byte

Controls the use of prefix bytes. If you use an RS-232 Prefix Byte, it is the leading character in each message sent to the host terminal or PC. Following it is the message data which may include a message VLI as its first byte.

Prefix Byte

Contains two selections: Disable and Enable. Scan the Hex 0 tag to disable the Prefix Byte or the Hex 1 tag to enable it. The default is Disable.

Note: When selecting RS-232 Direct communications protocol, the Prefix Byte option is enabled.

ASCII Code

Specifies what ASCII code to use for the Prefix Byte. Enter your selection by scanning the two appropriate Hex tags, as listed in the *ASCII Code Chart* in *Appendix A*. Although you can select any value from 00 to 7F (Hex), the Start of Text (STX) ASCII Code (**Hex 02**) is recommended. If do not use Hex 02, **01 - 0F** (Hex) are recommended. Scan the two appropriate Hex tags (**Hex 0** through **Hex 7** for the first character and **Hex 0** through **Hex F** for the second). The default is 02.





RS-232 Terminator Byte

Controls the use of terminator bytes. If you use an RS-232 Terminator Byte, it goes at the end of the message sent to the host terminal or PC. If you included a BCC (RS-232 Parameters -2 programming mode), it follows the Terminator Byte and includes the Terminator Byte in the calculation.

Terminator Byte

Contains two selections: Disable and Enable. Scan the **Hex 0** tag to disable the Terminator Byte or scan the **Hex 1** tag to enable it. The default is Enable.

ASCII Code

Specifies what ASCII code to use for the Terminator Byte. Enter your selection by scanning the two appropriate Hex tags as listed in the *ASCII Code Chart* in *Appendix A*. Although you can select any value from 01 through 7F (Hex), the End of Text (ETX) ASCII Code is recommended (**Hex 03** or Carriage Return, which is **Hex 0D**). If do not use **Hex 03**, **01 - 0F** (Hex) are recommended. Scan the two appropriate Hex tags (**Hex 0** through **Hex 7** for the first character and **Hex 0** through **Hex F** for the second). The default is 0D.





Power-Up Message

A power-up message can be sent at power-up or upon receiving a Send Power Up Message command.

Power-Up Message

Enables or disables the Power-Up Message function. The default is Disable.

Data

Stores the content of the power-up message. Up to twelve pairs of hex characters from the ASCII Code Chart can be entered.





Display Parameters

Display Parameters

Allows you to select the default display time and character set.

Default Display Time

Controls the time a temporary display message is displayed. The selections are from 0 - 9 and increment the time from 10 seconds to 55 seconds, in 5-second intervals. The default value is a display time of 15 seconds.

Character Set Selection

There are three character sets which can be selected: Code Page 850 International English (default), Katakana, and Cyrillic.





Parameter Version Number

Keep track of the current version of the parameter settings by assigning a Parameter Version Number. The version number is a two byte entry, which means four Hex tags must be scanned. Each hex tag value can range from 0 - F.





Parameter Version Number





Chapter 6

Troubleshooting the NCR 7800 Consumer Price Verifier

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Fault Identification

The NCR 7800 Consumer Price Verifier uses tones and a display to help identify problems. Diagnostic checks are made during operation and power-up. The following table can help isolate problems.

Problem	Possible Cause or Action to Take
Status LED shows error	See diagnostics charts on next pages.
Error tones	See diagnostics charts on next pages.
Bad reads	Bad tag. Unrecognizable bar code. In Programming Mode.
Intermittent reads	Loose connection. RF interference. Wrong laser output.
Only reads 1 tag	RTS/CTS handshaking enabled and host not connected. Host doesn't recognize unit.
No host communication	Wrong communication configuration. Host not connected. Wrong communication protocol.





Diagnostics

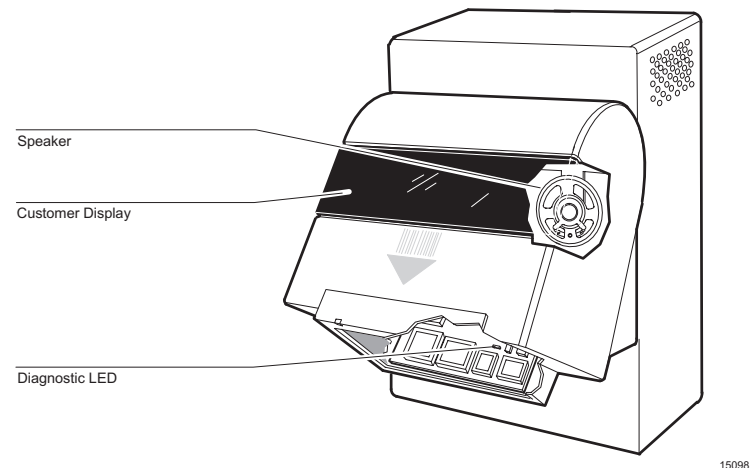
Diagnostics

Three types of built-in diagnostics support are available.

- Power-up diagnostics run automatically each time the NCR 7800 is powered up or reset; they check RAM motor speed, laser operation, and stepper motor operation (if equipped).
- Real-time diagnostics continuously check specific components during operation.
- Extended diagnostics may only be run by the user at power-up.

A built-in demonstration mode may also be useful for operation testing. Refer to the Demonstration Mode section at the end of this chapter.

Diagnostic Feedback Points





Diagnostics

Power-up Diagnostics

Note: LED flash sequences repeat every 3 seconds. Tone sequences repeat twice.

LED (inside scan window)	Tone	Displayed Information 30 Seconds	Symptoms	Suspect this Problem/Component
Off	Off		No power.	<ul style="list-style-type: none">• Power supply• Cables
On	Off		ASIC write/read failure	<ul style="list-style-type: none">• Controller board
Off	On	"Laser E4"	Laser may be on when it should be off. <i>Remove power immediately.</i>	<ul style="list-style-type: none">• Controller board• Laser module
On	1 beep		Bad EPROM	<ul style="list-style-type: none">• Controller board
2 flashes	2 beeps		RAM write/read failure	<ul style="list-style-type: none">• Controller board
4 flashes	4 beeps	"Laser E4"	Laser off but should be on.	<ul style="list-style-type: none">• Controller board• Laser module
5 flashes	5 beeps	"DC Motor E5"	Wrong laser motor speed	<ul style="list-style-type: none">• Laser module• Controller board
6 flashes	6 beeps	"EEPROM E6"	EEPROM cannot write to memory.	<ul style="list-style-type: none">• Controller board
7 flashes	7 beeps	"Stepper Motor E7"	Mirror or stepper motor not running.	<ul style="list-style-type: none">• Stepper assembly• Controller board
8 flashes	8 beeps		Display not working correctly.	<ul style="list-style-type: none">• Display assembly





Diagnostics

Real-time Diagnostics

During operation, the following functions are continuously monitored.

- Motor speed
- Laser presence or absence, as appropriate
- Stepper motion

A real-time diagnostics error forces a power cycle in order to determine if the failure is permanent. Power-up diagnostics then occur automatically.

Extended Diagnostics

The following tests are performed after the **Diagnostic Mode** tag is scanned. A *good read tone* (three beeps) confirms each tag read, and the status LED flashes during the tests. Quit the Extended Diagnostics Mode by scanning the **Abort** tag or power cycling the unit.

Tag	Tested/Displayed	Comment
Hex 2	EIA-232-D communication test.	See EIA-232-D Turnaround Instructions.
Hex 3	EIA-232-D communication option.	Displays until you power cycle, reset, or scan another tag.
Hex 4	All dots in each character position are displayed one at a time.	
Hex 5	Firmware part number (U7 on Combo board).	
Hex 6	EEPROM version number programmable.	
Hex 7	Power-up message.	
Hex 8	"Display Controller Part # <i>n</i> "	
Hex 9	All characters, one at a time, in every character position.	Repeats until you power cycle, reset, or scan another tag.





Diagnostics

EIA-232-D Turnaround Instructions

1. Remove power.
2. Install jumper pins 2-3 and 4-5 at host end of interface cable. For 25-Pin D Shell, use pins 2-3. For 9-Pin D Shell, use pins 7-8.
3. Supply power.
4. Scan the diagnostic mode tag.
5. Scan the **Hex 2** tag to run the test. *Repeat if desired.*
6. Remove power.
7. Remove the turnaround jumpers.





Repairing the NCR 7800

On-site and mail-in service options are available.

On-site Service

- Hardware problems - call **1-800-262-7782**
- Software problems - call **1-800-543-9935**

Mail-in Service

If you have determined that you cannot correct a problem, contact the NCR Global Support center mail-in service number (**1-800-551-7803**).

1. Identify yourself by customer name and that you are experiencing a problem that is covered by mail-in warranty or mail-in maintenance.
2. With the help of the support analysis, try to identify the probable cause of your problem and a possible remedy.
3. If you cannot remedy the problem, get instructions from support analysis to prepare the unit for mail-in. A return authorization number will be assigned at this time.

Note: All repair status inquiries require a return authorization number.





Further Information

Further Information

Obtain documentation by calling Information Products Publishing at **800-543-2010** or **513-445-3727**. NCR employees can call the VoicePLUS number at **622-3727**.

PDF files of documentation are available at:

<http://www.info.ncr.com>

The following publications are available:

- NCR 7800 Installation Guide (497-0405215)
- NCR 7800 User's Guide (BD20-1306-A)
- NCR 7800 Repair Guide (BD20-1307-A)
- NCR 7800 Interface Programming Guide (BD20-1308-A)
- NCR 7800 Parts Identification Manual (BUF0-0624)
- NCR Scanner Programming Tags (BST0-2121-74)

Obtain additional information from your NCR representative.





Demonstration Mode

Demonstration Mode

The Demonstration Mode displays a description of a product and its price when one of four available UPC numbers (listed in table below) are scanned. The unit will display "Your Store" on the first line and "Present item below" on the second line of the display.

Since the tags listed in the table may not be available, you can present any item with a UPC label. With the fifth read of a tag that cannot be matched, the not-on-file message is displayed: "Sorry your item is not in our files."

In demonstration mode, scanned items are not transmitted to the host, and no data can be received.

Demonstration Mode			
To Enter Scan Tag(s):	Diagnostic Mode, Program Mode, (Hex) D		
Item	Description	UPC #	Price
Coca-Cola	Coca-Cola	4963406	\$2.00
Pepsi	Pepsi	1201303	2 for \$4.00
	Polo Shirt	40140050717	\$18.99
	T-shirt	40140038712	3 for \$10.99
To Exit Scan Tag(s):	Reset (or power cycle unit)		

Note: Format must be 8-bit data or 7-bit data with space parity for the tag file to function.





Appendix A

Programming Worksheets

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Configuration Default	A-8





Programming Worksheets

10

Communications Protocol

Protocol

0

1

RS-232
Direct

RS-232
Indirect

14759

11

Good Read Tone

A

Tone On/Off

0

1

Off

On

B

Tone
Frequency
(Hertz)

0

1

2

3

4

5

6

7

524

572

617

705

775

860

947

1250

C

Tone Length
(Milliseconds)

0

1

2

3

4

5

6

7

8

9

25

50

75

100

125

150

175

200

225

250

D

Tone
Volume

0

1

2

3

4

5

6

Note: When entering Tone Frequency, Tone Length, or Tone Volume, the adjustment can be incremented upward by scanning the **Hex A** tag. Each time you scan the **Hex A** tag, the selection increases one unit. Scan the **End** tag or a valid Hex tag to end this mode of input.

14760



Programming Worksheets

1 2 Timeouts

A Lockout Time (Milliseconds)
 450 600 750 900 1050 1200 1350 1500

B Restart Lockout Timer
 Off On

C Active Time (Seconds)
 Standard Values 5 10 15 20 25 30 35 40 45
 Multiplied Values 20 40 60 80 100 120 140 160 180

D Multiplier
 Disable Enable

E Tag Timeout*
 Disable 5 10 15 20 25 30 35 40

* Accessed only through E Shortcut.

14761

1 3 Bar Codes - 1

A UPC/EAN
 Disable Enable

B Version D
 Disable D-1 D-2 D-3 D-4 D-5

C Extend UPC-A To EAN-13
 Disable Enable

D Extend UPC-E To UPC-A
 Disable Enable

14762



Programming Worksheets

1 4 Bar Codes - 2

A Code 39 ☐ 0 ☒ 1
Disable Enable

B Minimum Characters Allowed Default: ☒ 4

C Full ASCII ☒ 0 ☐ 1
Disable Enable

D Check Digit Present ☒ 0 ☐ 1
Disable Enable

E Transmit Check Digit ☒ 0 ☐ 1
Disable Enable

14784



Programming Worksheets

1 5 Bar Codes - 3

A Interleaved 2 of 5 ☐ 0 ☒ 1
Disable Enable

B Bar Code Length ☒ 0 ☐ 1
Range Check Specific Check

Value 1 → Characters Minimum
Character 1 Character 2
Default:

Value 2 → Characters Maximum
Character 1 Character 2
Default:

C Check Digit Present ☒ 0 ☐ 1
Disable Enable

D Transmit Check Digit ☒ 0 ☐ 1
Disable Enable

14785

1 7 Bar Codes - 4

A Code 128 ☐ 0 ☒ 1
Disable Enable

B Minimum Data Characters Allowed

C UCC 128 ☒ 0 ☐ 1
Disable Enable

14786



Programming Worksheets

		1		6		Label Identifiers							
A	Identifier Type	<input type="text" value="0"/>		<input type="text" value="1"/>		<input type="text" value="2"/>		<input type="text" value="3"/>		<input type="text" value="4"/>			
		Default Prefix		Default Suffix		None		Unique Prefix		Unique Suffix			
B	Common Byte 1	<input type="text" value="0-7"/>		<input type="text" value="0-F"/>		Default:		<input type="text" value="5"/>		<input type="text" value="D"/>			
		Hex Character		Hex Character									
C	Common Byte 2	<input type="text" value="0-7"/>		<input type="text" value="0-F"/>		Default:		<input type="text" value="4"/>		<input type="text" value="2"/>			
		Hex Character		Hex Character									
D	Bar Code Type	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>	<input type="text" value="6"/>	<input type="text" value="7"/>				
		UPC-A	UPC-D	UPC-E	EAN-8	EAN-13	Code 39	Code 128	Interleaved	2 of 5			
	Common Byte	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="2"/>		<input type="text" value="3"/>							
		None	Common Byte 1	Common Byte 2		Both Common Bytes							
	Unique Identifier	<input type="text" value="0-7"/>		<input type="text" value="0-F"/>		Default: Varies according to Bar Code Type.							
		Hex Character		Hex Character									
	Version Number (UPC-D Only)	<input type="text" value="0"/>		<input type="text" value="1"/>									
		Do Not Include		Include									

14787

		2		0		RS-232 Parameters - 1					
A	Baud Rate	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>	<input type="text" value="6"/>			
		300	600	1200	2400	4800	9600	19200			
B	Parity	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>					
		Odd	Even	Mark	Space	None					
C	Stop Bits And Character Length	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="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						
D	Handshake	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>				
		RTS Low CTS Ignored	RTS High CTS Ignored	Raise RTS Wait For CTS	Raise RTS Ignore CTS	RTS Low Wait For CTS	RTS High Wait For CTS				

14788



Programming Worksheets

2 1 RS-232 Parameters - 2

A

BCC Options

0

1

Disable

Enable

B

Interface Control

0

1

2

3

None

ACK/NAK

XOn/XOff

ACK/NAK & XOn/XOff

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

D

Retransmit On ACK/NAK Timer Expiration

0

1

Disable

Enable

14789

2 2 RS-232 Prefix Byte

A

Prefix Byte

0

1

Disable

Enable

B

ASCII Code

0-7

0-F

Hex Character
(ASCII Code Chart)

Hex Character
(ASCII Code Chart)

Default:

0

2

14790



Programming Worksheets

2 3 **RS-232 Terminator Byte**

A Terminator Byte 0 1
Disable Enable

B ASCII Code 0-7 0-F Default: 0 D
Hex Character Hex Character
(ASCII Code Chart) (ASCII Code Chart)

14791

2 4 **Power-Up Message**

A Power-Up Message 0 1
Disable Enable

B Data 0-F 0-F 0-F 0-F
Hex Character Hex Character Hex Character Hex Character
(ASCII Code Chart) (ASCII Code Chart) (ASCII Code Chart) (ASCII Code Chart)

Enter Up to 12 Pairs of Hex Tags

Note: Scan the **End** tag to indicate completed input of data.

14792

2 6 **Display Parameters**

A Default Display Time (Seconds) 0 1 2 3 4 5 6 7 8 9
10 15 20 25 30 35 40 45 50 55

B Character Set 1 2 3
Katakana Cyrillic

14793





Programming Worksheets

Parameter
Version
Number

27

Parameter Version Number

0-F

0-F

0-F

0-F

Defaults: 0000

14794

Default

30

Configuration Default

0

1

2

RS-232
Direct

RS-232
Indirect

RS-232 Direct with
UPC-E tags extended
to UPC-A tags and
codes 128, 39, and
1 2 of 5 disabled.

14795





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User Feedback Form

Title: NCR 7800 Consumer Price Verifier User's Guide

Number: BD20-1306-A

Issue: Release C

Date: 09/01/97

NCR welcomes your feedback on this publication. Your comments can be of great value in helping us improve our information products.

Circle the numbers below that best represent your opinion of this publication.

Ease of use	5	4	3	2	1	0	5 = Excellent
Accuracy	5	4	3	2	1	0	4 = Good
Clarity	5	4	3	2	1	0	3 = Adequate
Completeness	5	4	3	2	1	0	2 = Fair
Organization	5	4	3	2	1	0	1 = Poor
Appearance	5	4	3	2	1	0	0 = Not applicable
Examples	5	4	3	2	1	0	
Illustrations	5	4	3	2	1	0	
Job performance	5	4	3	2	1	0	
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| <input type="checkbox"/> Improve the index | <input type="checkbox"/> Add more step-by-step procedures |
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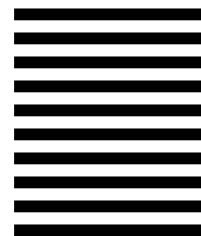
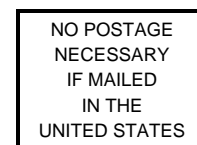
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