



# NCR 7199 Series Thermal Receipt Station Printer

## User Guide

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Atlanta, Georgia, USA

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# Preface

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## Audience

This book is written for store personnel, hardware installer/service personnel, system integrators, and field engineers.

### Note

This document is NCR Voyix proprietary information and is not to be disclosed or reproduced without consent.

## Safety Requirements

In order to ensure compliance with the Product Safety, FCC and CE marking requirements, you must use the power supply, power cord, and interface cable which were shipped with this product or which meet the following parameters:

### Power Supply

UL Listed (QGGQ), Class 2 power supply with SELV (Secondary Extra Low Voltage), non-energy hazard output, input rated 100–240 Vac, 1.5/0.8 A, 50/60 Hz, output rated 24 Vdc, Series i: 2.3 A or 3.125 A, Series ii: 2.5 A.

Use of this product with a power supply other than the NCR power supply will require you to test this power supply and NCR printer for FCC and CE mark certification.

### Interface Cable

A shielded (360 degree) interface cable must be used with this product. The shield must be connected to the frame or earth ground connection or earth ground reference at EACH end of the cable.

Use of a cable other than described here will require that you test this cable with the NCR printer and your system for FCC and CE mark certification.

## **Power Cord**

A UL listed, detachable power cord must be used for this product. For applications where the power supply module may be mounted on the floor, a power cord with Type SJT marking must be used. For applications outside the US, power cords which meet the particular country's certification and application requirements should be used.

Use of a power cord other than described here may result in a violation of safety certifications which are in force in the country of use.

# Wichtige Benutzerinformationen:

Um die Produktsicherheit und die FCC und CE–Markierungsanforderungen bei der Benutzung des Druckers sicherzustellen, müssen entweder das mitgesante Netzgerät, Netzanschlußkabel und Verbindungskabel verwendet werden oder folgende Anforderungen müssen erfüllt sein:

## Netzgerät:

Das Netzgerät muß ein UL verzeichnetes (QGGQ) Netzgerät der Klasse 2 mit SELV (Sekundärextraniederspannung), Nichtenergie Gefahrenaussgang, einer Aufnahmeleistung von 100–240 VAC, 1.5/0.8 A und 50/60 Hz, und einer Leistungsabgabe von 24 VDC, Series i: 3.125 A.c sein, Series ii: 2.5 A.c sein.

Die Benutzung des Produktes mit einem Netzgerät, daß nicht von NCR mitgeliefert wurde erfordert das Testen des Netzgerätes mit dem NCR Drucker auf FCC und CE– Markierungs Befolgung.

## Verbindungskabel:

Bei der Benutzung dieses Produkts muß ein abgeschirmtes (360 Grad) Verbindungskabel benutzt werden. Die Abschirmleitung muß entweder mit dem Rahmens des Gerätes oder der Erde verbunden sein oder alternativ müssen alle Enden des Kabels geerdet werden.

Falls das Verbindungskabel nicht in der hier beschrieben Art benutzt wird, muessen das Kabel und der NCR Drucker auf die FCC und CE–Markierungs Befolgung überprüft werden.

## Netzanschlußkabel:

Für dieses Produkt muß ein in UL aufgelistete, abnehmbares Netzanschlußkabel benutzt werden. Falls das Netzgerät fest auf dem Boden montiert ist, muß ein Netzanschlußkabel mit der SJT Markierung benutzt werden. Für Anwendungen außerhalb der USA, sollte ein Netzanschlußkabel benutzt werden, daß der Zertifizierung und Bestimmung des jeweiligen Landes entspricht.

Das Abweichen der hier beschriebenen Benutzungsanleitung des Netzanschlußkabels kann gegen die gesetzlichen Sicherheitsbestimmungen des jeweiligen Landes verstoßen.

# 用户须知

为了确保产品安全和遵守中国电磁兼容(EMC)规定,必须使用随产品附带或符合下列参数的电源,电源线和接口电缆:

## 电源

中国强制性产品认证,输入为:交流100~240伏,1.5/0.8安倍,50/60赫兹,系列(一)输出为:直流24伏,2.3或3.125安倍;系列(二)输出为:直流24伏,2.5安倍

如使用本产品与非NCR生产的电源产品,必须测试电源和NCR生产的打印机以符合产品安全和中国电磁兼容(EMC)规定

## 接口电缆

本产品必须使用屏蔽(360度)接口电缆。屏蔽层必须连接到金属框架或接地或接口电缆两端的接地参考

使用没有在这里描述的接口电缆将要求您必须测试接口电缆和NCR生产的打印机以符合产品安全和中国电磁兼容(EMC)规定

## 电源线

中国强制性产品认证,可拆卸的电源线。

使用没有在这里描述的电源线可能导致在该国的安全证书失效

销售打印机的安全规定

## 安全注意事项

### 维修

注意:本产品不含有用户可自行更换的部件,如需更换,请联系有资质的技术人员。

### 保险丝的更换

注意:为防止失火只可用相同规格的保险丝进行更换,

\* 警告:在居住环境中,运行此设备可能会造成无线电干扰。

## 안전 주의 사항

### 서비스

주의 : 이 제품은 서비스 부품을 포함하지 않고 있습니다. 서비스는 자격이 있는 서비스 기술자에 의해 제공됩니다.

### 퓨즈 교체

주의: 화재의 위험에 대한 지속적인 보호를 위해 같은 타입과 등급의 퓨즈로 교체해야 합니다. .

### 한국 업무용(A급 기기) 방송통신기자재

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# Federal Communications Commission (FCC) Radio Frequency Interference Statement

## **Warning**

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **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 will be required to correct the interference at his own expense.

## Communication Cables

Shielded communication cables must be used with this unit to ensure compliance with the Class A FCC limits.

## 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 contact NCR Voyix immediately.

The NCR Voyix Company 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 Voyix. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

# Industry Canada (IC)

## Radio Frequency Interference Statement

This Class A digital apparatus meets all requirements of the Canadian Interference–Causing Equipment Regulations.

*Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.*

# Bundeskommunikation Kommission (FCC) Hochfrequenz–Störungs Richtlinie.

**Warnung:** Änderungen oder Änderungen an der Maßeinheit, die nicht ausdrücklich von der Seite, die für die Befolgung verantwortlich ist, genehmigt ist, können zum Entzug der Benutzungsberechtigung dieses Gerätes führen.

**Anmerkung:** Dieses Gerät wurde getestet und entspricht der zulässigen Richtlinien eines digitalen Gerätes der Klasse A, gemäß Abschnitt 15 in den FCC Richtlinien. Diese Richtlinien sind dazu da, einen angemessenen Schutz gegen schädliche Störung bei der kommerziellen Nutzung dieses Gerätes zu gewährleisten. Dieses Gerät erzeugt und benutzt Hochfrequenzenergie und kann Hochfrequenzenergie ausstrahlen. Wenn die Installation und Benutzung dieses Gerätes nicht wie im Benutzer Handbuch beschrieben ist, durchgeführt wird, kann eine schädliche Störung von Funkverbindungen verursacht werden. Der Betrieb dieses Gerätes in einem Wohngebiet kann schädliche Störung verursachen die auf Kosten des Benutzers behoben werden müssen.

## **Kommunikationskabel:**

Dieses Gerät muß in Übereinstimmung mit Kategorie A FCC Richtlinien mit einem abgeschirmten Kabel betrieben werden.

## **Benutzerinformationen:**

Dieses Gerät muß wie in der Hersteller Anweisungen beschrieben installiert und benutzt werden. Jedoch gibt es keine Garantie dafür, daß Funkstörung nicht in bestimmten kommerziellen Installation auftritt. Für den Fall, daß das Gerät Funkstörungen verursacht, was durch das An und Abschalten des Gerätes festgestellt werden kann, wird der Benutzer aufgefordert sofort mit NCR Kontakt aufzunehmen.

NCR ist nicht für Radio- oder Fernsehstörungen verantwortlich, die durch unautorisierte Änderung der Ausrüstung oder den Ersatz der anschließenden Kabel oder durch Anschluß von Geräten hervorgerufen wird, die nicht ausdrücklich von NCR genehmigt wurden sind. Die Korrektur von Störungen, die durch solche unautorisierte Änderung, Ersatz oder Zubehör verursacht werden, liegt in der Verantwortlichkeit des Benutzers.

## **Industrie–Kanada (IS) Hochfrequenz–Störungs Richtlinie:**

Dieses digitale Gerät der Klasse A entspricht allen Anforderungen der kanadischen Störung–Verursachende Geräte Richtlinie.

### **无线电频率干扰声明**

#### **用户须知**

本设备已经过测试,证明其符合A级数字设备的限定。这些限制旨在对设备在商业环境中运作时提供合理的保护,以防有害干扰。本设备产生,使用,并能发射无线电频率能量。因此如果不按照使用说明书安装和使用,可能对无线电通讯造成有害干扰。如果在住宅区使用本设备很可能造成干扰。用户将被要求自费纠正干扰。

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#### **中国电磁兼容声明:**

警告:在居住环境中,运行此设备可能会造成无线电干扰。

## Caution labels information



Hot Surface, Do not touch / Surface chaude, Ne pas toucher.



Hazardous Moving Parts, Keep Fingers and Other Body Parts Away/ Parties Mobiles  
Dangereuses Tenir Les Doigts Et Les Autres Parties Du Corps Éloignés.

## References

- *NCR 7199 Series Thermal Receipt Station Printer Service Guide* (BCC5-0000-5174)
- *NCR 7199 Series Thermal Receipt Station Printer Parts Identification Manual* (BCC5-0000-5173)
- *NCR 7197 to 7199 Thermal Receipt Station Printer Migration Guide* (BCC5-0000-5175)
- *NCR 7199 Series i to 7199 Series ii Thermal Receipt Station Printer Migration Guide* (BCC5-0000-5672)
- *NCR 7199 Series Thermal Receipt Station Printer Programmer's Guide* (BCC5-0000-5170)

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# Revision Record

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Issue	Date	Remarks
A	Mar 2017	First Issue
B	Dec 2017	<ul style="list-style-type: none"><li>• Updated the contact information in the "Ordering Thermal Receipt Paper" section.</li><li>• Updated the table in the "Other Supplies" section.</li><li>• Added cable routing options in the "Connecting the Cables" section for power supply cables with a ferrite bead.</li><li>• Added the "Stuck Cutter Blade" section in Chapter 2.</li></ul>
C	Dec 2018	Added notes to the "Stuck Cutter Blade" section in Chapter 2
D	Jul 2019	<ul style="list-style-type: none"><li>• Added the 1432-C403-0040 Y-cable</li><li>• Updated the Ordering Paper and Supplies section</li></ul>
E	Sep 2019	<ul style="list-style-type: none"><li>• Updated the steps on the following topics:<ul style="list-style-type: none"><li>• Connecting the cables</li><li>• Software or hardware configuration</li></ul></li><li>• Removed "Limited Energy Source" phrase from the <i>Power Supply</i> safety information</li><li>• Added the "Hazardous Moving Parts" caution</li></ul>
F	Dec 2019	Added a warning for incorrect connection of USB cable
G	Jun 2020	Updated the <i>Selecting Thermal Receipt Papers</i> section
H	May 2021	Removed the "Black mark sensor as factory" option from the list of General Features

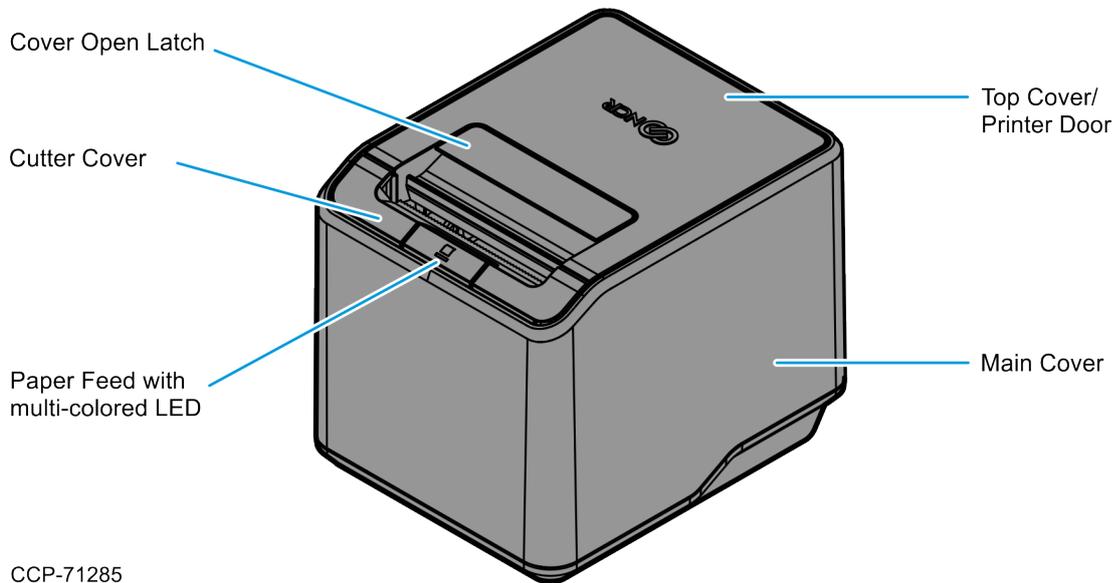
Issue	Date	Remarks
I	Aug 2021	<ul style="list-style-type: none"> <li>• Updated procedure for Stuck Cutter Blade error</li> <li>• Added procedure for Stuck Cutter Blade error for when the top cover cannot be closed</li> <li>• Updated Troubleshooting tables for LED colors</li> <li>• Updated the Printer Status LED error blink pattern</li> <li>• Added the blown fuse error</li> <li>• Added procedures for setting the font and logo</li> <li>• Added a note in the <i>Checking for USB Support on the Host Computer</i> section</li> <li>• Added the Receipt Direction note in the <i>Choosing a Location</i> section</li> </ul>
J	Jan 2022	Added Koehler Blue4est® paper
K	Apr 2022	Updated instructions for resetting the printer
L	Oct 2022	Updated the <i>Radio Frequency Interference Statement</i> for China
M	Feb 2023	<ul style="list-style-type: none"> <li>• Updated programming information</li> <li>• Added warnings in using and connecting the cash drawer</li> </ul>
N	May 2023	Converted to Guild template
O	Sep 2023	Added NCR 7199 Series ii information
P	Jan 2024	Updated screw specifications for wall mount
Q	May 2024	<ul style="list-style-type: none"> <li>• Updated printer dimensions</li> <li>• Updated paper thickness</li> <li>• Added code 93 to the list of supported barcodes</li> <li>• Added a table to compare 7199 Series i and Series ii specifications</li> <li>• Added a radio interference warning to the Preface</li> </ul>
R	Jul 2024	<ul style="list-style-type: none"> <li>• Added "<a href="#">Changing the USB Type setting</a>" on page 33</li> <li>• Added "<a href="#">Printer Cannot Connect through USB</a>" on page 48</li> <li>• Converted to Voyix template</li> </ul>

Issue	Date	Remarks
S	Oct 2024	Updated links
T	Jan 2025	Changed Cover Lock for 7199ii to optional in " <a href="#">Technical Specifications Comparison</a> " on page 2

# Introduction

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## General Description



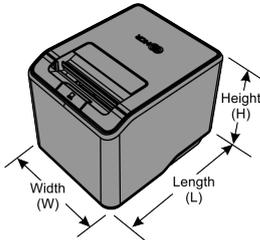
The NCR 7199 Series Thermal Receipt Station Printer delivers high-performance receipt printing in a compact and flexible solution. This printer provides a solution that is designed for any environment that requires thermal receipt printing.

The printer's high-speed thermal printing capability and proven reliability can help reduce transaction time, increasing customer satisfaction, and throughput. It prints crisp text, at a rate of 355 mm (14 inches) per second for Series i and 406.4 mm (16 inches) per second for Series ii, and sharp graphics in 16 levels of grayscale. The printer can be wall mounted, integrated with an NCR RealPOS terminal, or placed on the countertop as a front or top exiting receipt printer. It is flexible enough to meet the customer's changing needs or space constraints.

The printer can be connected to any host computer that uses USB communication interface. The printer is also available with RS-232C or LAN communication interface.

# Technical Specifications Comparison

The following table provides a comparison between NCR 7199 Series i and NCR 7199 Series ii printers.

Parameter	NCR 7199 Series i	NCR 7199 Series ii
<b>Speed</b>	355.6 mm (14 in.) per second	406.4 (16 in.) per second
<b>Resolution</b>	203 dpi	
<b>Dimension</b> (L x W x H)	163.5 x 132 x 131 mm (6.44 x 5.20 x 5.16 in.)	
		
<b>Weight</b>	1.1 kg (2.4 lb)	
<b>Communication Interface</b>	<ul style="list-style-type: none"> <li>• USB/Power (Default)</li> <li>• Serial (Optional)</li> <li>• Ethernet (Optional)</li> </ul>	<ul style="list-style-type: none"> <li>• USB/Power (Default)</li> <li>• Serial (Optional, common with Series i)</li> <li>• Ethernet (Optional, New)</li> </ul>
<b>Cash Drawer</b>	Yes (up to 2)	
<b>Reliability: Mean Cycles Between Failures (MCBF)</b>	60 million lines	
<b>Memory</b>		
Flash	64 megabits (8 megabytes)	128 megabits (16 megabytes)

Parameter	NCR 7199 Series i	NCR 7199 Series ii
SDRAM (User-defined Buffer)/ Logo Buffer	<ul style="list-style-type: none"> <li>• User-defined Logo Buffer: 256 kilobytes</li> <li>• User-defined Character area: 64 kilobytes</li> <li>• User-defined Data area: 64 kilobytes</li> <li>• Macro area: 2 kilobytes</li> </ul>	
EEPROM	2 kilobits	
<b>Thermal Head</b>		
Thermal Print Head Life	200 km	
Thermal Head Failure Detection	Yes	
Thermal Head Position	Bottom	
Serviceability	<ul style="list-style-type: none"> <li>• No tools are required to replace the thermal head.</li> <li>• The standard time is around 15 seconds.</li> </ul>	
<b>Cutter</b>		
Cutter Life	2 million cuts (61 µm)	
Full Cut	No	
Partial Cut	Yes	
<b>Media</b>		
Loading	Easy drop	
Paper Thickness	55 to 65 µm	48 to 82 µm
Paper Width	<ul style="list-style-type: none"> <li>• Default: 80 mm (+0.5 / -1.2 mm)</li> <li>• Optional: 58 mm (+0.0 / -1.0 mm)</li> </ul>	
Paper Diameter	Up to 83 mm (3.27 in.)	
Thermal Layer Coating	Outward	

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Parameter	NCR 7199 Series i	NCR 7199 Series ii
<b>Panel</b>		
Power Button	No	
	<p><b>Note</b> To remove power from the printer, disconnect it from the power source.</p>	
Feed Button	Yes, with a tri-color LED	
	<p><b>Note</b> Holding the Feed Button while resetting the printer prints out the Configuration Menu.</p>	
<b>Printer Status Indicator</b>		
LED Indicator	Tri-color: Green, Amber, Red	
Ready	Solid Green	
Paper Low	Flashing Green	
Paper Empty	Flashing Amber	
Error or Warning	Flashing Amber or Red	
Power	LED is on	
<b>Printer Configuration</b>		
Software Utility	NCR Configuration Utility Tools	
Offline	Diagnostic Menu	
<b>Fonts, Graphics, Symbologies</b>		
Font	<ul style="list-style-type: none"> <li>• Font A: 13 x 24</li> <li>• Font B: 10 x 24</li> <li>• Kanji Font A: 24 x 24; 12 x 24</li> <li>• Kanji Font B: 20 x 24; 10 x 24</li> </ul>	

Parameter	NCR 7199 Series i	NCR 7199 Series ii
Characters Sets	<ul style="list-style-type: none"> <li>• 95 Alphanumeric</li> <li>• SBCS: CP437, CP850, CP852, CP858, CP860, CP862, CP863, CP864, CP865, CP866, CP874, CP928, CP737, CP1252, CP1256, Katakana, Hungary, Romania, CP855, CP1250, CP1251</li> <li>• DBCS: 932 (Japanese), 936 (Simplified Chinese), 949 (Korean), 950 (Traditional Chinese)</li> <li>• Unicode support (UTF-16)</li> </ul>	<ul style="list-style-type: none"> <li>• 95 Alphanumeric</li> <li>• SBCS: CP437, CP850, CP852, CP858, CP860, CP862, CP863, CP864, CP865, CP866, CP874, CP928, CP737, CP1252, CP1256, Katakana, Hungary, Romania, CP855, CP1250, CP1251, CP1254, CP1255</li> <li>• DBCS: 932 (Japanese), 936 (Simplified Chinese), 949 (Extended Korean), 950 (Traditional Chinese + Hong Kong Supplementary Character Set [HKSCS])</li> <li>• Unicode support (UTF-16)</li> </ul>
Barcode	GS1 DataBar (Omnidirectional, Truncated, Limited, Expanded, Stacked), UPC-A, UPC-E, JAN-13 (EAN), JAN-8 (EAN), Code 39, Code 128, Interleaved 2 of 5, Codabar, Code 93, PDF 417, QR Code	GS1 DataBar (Omnidirectional, Truncated, Limited, Expanded, Stacked), UPC-A, UPC-E, JAN-13 (EAN), JAN-8 (EAN), Code 39, Code 128, Interleaved 2 of 5, Codabar, Code 93, PDF 417, QR Code, Datamatrix, Maxicode, Aztec Code, Composite Symbology
<b>Environmental Requirements</b>		
Operating	5 to 50°C (41 to 122°F), 5% to 90%	
Storage	-10 to 55°C (14 to 131°F), 10% to 90%	
<b>Power Requirements</b>		
Input Power	24VDC +/-5%, 2.3 A or 3.125 A	24VDC +/-5%, 2.5 A
Power Supply	Supports 75W and 60W power supply	Supports 60W power supply

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Parameter	NCR 7199 Series i	NCR 7199 Series ii
<b>Mechanical Features</b>		
Mounting	<ul style="list-style-type: none"> <li>• Horizontal desk mount</li> <li>• Vertical desk mount</li> <li>• Vertical wall mount (without kit)</li> </ul>	
Cover lock to prevent accidental opening when paper is pulled	No	Optional
Tear Bar	Front	Front and Back
Easy Cutter Jam Clearance	Yes (not required to turn the knob)	
Sensors	<ul style="list-style-type: none"> <li>• Paper low, paper out, cover open, and jam detection</li> <li>• Thermal print head failure detection</li> <li>• Knife jam detection</li> </ul>	
<b>Paper Settings</b>		
Backfeed for Paper Saving	No <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <b>Note</b>            The Top Margin is 12 mm.         </div>	Yes <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <b>Note</b>            The Top Margin is 4 to 12 mm.         </div>
Paper near end setting for printer orientation	Yes, by changing the sensor setting.	Not required
Paper Parameter (Optimized setting for paper type)	No	Yes (Predefined and User-defined)
<b>Driver and Utility</b>	OPOS, JavaPOS™ for Windows and Linux and Windows Printer API, Virtual COM USB, PrintAssistant, 71xx Printer Diagnostics, Lean Receipt, Smart Maintenance Utility	

Parameter	NCR 7199 Series i	NCR 7199 Series ii
<b>Emulation</b>	Yes (TM-T88V)	Yes (TM-T88VII)  New commands: <ul style="list-style-type: none"> <li>• Specify Batch Print</li> <li>• Specify the process ID response</li> <li>• Draw line</li> <li>• Draw rectangle</li> <li>• Select UTF-8 encoding</li> <li>• Set print position to the beginning of the print line</li> <li>• Enable/Disable extended ASB</li> <li>• 2D code - Aztec Code</li> <li>• 2D code - Maxicode</li> <li>• 2D code - Composite Symbology</li> <li>• 2D code - Datamatrix</li> <li>• Real-time retrieve sensor value</li> <li>• Paper Type setting</li> <li>• Buffered Printing</li> <li>• Top margin by backfeed</li> <li>• Legacy LF + CR</li> </ul>

# Features and Options

The NCR 7199 Series Thermal Receipt Station Printer comes with the proven features and functionality of the NCR 7197 along with several new features and options that enhance the printer's performance, serviceability, reliability, and versatility.

## Receipt station

- Thermal printing
- Resident bar codes
  - For Series i and Series ii
    - Code 39
    - Code 93
    - Code 128
    - UPC–A
    - UPC–E
    - JAN–8 (EAN–8)
    - JAN–13 (EAN–13)
    - Interleaved 2 of 5
    - Codabar
    - PDF417
    - GS1 DataBar
    - QR
  - For Series ii only
    - Datamatrix
    - Composite Symbology
    - Aztec
    - Maxicode
- Drop–in paper loading

- Paper Jam Sensor (detecting initial jam of paper at platen roller)
- Paper exhaust indicator
- Support Vertical/ Wall mount (90 Deg)
- Paper low sensing: adjustable through firmware for 40ft, 30ft, 20ft, and 10ft
- Resident character language Code Pages
  - For Series i and Series ii
    - PC Code Page 437 (US English)
    - PC Code Page 737 (DOS Greek)
    - PC Code Page 850 (Multilingual)
    - PC Code Page 852 (Slavic)
    - PC Code Page 855 (IBM Cyrillic)
    - PC Code Page 858 (with Euro symbol)
    - PC Code Page 860 (DOS Portuguese)
    - PC Code Page 862 (Hebrew)
    - PC Code Page 863 (French Canadian)
    - PC Code Page 864 (Arabic)
    - PC Code Page 865 (Nordic)
    - PC Code Page 866 (Cyrillic)
    - PC Code Page 874 (Enhanced Thai)
    - PC Code Page 932 (Windows–31)
    - PC Code Page 936 (Simplified Chinese)
    - PC Code Page 949 (Korean)
    - PC Code Page 950 (Traditional Chinese)
    - PC Code Page 1250 (Windows Eastern European)
    - PC Code Page 1251 (Windows Cyrillic)
    - PC Code Page 1252 (Windows Latin #1)
    - PC Code Page 1256 (Arabic) – Contextual
    - PC Code Page 1256 (Arabic) – Fixed

- PC Code Page Hungary
  - PC Code Page Katakana
  - PC Code Page Romania
  - Unicode support (UTF–16)
- For Series ii only
  - PC Code Page 1254 (Windows Turkish)
  - PC Code Page 1255 (Windows Hebrew)
  - PC Code Page 950 (HKSCS)
- Auto knife cut
- Cover open sensors
- Industry standard USB communication interface
- Variant of Print Mode: High speed print mode, High quality print mode and Eco print mode
- Thermal Head Failure Detection
- One cash drawer connector (supports 2 cash drawers)
- Top and front exit receipt
- Multi–color LED
- Watermark and grayscale support



**Note**

The NCR 7199 Series Thermal Receipt Station Printer does not use a paper journal.

# Thermal print head

The NCR 7199 Series Thermal Receipt Station Printer uses a thermal print head for printing receipts. It is extremely fast and quiet. Because it uses heat to print directly on paper, there is no cassette or ribbon to change, eliminating soiled fingers and paper dust.

The print head does not need to be regularly cleaned and no regularly scheduled maintenance is required if the recommended paper is used. For more information, refer to ["Ordering Paper and Supplies"](#) on the next page.

If you notice spotty or light print, the thermal head could be dirty. Wipe the head with cotton swabs and rubbing alcohol. If spotty or light printing problems persist after the thermal print head has been cleaned, the print head could be damaged beyond repair.

The print head is designed to have a long life span, but it can be replaced overtime if needed. Only a trained service representative may replace the print head.

# Ordering Paper and Supplies

## Selecting thermal receipt paper

NCR products are designed for the global market and are tested to determine performance parameters, such as thermal head and cutter life expectancy, against defined mill grade papers at the time of release. NCR printers require qualified thermal paper to ensure proper printer operation. This section provides guidelines in selecting a thermal receipt paper for NCR printers.

The paper rolls must meet the guidelines provided in this section, and the paper must not be attached at the core to avoid damaging the printer when the paper is exhausted.

### Important

NCR does not test individual suppliers' papers. It is the responsibility of users of the printers to ensure that the paper they intend to use does not have a detrimental effect on the life of the printers. Use of such paper invalidates any warranty related to the performance of the printer.

The following table covers key considerations (but not necessarily all) for purchasing papers.

Requirement	Specification
Quality Control	The supplier must have processes and procedures in place to ensure that a consistent quality is always maintained. These processes and procedures should have mechanisms to stop and recall paper that is out of the agreed specification.
Pre-Printed Receipt paper	The addition of pre-printed artwork on either side of the paper has a potential to cause increased wear to the printer. Testing is required to determine if this has a detrimental effect. Retesting is also required if there are any changes in the paper design.
Image life	The paper is available with different life expectancy of the image. Ensure to specify a life expectancy that is suitable for the intended application.

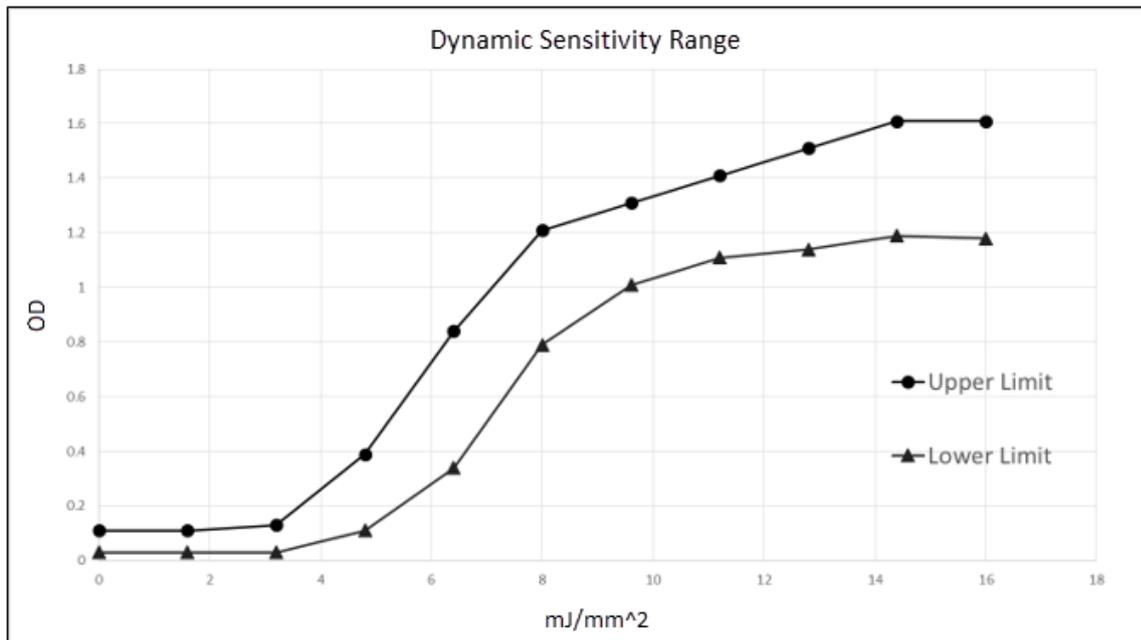
Requirement	Specification
End of Roll Indicator	<p>As well as using the “paper low” warning capability of the printer, some users define a visual indication to assist the operator in knowing when to change the roll. Typically, this can be in the form of a pre–printed line at a set length before the end of the roll. It is important that the properties of this line are not detrimental to the printer’s life expectancy.</p>
Product essential functionality and features that should be included in the customer’s specification for receipt paper	<p>The following must be observed:</p> <ul style="list-style-type: none"> <li>• The coating should not cause undue wear to the print head.</li> <li>• The surface area of the paper should be smooth.</li> <li>• All edges must be correctly cut and must be smooth.</li> <li>• There should be no mottling or foreign body contamination. There should be no dust on the surface of the paper that could cause damage to the printer or to nearby equipment.</li> <li>• There should be suitable coatings to protect the paper from UV light, water, oils, and other elements. Thermal coating residue should not transfer to the print head when heated.</li> <li>• The paper must allow for crisp lines to be produced when the paper is heated.</li> <li>• The paper should be sourced in accordance with health and safety, with environmental policies, and in adherence to any local regulations.</li> <li>• The paper should be suitably packed and protected to avoid damage during transport.</li> </ul>
Chemical in Paper	<p>The chemical elements of the paper, coating, and inks shall not exceed the following amount:</p> <ul style="list-style-type: none"> <li>• Titanium dioxide, TiO<sub>2</sub>: 0 ppm (max)</li> <li>• Silicon dioxide, SiO<sub>2</sub>: 0 ppm (max)</li> <li>• Mullite, 3Al<sub>2</sub>O<sub>3</sub>2SiO<sub>2</sub>: 0 ppm (max)</li> <li>• Sodium, Na: 1050 ppm (max)</li> <li>• Chloride, Cl: 500 ppm (max)</li> <li>• Potassium, K: 250 ppm (max)</li> <li>• Sulfate, SO<sub>4</sub>: 800 ppm (max)</li> <li>• Ammonium, NH<sub>4</sub>: 800 ppm (max)</li> </ul> <p>The chemicals listed here are not exhaustive, and other chemicals may reduce the life expectancy of the printer, the print head, or both.</p>

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Requirement	Specification
Roll Width	<ul style="list-style-type: none"> <li>• 80 mm (+0.5 / -1.2mm)</li> <li>• 58 mm (+0 / -1.0 mm)</li> </ul>
Roll Diameter	Maximum of 83 mm
Roll Length	Approximately 88 m
Core Inner Diameter	<ul style="list-style-type: none"> <li>• Series i: 8 to 15 mm, 12.7 mm (Typical). See note below this table.</li> <li>• Series ii: 8 to 21 mm, 12.7 mm (Typical). See note below this table.</li> </ul>
Core Outer Diameter	15 to 25 mm, 18 mm (Typical). See note below this table.
Core Width	Maximum of 79 mm
Core Material	Plastic or Chipboard
Paper weight	<ul style="list-style-type: none"> <li>• Series i: 44 to 70 gsm</li> <li>• Series ii: 42 to 75 gsm</li> </ul>
Paper caliper thickness	<ul style="list-style-type: none"> <li>• Series i: 44 to 70 um</li> <li>• Series ii: 48 to 82 um</li> </ul>
Paper Winding Direction	Thermal coating facing out
Smoothness	300 sec min (ISO 5627)
Dynamic sensitivity	<p>Energy to be equal to or less than 11.2 mJ/mm<sup>2</sup> at 1.1 OD</p> <p><b>Note</b> For more details, refer to the <i>Dynamic Sensitivity Range</i> graph below.</p>
Brightness	Less than 85%

 **Note**

Coreless paper is not supported due to the tendency of the paper roll to collapse and increase the load placed on the printer as it attempts to feed the oblong roll.



### **Warning**

Using an inferior grade of paper can affect the print quality, the life of printheads, and the printer mechanism.

### **Note**

Take note of the following:

- Printer reliability and performance are directly related to the quality of supplies used by the customer. The published reliability information for printer performance is established using supplies that meet NCR specifications.
- Thermal paper with watermarks, coupons, or advertisements printed on its front or back are not covered by NCR specifications. Some inks and printing processes work acceptably, but others do not.
- Printer problems that are caused by supplies that do not meet NCR specifications may result in expensive resolutions.

The following table provides information on other thermal papers tested with the NCR 7199 Series printer.

Paper Manufacturer	Media Model	Notes
Koehler	Blue4est® KT 90 FA KT 48 PF	For more information, refer to <a href="https://www.koehlerpaper.com/en/products/Thermal-paper/">https://www.koehlerpaper.com/en/products/Thermal-paper/</a>

# Other Supplies

Contact your sales representative to order the supplies listed in the following table.

Item	Type	Alias Number
External Power Supply (Series i)	75W External Power Supply, No Power Cord	7167-K510
	75W External Power Supply with US Power Cord	7167-K511
	60W External Power Supply, No Power Cord	7197-K510
External Power Supply for (Series ii)	60W External Power Supply, No Power Cord	7197-K510
AC Cables for External Power Supply	US Power Cord	1416-C325-0030
	UK Power Cord	1416-C321-0030
	SEV Power Cord	1416-C320-0030
	Australian Power Cord	1416-C322-0030
	International Power Cord	1416-C323-0030
	Argentina Power Cord	1416-C009-0018
Non-Powered RS-232 (Serial) Interface	1.0 meter	1416-C879-0010
	4.0 meters	1416-C879-0040
Non-Powered USB Cable	1.0 meter	1432-C083-0010
	4.0 meters	1432-C083-0040
Powered USB Cable	24V Powered USB Cable, 1.0 meter, Black	1432-C086-0010
	24V Powered USB Cable, 4.0 meters, Black	1432-C402-0040
Power Only USB Cable for Serial Configuration	1.0 meter	1432-C092-0010
	4.0 meters	1432-C092-0040

Item	Type	Alias Number
Cash Drawer Cable	1.8 meters	1639-K044
		1639-K043
		1639-K213
	0.6 meter (Y-Cable)	1416-C372-0006
		1639-K045
Narrow 58mm Width Paper Guide	Release 1.0	7199-K058
Ethernet Cable	8-wire	1432-C046-0030
Integrated Terminal Filler Plate	-	7607-K324
Rear Cable Cover	-	7199-K200
Under Counter Mounting Bracket	-	7199-K100
Serial Interface Module	-	7199-K001
Ethernet Interface Module (Series i)	-	7199-K002
Ethernet Interface Module (Series ii)	-	7199-K004

# What is in the Box

The following items are packed in the shipping box:

- Printer and paper starter roll enclosed in a plastic bag and foam pack

These items may be ordered as options from NCR:

- Communication cable (from host computer to printer)
- Cash drawer cables

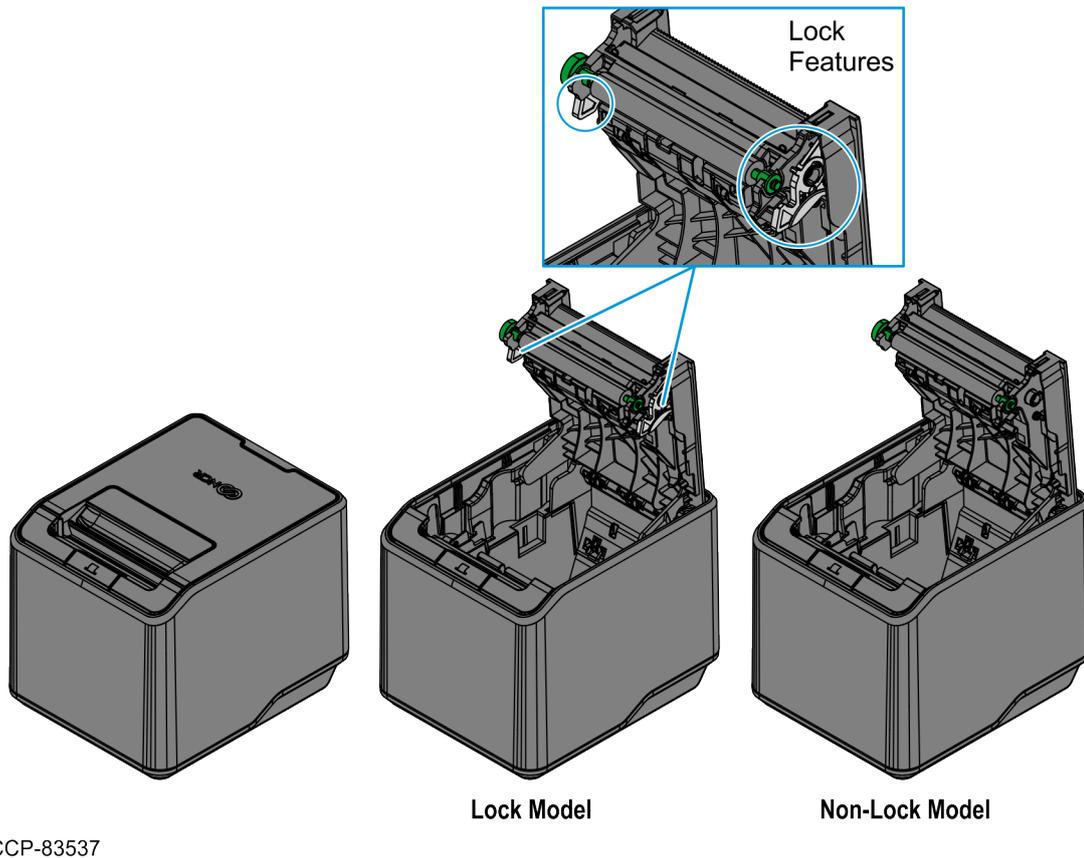
These cables may be ordered from other equipment suppliers. For more information, refer to ["Ordering Paper and Supplies"](#) on page 12.

- DC Power cable
- External Power Supply
- USB plus Power cables

# Removing the packing material

To remove the packing material, follow these steps:

1. Remove the printer from the foam pack.
2. Remove the plastic bag from the printer.
3. Save all packing materials for future storing, moving, or shipping of the printer.



# Repacking the printer

To repack the printer, follow these steps:

1. Place the printer in the plastic bag and in the foam pack.
2. Place the packed printer in the box.
3. Secure the box with packing tape.

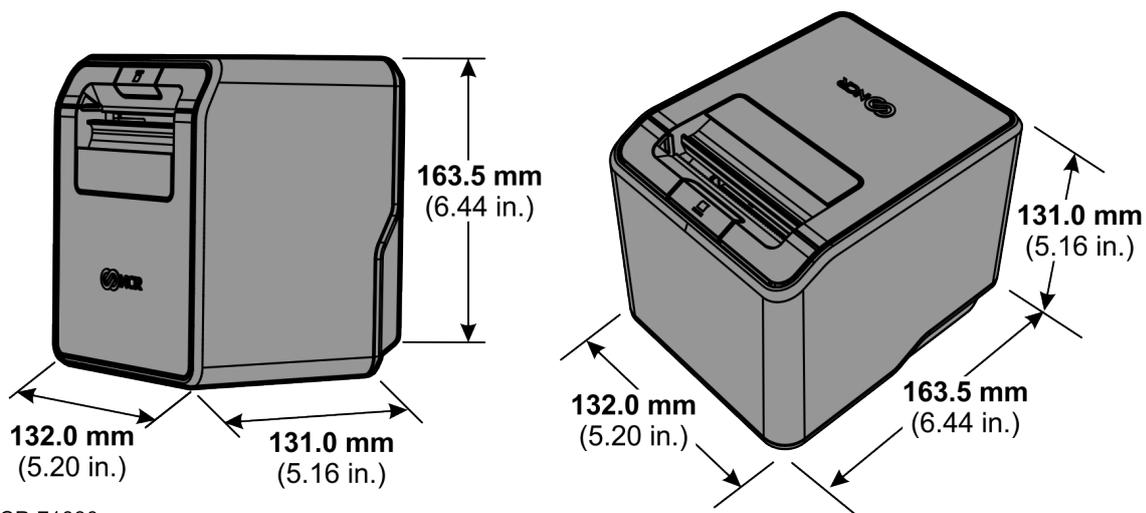
# Choosing the Mounting Configuration

## ! Important

For proper Paper Low detection, set the Receipt Direction option to match the physical orientation of the printer with either Front Exit (default) or Top Exit. If using OPOS/JavaPOS, there is a Profile setting that controls this configuration. If not using OPOS/JavaPOS, configure it at the printer firmware.

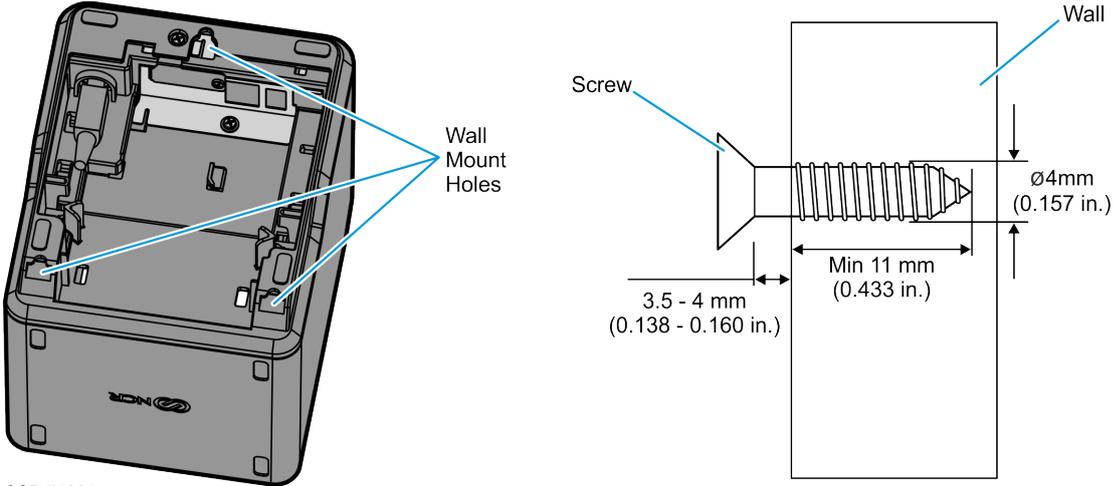
## Normal table top

The NCR 7199 Series Thermal Receipt Station Printer takes up a relatively small counter space and may be set on or near the host computer. Make sure there is enough room to open the receipt cover to change the paper. The following illustration shows the actual dimensions of the printer, but leave several inches around the printer for connecting and accessing the cables.



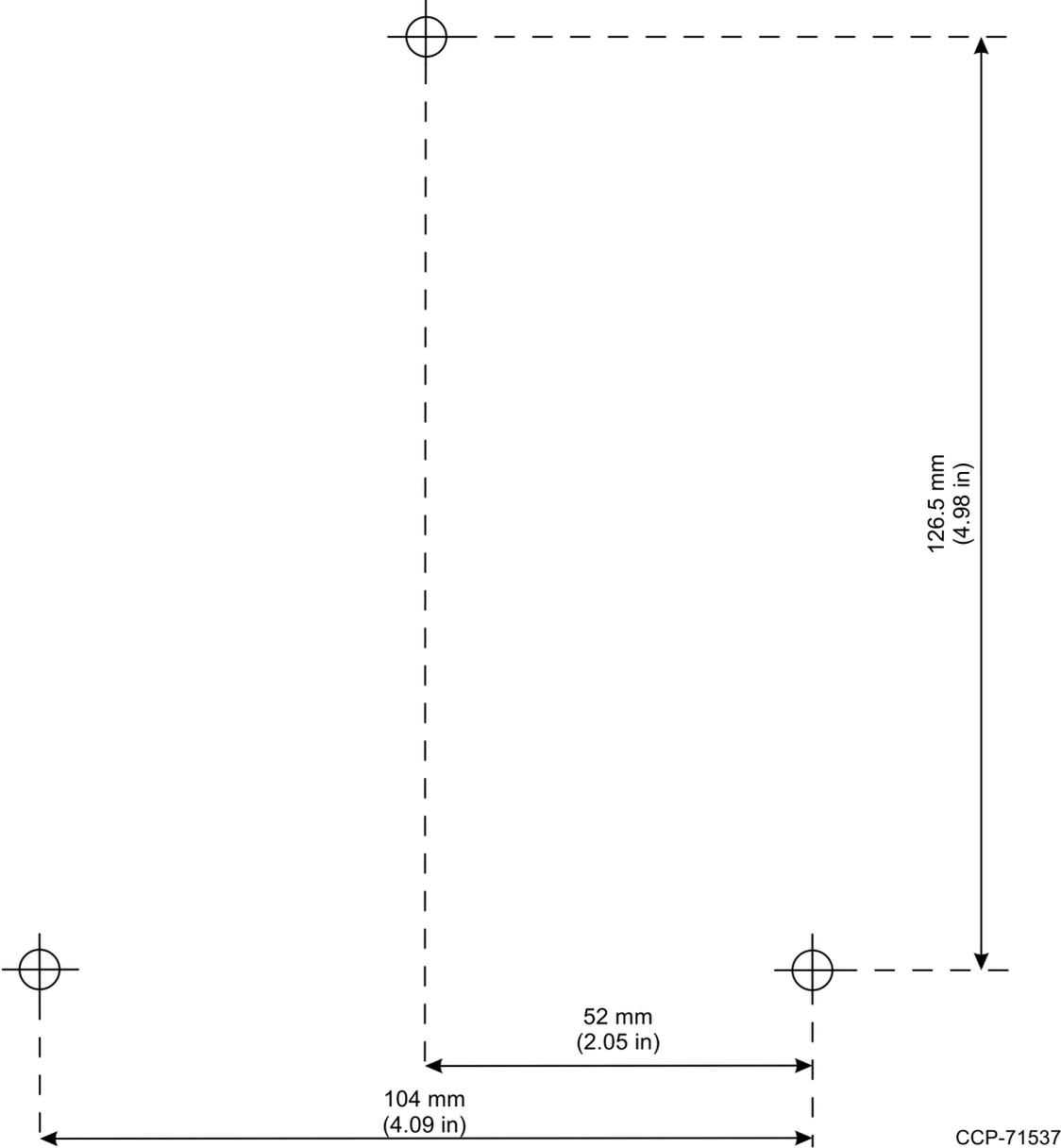
# Wall mounted

The NCR 7199 Series Thermal Receipt Station Printer may be mounted on a vertical wall. Make sure there is enough room to open the receipt cover to change the paper. Mount the screws on the wall using the following recommended mount dimensions. Use a #8 wood screw ( $\varnothing$  3.5mm flat head metallic tapping screw or equivalent), which is to be securely fastened to a wall stud, or use a "Molly" fastener (not provided).



CCP-71031

Print the following template to use as a guide for the wall screw position.



# Connecting the Cables

There are three different types of cables that connect to the printer:

- Power supply cable supplying power from the power supply
- Communication cable (USB) connecting the printer to the host computer
- Cash drawer cable connecting the printer to one or two cash drawers

## **Warning**

Do not use a cash drawer with an impedance of less than 24 ohms.

## **Caution**

Disconnect the power before connecting the cables. Always connect the communication cable and cash drawer cables before connecting power to the power supply. Always disconnect power to the power supply before disconnecting the communication and cash drawer cables.

To connect the cables, follow these steps:

## **Note**

Refer to the images in the next sections for more information.

1. Disconnect the power supply from its power source.
2. Connect the communication cable to the printer and to the host computer connector.

## **Note**

For the RS-232 communication cable, ensure to screw the cable to the connector.

## **Warning**

To avoid shorting cash drawer connector pins, be careful not to insert the USB connector into the cash drawer port. Do not connect the USB cable to the Cash Drawer connector.

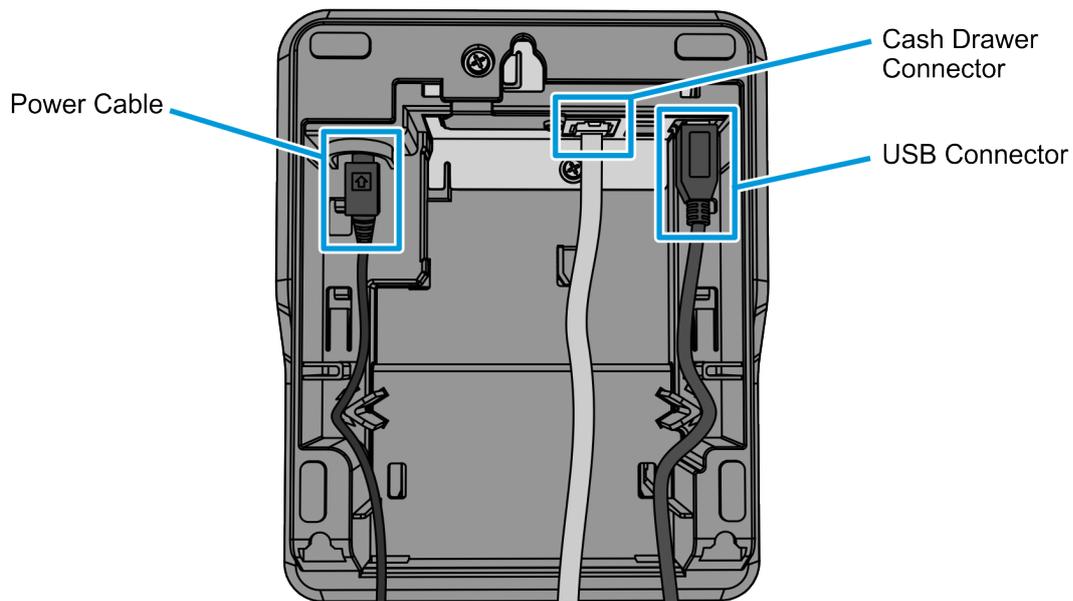
3. Connect the cash drawer cable to the printer and to the cash drawer.

 **Note**

The connector is a standard RJ12 located at the rear of the printer.

4. Connect the power cable to the printer.
5. Route the cables through the cable strain relief feature on the bottom of the printer and through the two slots in the cable access cover.
6. Reconnect the power cable to a power source.
  - For external power supply installation, connect the power cable to the power supply and connect the power supply to an AC outlet.
  - For host-powered installation, connect the power cable to the POS terminal.

# USB cable connection

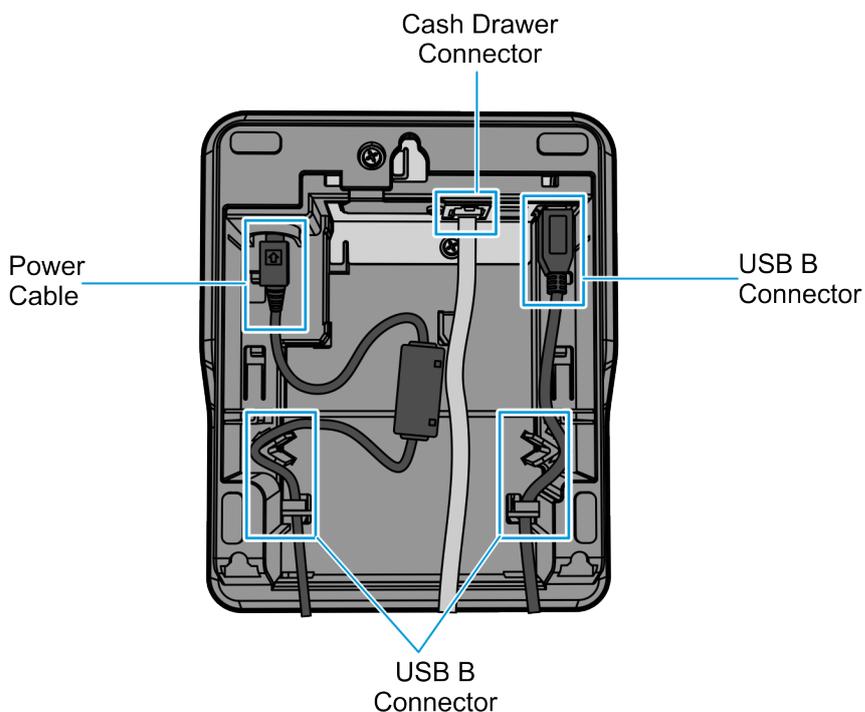


CCP-71027

**BOTTOM OF PRINTER**

## Note

If the power supply cable has a ferrite bead, follow the routing shown in the following image.



CCP-74100

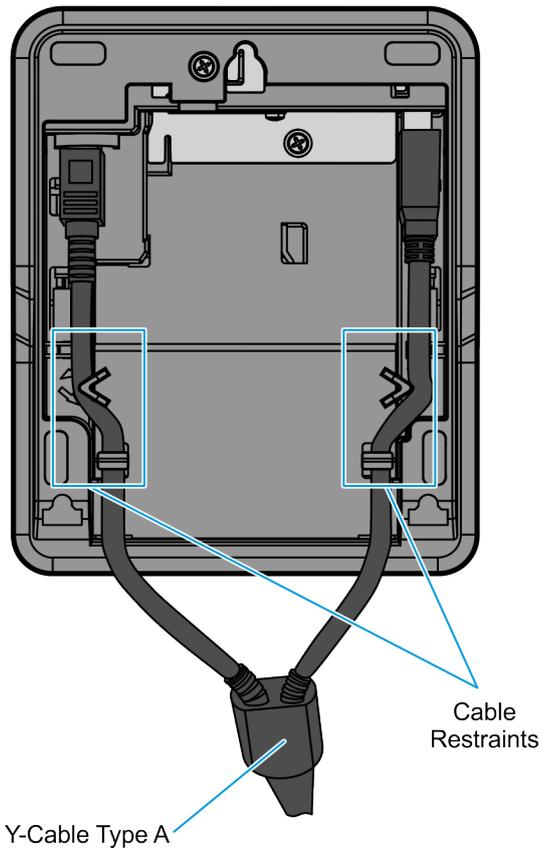
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**Warning:**  
Do not connect the USB Cable to the Cash Drawer Port. Incorrect connection may cause the fuse to blow, resulting in a damaged printer. The cash drawer connectors may also be damaged, preventing the proper function of the cash drawer.

CCP-78499

# Different types of Y-cable routing method



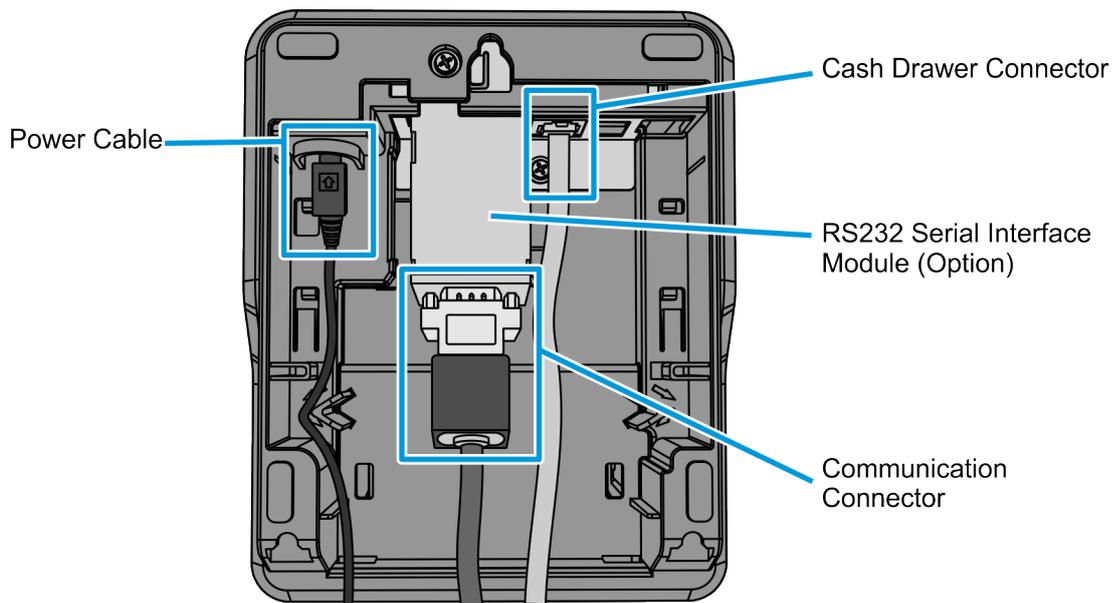
CCP-83542

## **BOTTOM OF PRINTER**

The following cable part numbers can be used for the Y-cable:

- 1432-C086-0010
- 1432-C402-0040

# RS-232 cable connection (option)

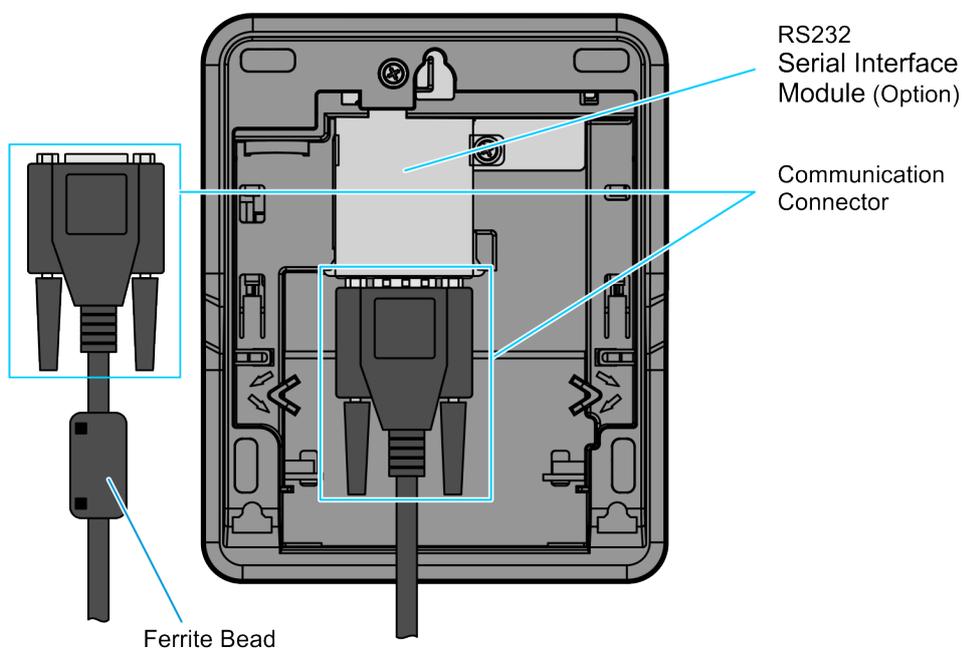


CCP-71023

## BOTTOM OF PRINTER

### Note

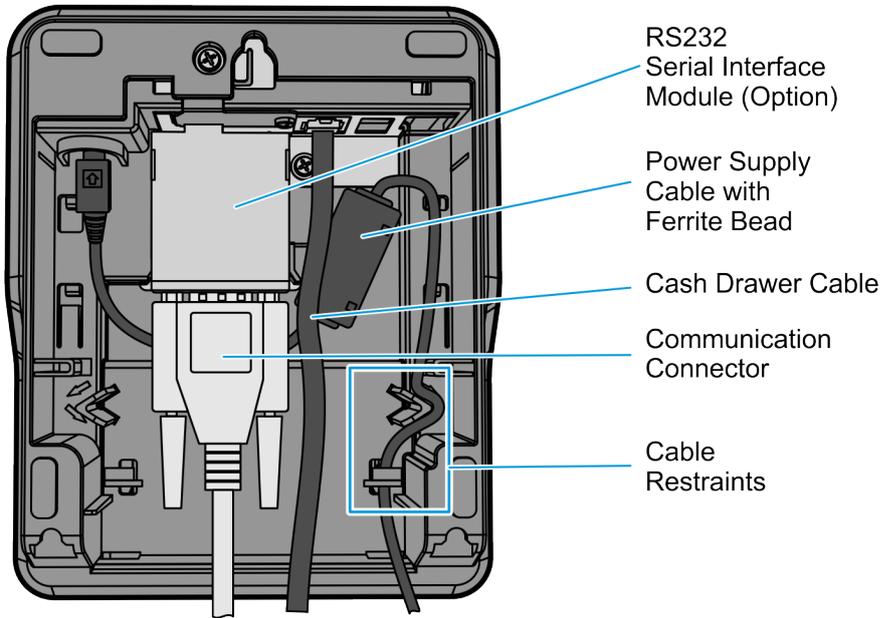
If the RS-232 serial cable has a ferrite bead on one side, connect the side without the ferrite bead to the printer.



CCP-74101

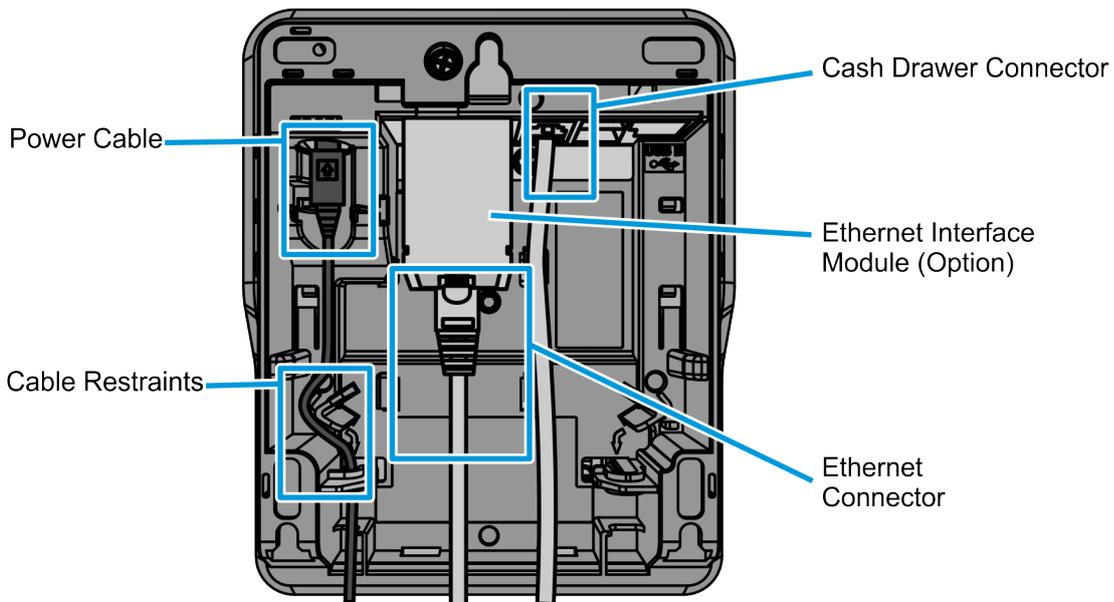
**Note**

If the power supply cable has a ferrite bead, route the cable under the communication connector and cash drawer cable, and then to the cable restraints. Do the same for the Ethernet Cable Connection.



CCP-74102

## Ethernet cable connection (option)



CCP-71028

**BOTTOM OF PRINTER**

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# Checking for USB Support on the Host Computer

USB interface communications is required and the host computer must be equipped and set up properly. With the required hardware in place, the Windows POS Ready 2009 operating system natively supports plug-and-play USB with a built-in driver.

## Note

USB drivers are only required if using Virtual COM Port (EPiC) over USB. If using NHPI, the Operating System in-box drivers for USB HID are used. For Linux, the Virtual COM Port (EPiC) is embedded in the Kernel. Some Linux distributions require additional USB HID libraries.

The USB drivers can be downloaded from the NCR Voyix website:

[https://www5.ncr.com/support/support\\_drivers\\_patches.asp](https://www5.ncr.com/support/support_drivers_patches.asp).

# Host configuration

Verify that the proper hardware has been installed in the host PC.

The following steps are applicable to systems running on a Windows POSReady 7, a Windows 8, or a Windows 10 operating system:

1. Open the Control Panel.
2. Click the Device Manager.
3. In the Device Manager window, scroll down the list of installed hardware devices until you find an entry for **Universal serial bus controller**.

If this entry exists, your host computer is set up for USB operation. If this entry does not exist, consult your computer documentation to see if USB must be enabled in the BIOS setup.

# Changing the USB Type setting

NCR 7199 printers has the following default factory settings for the USB Type:

- NCR 7199 Series i — ION(Epic) mode
- NCR 7199 Series ii — NHPI mode

## Note

NHPI is the mode recommended by NCR Voyix moving forward.

## Important

The mode selected on the printer must match the mode configured in the POS application's OPOS/JavaPOS printer profile.

To change the printer USB Type setting to match with the software interface configuration, refer to the following options:

- ["Using the Feed button operation"](#) on the next page (for Series ii only)
- ["Using Offline mode"](#) on page 36

# Using the Feed button operation

Opening the printer cover, and then continuously pressing the feed button for 5 or 15 seconds trigger the printer application to process USB Type setting change. This process repeats if the feed button is released and then pressed again while the printer cover is still open. Closing the printer cover triggers the printer application to print the diagnostic form and reboot the printer to apply the new USB Type setting.

## Note

These procedures are applicable to NCR 7199 Series ii only.

## Setting the USB type to NHPI

If the current USB Type setting is PRTR or ION(EPiC), follow these steps to change it to NHPI:

1. Open the receipt printer cover.
2. Press and hold the feed button for 5 seconds. The printer emits one beep to indicate that the setting is changed to NHPI.
3. Close the printer cover. The printer prints the configuration form.
4. Under the Hardware section of the configuration form, verify that the USB Type is successfully set to NHPI.

## Setting the USB type to ION(EPiC)

If the current USB Type setting is NHPI, follow these steps to change it to ION(EPiC):

1. Open the receipt printer cover.
2. Press and hold the feed button for 5 seconds. The printer emits two beeps to indicate that the setting is changed to ION(EPiC).
3. Close the printer cover. The printer prints the configuration form.
4. Under the Hardware section of the configuration form, verify that the USB Type is successfully set to ION(EPiC).

## Setting the USB type to PRTR

If the current USB Type setting is NHPI or ION(Epic), follow these steps to change it to PRTR:

1. Open the receipt printer cover.
2. Press and hold the feed button for 5 seconds. When the printer emits two beeps, do not release the feed button.
3. Continue to press and hold the feed button for another 10 seconds until the printer emits three beeps. This indicates that the setting is changed to PRTR.
4. Close the printer cover. The printer prints the configuration form.
5. Under the Hardware section of the configuration form, verify that the USB Type is successfully set to PRTR.

# Using Offline mode

## Note

This procedure is applicable to both NCR 7199 Series i and Series ii printers.

To change the printer USB Type setting, follow these steps:

1. Disconnect the power cable from the rear of the printer.
2. While pressing down the paper feed button, reconnect the power cable. The printer beeps and prints the Main Menu.

```
*** Offline Printer Configuration ***
```

```
This menu allows you to set general  
printer parameters by Form Feed Key. The
```

```
Short Click: It's mainly used to enter  
code of each Sub Menu. Press  
and release a key quickly
```

```
Long Press : It's mainly used to  
determine settings changed.  
Hold down a key for 1 second
```

```
***** Main Menu *****
```

```
EXIT -> No Click  
Print Printer Config -> 1 Click  
Emulation -> 2 Clicks  
Hardware -> 3 Clicks  
Reset to Default Setting -> 4 Clicks  
Printer Maintenance Info -> 5 Clicks  
Interface (Ethernet or RS232) -> 6 Clicks  
*Enter code, and hold down a Key for 1 sec
```

3. Press the paper feed button three times, and then hold the button down for at least one second to validate. The printer prints the Hardware submenu.

***For Series i:***

```

***** HARDWARE *****
USB Type          -> 1 Click
USB Speed         -> 2 Clicks
Print Mode        -> 3 Clicks
Print Density     -> 4 Clicks
Power Supply      -> 5 Clicks
Standby Mode     -> 6 Clicks
Power Off Mode    -> 7 Clicks
Knife            -> 8 Clicks
Paper Width      -> 9 Clicks
Paper Low Detection -> 10 Clicks
Color Paper      -> 11 Clicks
Buzzer Tone      -> 12 Clicks
LED              -> 13 Clicks
Receipt Direction -> 14 Clicks
BitImage Max Speed -> 15 Clicks
* Enter code, and hold down a Key for 1 sec

```

***For Series ii:***

```

***** HARDWARE *****
USB Type          -> 1 Click
USB Speed         -> 2 Clicks
Print Mode        -> 3 Clicks
Print Density     -> 4 Clicks
Power Supply      -> 5 Clicks
Standby Mode     -> 6 Clicks
Power Off Mode    -> 7 Clicks
Knife            -> 8 Clicks
Paper Width      -> 9 Clicks
Paper Low Detection -> 10 Clicks
Color Paper      -> 11 Clicks
Buzzer Tone      -> 12 Clicks
LED              -> 13 Clicks
BitImage Max Speed -> 14 Clicks
Paper Type       -> 15 Clicks
* Enter code, and hold down a Key for 1 sec

```

4. Press the paper feed button once, and then hold the button down for at least one second to validate. The printer prints the USB Type options.

**\*\* USB TYPE**

```

ION (EpiC)       -> 1 Click
NonION (NHPI)*  -> 2 Clicks
NonION (PRTR)   -> 3 Clicks
*Enter code, and hold down a Key for 1 sec

```

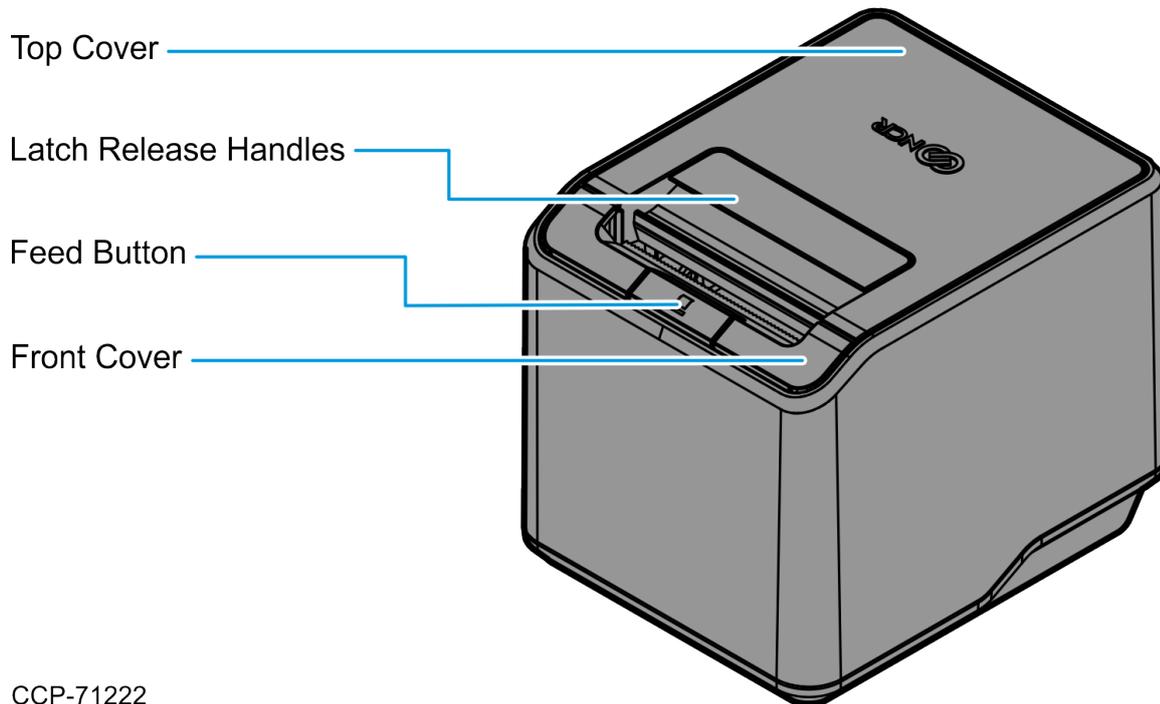
5. Press the paper feed button according to the number of clicks presented in the USB Type options, and then hold the button down for at least one second to validate. The printer prints the configuration form.
6. Under the Hardware section of the configuration form, verify that the USB Type is successfully set to the correct option.
7. Press and hold the feed button to confirm and access the offline diagnostic menu.
8. In the diagnostic menu, press and hold the feed button to exit and switch to printer online mode.

# Interface Description

## Human interfaces

- **Top Cover/Printer Door**—the printer does not print or operate if the cover is open.
- **Cover Open Latch**—the Top Cover/Printer Door can be opened by lifting the latch.
- **Paper Feed button**—located on the top–front side of the printer.
- **USB I/F Connector**—mounted on the PCB Board.
- **Printer Status LED**—has three colors: Green, Amber, and Red.
- **Thermal Paper**—placed inside the printer. For information on the recommended thermal paper, refer to the "[Ordering Paper and Supplies](#)" on page 12.

# Using the Printer



CCP-71222

## Turning on the Printer

1. Connect the power supply to the printer and turn on the power source. The printer goes through a self-test routine to ensure everything is working properly, and then it “beeps.” After the printer has completed its start-up cycle, it is ready to receive data.

### Note

If the LED blinks, or the host computer indicates that there is a problem, refer to [“Troubleshooting Printer Problems”](#) on page 47.

2. (Optional) Perform a Configuration check.
  - a. Do any of the following:
    - Reset the printer while pressing the Paper Feed button.
    - Open the receipt top cover, press and hold the Paper Feed button, and then close the top cover while pressing the Paper Feed button.
  - b. Release the Paper Feed button when printing begins.

# Turning off the Printer

The printer receives power when the power supply is on even if the printer is offline. To completely remove power, disconnect the power supply from the outlet or turn the POS terminal off.

# Loading and Changing the Receipt Printer

Change the paper when either of the following two conditions occur.

Printer LED	Definition
Green LED blinking (4 Blinks, Pause 5 seconds)	The paper is low.  There are approximately <b>4.5 ± 3 meters</b> , (15 ±10 feet) of paper remaining on the roll. Change the paper as soon as possible to avoid running out half way through a transaction. Depending on the application, the host computer may alert you when the paper is low.
Amber LED blinking (4 Blinks, Pause 5 seconds)	The paper is out.  Change the paper immediately or data may be lost.

## **Caution**

Do not operate the printer or host computer if the printer runs out of paper. The printer will not operate without paper, but it may continue to accept data from the host computer. Because the printer cannot print any transactions, the data may be lost.

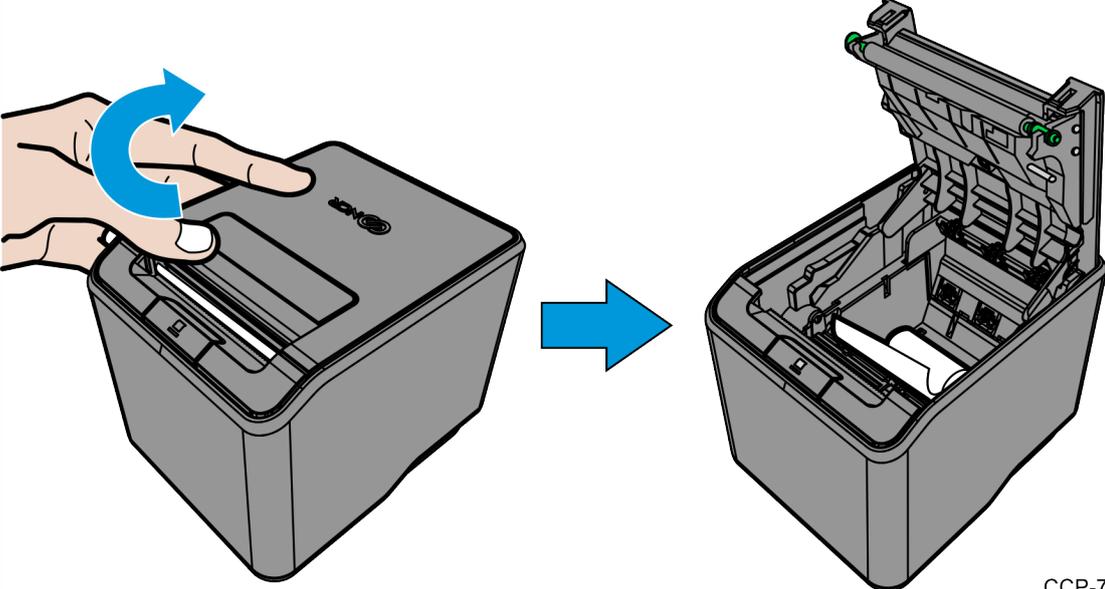
## **Important**

For proper Paper Low detection, set the Receipt Direction option to match the physical orientation of the printer with either Front Exit (default) or Top Exit. If using OPOS/JavaPOS, there is a Profile setting that controls this configuration. If not using OPOS/JavaPOS, configure it at the printer firmware.

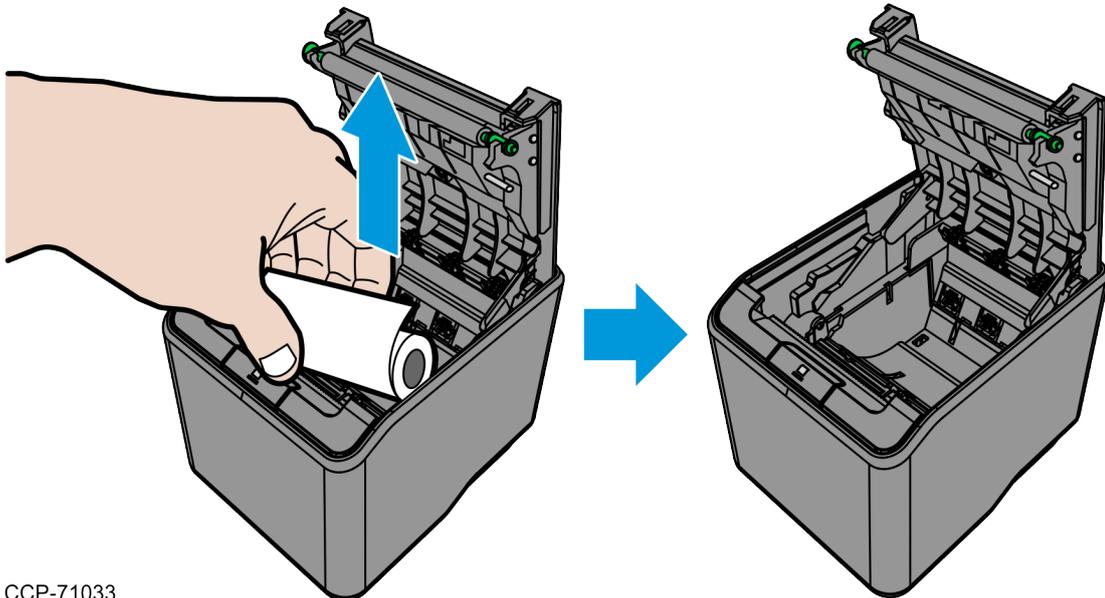
# Removing the paper roll

To remove the paper roll, follow these steps:

- 1. Open the receipt cover.



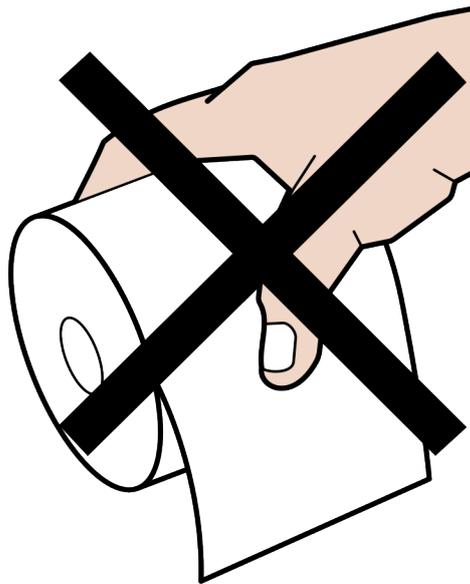
- 2. Remove the used roll.



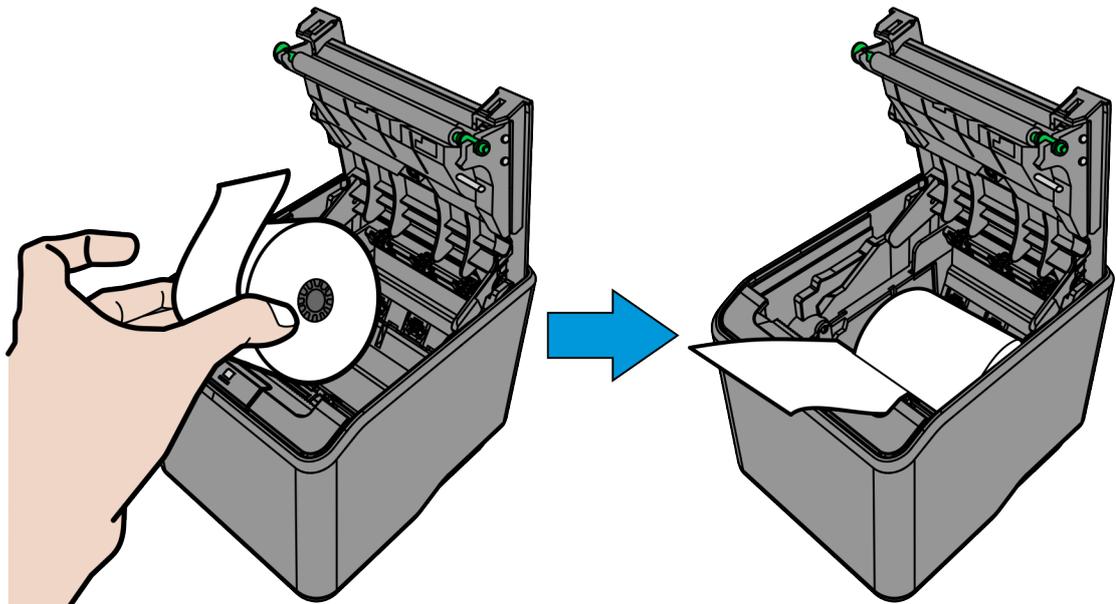
# Loading the paper roll

To load the paper roll, follow these steps:

1. Tear off the end of the new roll so that the edge is loose.
2. Place the new roll in the bin with a little extra paper extending over the front. Make sure that the paper unrolls from the bottom of the roll. Otherwise, the printer cannot print on the paper because the thermal coating is on the wrong side.

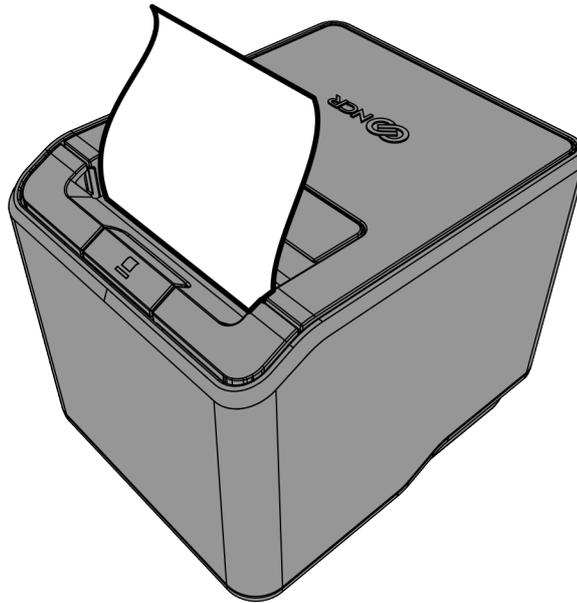


CCP-71064



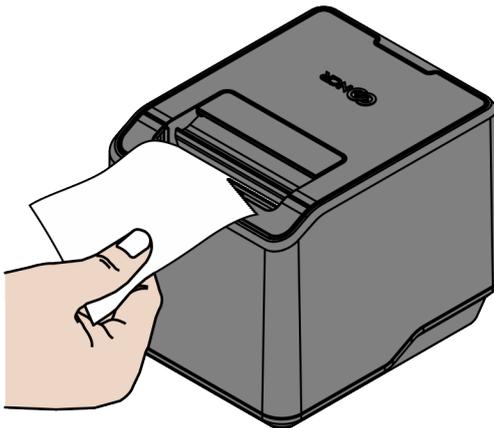
CCP-71034

3. Close the receipt cover.



CCP-71024

4. Remove the excess paper by tearing it against the tear-off blade.



Horizontal Orientation

CCP-83538



Vertical Orientation

## Advancing the paper

To advance the paper, follow these steps:

1. Press the Paper Feed button on the operator panel to advance the paper. The cover must be closed. To ensure print quality and proper alignment of the paper, advance about **30 cm** (12 inches) of paper.
2. Tear off the excess paper against the tear-off blade.

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Use and disclose solely pursuant to company instructions.

# Cleaning the Printer

## Cleaning the cabinet

The external cabinet materials and finish are durable and resistant to these items:

- Cleaning solutions
- Lubricants
- Fuels
- Cooking oils
- Ultraviolet light

The NCR 7199 Series Thermal Receipt Station Printer does not require a scheduled maintenance. Clean the cabinet as needed to remove dust and fingerprints. Use any household cleaner designed for plastics, but test it first on a small unseen area. If the receipt bucket is dirty, wipe it with a clean, damp cloth.

## Cleaning the thermal print head

### **Caution**

Do not spray or try to clean the thermal print head or the inside of the printer with any kind of cleaner as this may damage the thermal print head and electronics.

If the thermal print head appears dirty, wipe it with cotton swabs and isopropyl alcohol.

If spotty or light printing problems persist after the thermal print head has been cleaned, refer to ["Troubleshooting Printer Problems"](#) on the next page.

# Troubleshooting Printer Problems

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The NCR 7199 Series Thermal Receipt Station Printer is a simple, generally trouble-free printer, but from time to time, minor problems may occur. The multi-colored LED lights provide associates with visual feedback for error correction. For some problems, the printer communicates the information to the host computer and relies on the application to indicate what the problem is.

This section describes some problems that may be encountered while using the printer. Some can be easily fixed, while others require contacting a service representative. To contact a service representative, refer to "[Contacting a Service Representative](#)" on page 68.

# Printer Cannot Connect through USB

Cause	What to Do	Where to Go
<p>USB Type setting may be mismatched with the software interface configuration</p>	<ol style="list-style-type: none"> <li>1. Print the configuration form and check the USB Type setting under the Hardware section. <ul style="list-style-type: none"> <li>• USB Type: <b>NHPI</b> — indicates that the printer is configured for USB HID Interface.</li> <li>• USB Type: <b>EPiC</b> — indicates that the printer is configured for Virtual COM Port. To validate the assigned Port number, run <code>Edgeport.exe</code>.</li> </ul> </li> <li>2. If needed, change the USB Type setting.</li> </ol>	<p>Refer to "<a href="#">Changing the USB Type setting</a>" on page 33.</p>
<p>Virtual COM Port driver is not installed</p>	<p>Install the Virtual COM Port driver, and then verify if it was properly installed.</p>	<p>Refer to the following sections:</p> <ul style="list-style-type: none"> <li>• "<a href="#">Installing the USB Virtual COM Port Driver for printer</a>" on page 78</li> <li>• "<a href="#">Verifying the installation</a>" on page 93</li> </ul>

# LED is Off or Printer Will Not Print

Cause	What to Do	Where to Go
Cables may not be connected properly	<p>Check all cable connections. Check that the host computer and power supply are both on.</p> <p><b>Note</b> The power supply is turned on by connecting it to an outlet.</p>	Refer to " <a href="#">Connecting the Cables</a> " on page 24.
Power supply may be defective	If the power supply is connected but does not turn on, order a new power supply.	Refer to " <a href="#">Ordering Paper and Supplies</a> " on page 12.

# Green LED is Blinking

Bezel LED	Cause	What to Do	Where to Go
1 Blink, Pause 5 seconds	Warning for PCB	Contact a service representative if the warning continues.	Refer to <a href="#">"Contacting a Service Representative"</a> on page 68.
4 Blinks, Pause 5 seconds	Receipt paper is low	<p>There are about <b>4.5 ± 3 meters</b>, (15 ±10 feet) of paper left. Change the paper soon to avoid running out of paper part way through a transaction.</p> <div style="background-color: #e1f5fe; padding: 10px; border-radius: 5px;"> <p><b>Important</b> For proper Paper Low detection, set the Receipt Direction option to match the physical orientation of the printer with either Front Exit (default) or Top Exit. If using OPOS/JavaPOS, there is a Profile setting that controls this configuration. If not using OPOS/JavaPOS, configure it at the printer firmware.</p> </div>	Refer to <a href="#">"Loading and Changing the Receipt Printer"</a> on page 42.

# Green LED is On but Printer Cannot Feed Paper or Print

Bezel LED	Cause	What to Do	Where to Go
Solid	Blown Fuse	<p>Contact a service representative.</p> <div style="background-color: #e1f5fe; padding: 10px; border: 1px solid #ccc;"> <p><b>Note</b>                      When the fuse is blown, the paper does not advance when pressing the Paper Feed button and a black line appears on the paper when attempting to print. The Amber LED also starts blinking (refer to "<a href="#">Amber LED is Blinking</a>" on the next page).</p> </div>	<p>Refer to "<a href="#">Contacting a Service Representative</a>" on page 68.</p>

# Amber LED is Blinking

Bezel LED	Cause	What to Do	Where to Go
2 Blinks, Pause 5 seconds	Thermal print head temperature is too hot	<p>The print head may overheat when printing in a room where the temperature is above the recommended operating temperature or when printing high-density graphics continuously, regardless of the room temperature. In either case, the printer will shut off.</p> <ul style="list-style-type: none"> <li>• If the temperature of the print head is too hot, adjust the room temperature or move the printer to a cooler location.</li> <li>• If the print head is overheating because of printing high density graphics continuously, reduce the graphics print density.</li> </ul>	Refer to " <a href="#">Physical and Operating Environment</a> " on page 203 for the recommended temperature range for operating the printer.
		Contact a service representative if the printer continues to overheat.	Refer to " <a href="#">Contacting a Service Representative</a> " on page 68.
3 Blink, Pause 5 seconds	Receipt cover is open	Close the cover. The printer will not operate with the cover open.	
4 Blinks, Pause 5 seconds	Receipt paper is out	Change the paper now. Do not run a transaction without paper as the data may be lost.	Refer to " <a href="#">Loading and Changing the Receipt Printer</a> " on page 42.
5 Blinks, Pause 5 seconds	Paper is jammed	Open the receipt cover and clear any jammed paper. Tear off any excess paper against the tear-off blade.	Refer to " <a href="#">Loading and Changing the Receipt Printer</a> " on page 42.

Bezel LED	Cause	What to Do	Where to Go
6 Blinks, Pause 5 seconds	Cutter blade failure	Open the receipt cover and check the cutter blade. Clear any jammed paper. Tear off any excess paper against the tear-off blade.	Refer to the following: <ul style="list-style-type: none"> <li>• <a href="#">"Clearing Stuck Cutter Blade"</a> on page 56</li> <li>• <a href="#">"Stuck Cutter Blade (Top Cover Cannot be Closed)"</a> on page 61</li> </ul>
		Contact a service representative if the above action does not resolve the problem.	Refer to <a href="#">"Contacting a Service Representative"</a> on page 68.
	Blown fuse	When the fuse is blown, the paper does not advance when pressing the Paper Feed button and a black line appears on the paper when attempting to print. Contact a service representative.	Refer to <a href="#">"Contacting a Service Representative"</a> on page 68.
N/A	AC or DC supply voltage is out of range	If paper is not low and no conditions indicate that the thermal print head is too hot, then it is likely that the power supply voltage is out of range. Contact a service representative	Refer to <a href="#">"Contacting a Service Representative"</a> on page 68.

# Red LED is Blinking

Bezel LED	Cause	What to Do	Where to Go
1 Blink, Pause 5 seconds	Error in Memory	Contact a service representative.	Refer to " <a href="#">Contacting a Service Representative</a> " on page 68.
2 Blinks, Pause 5 seconds	Thermal print head temperature is abnormal	The print head temperature may not be able to reach the required range or the print head may be disconnected. Contact a service representative.	Refer to " <a href="#">Physical and Operating Environment</a> " on page 203 for the recommended temperature range for operating the printer.  Refer to " <a href="#">Contacting a Service Representative</a> " on page 68.

# Receipt Printing is Light or Spotty

Cause	What to Do	Where to Go
Thermal print head may be dirty	Open the receipt cover and clean the thermal print head with cotton swabs and isopropyl alcohol. <div style="background-color: #f8d7da; padding: 10px; margin-top: 10px;"> <p><b>Warning</b> Do not use alcohol to clean other parts of the printer. Damage will occur.</p> </div>	Refer to " <a href="#">Cleaning the Printer</a> " on page 46.
	Contact a service representative if this does not resolve the problem.	Refer to " <a href="#">Contacting a Service Representative</a> " on page 68.

## Note

The thermal print head does not normally require cleaning if the recommended paper grades are used. If a non-recommended paper has been used for an extended period of time, cleaning the print head with alcohol and cotton swabs will not be of much benefit. For information on the recommended paper, refer to "[Selecting thermal receipt paper](#)" on page 12. For information on power consumption, refer to "[Power Requirements](#)" on page 201.

# Clearing Stuck Cutter Blade

To view a tutorial video for clearing the **Stuck Cutter Blade** error, go to:

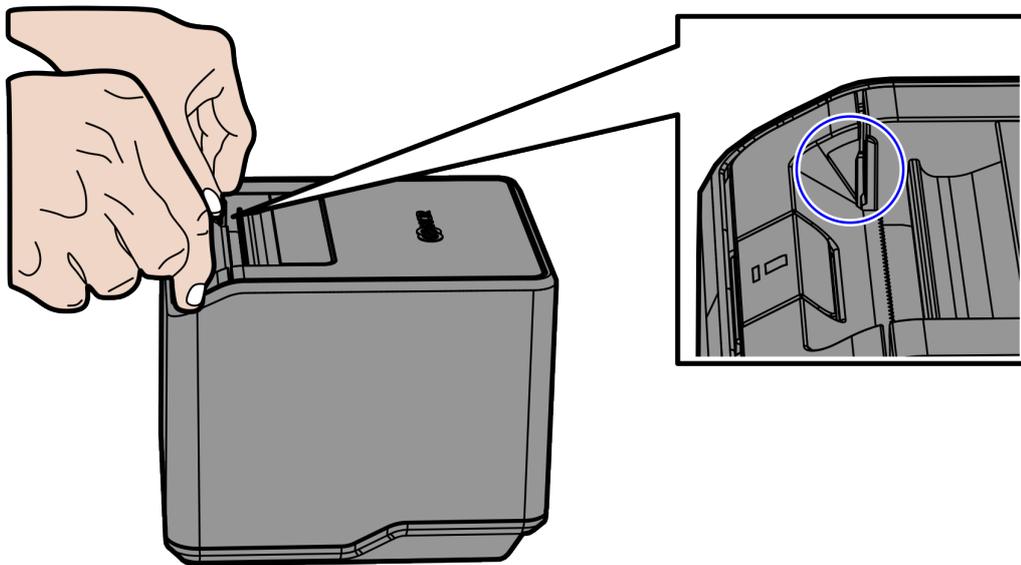
<https://onlinehelp.ncrvoyix.com/Retail/Printers/7199/HTML/Topics/Troubleshooting/StuckCutterBlade.htm>

## Note

Depending on the firmware version of the printer, leaving the printer ON while performing the steps below allows the printer to automatically retract the cutter blade after the operator closes the top cover and the front cover.

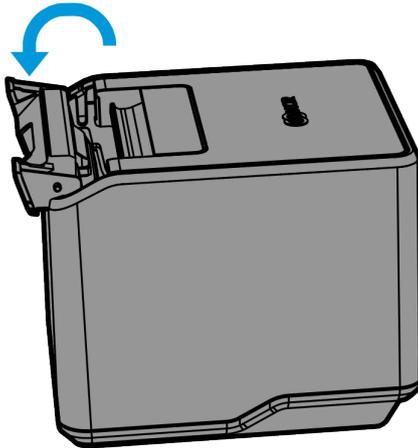
If the cutter blade is stuck in a fully extended position and the top cover cannot be opened, follow these steps to fix the issue:

1. Open the front cover.
  - a. Unlatch the front cover by pulling on the holes located on both sides of the front cover. This will take some force.



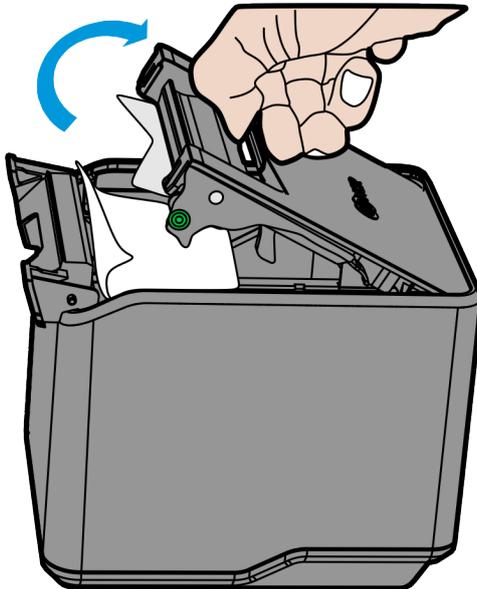
CCP-74103

b. Flip to fully open the front cover.



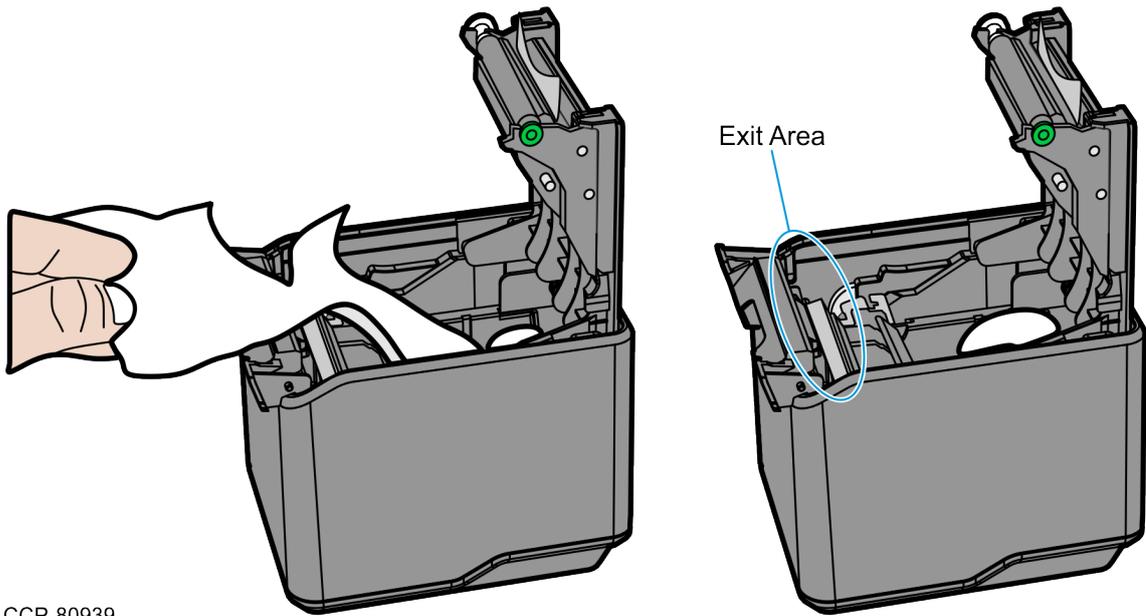
CCP-74104

2. Flip to open the top cover. The cutter blade is in the extended position.



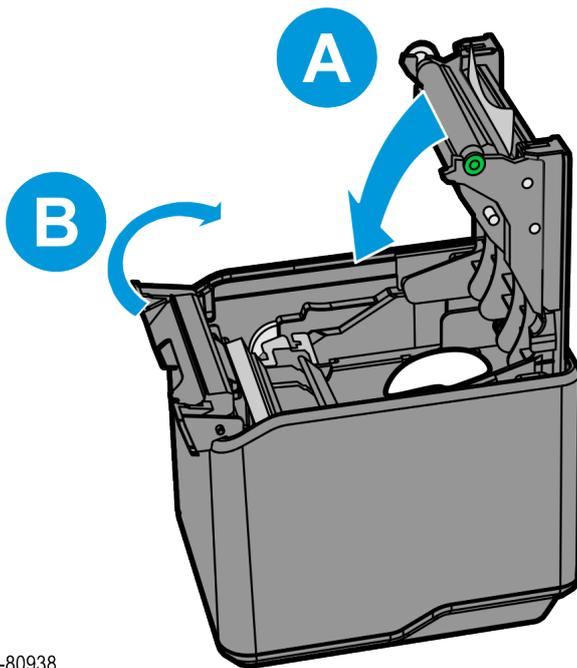
CCP-74105

3. Remove the jammed paper and ensure that there is no paper at the exit area.



CCP-80939

4. Close the top cover (A) and then the front cover (B).



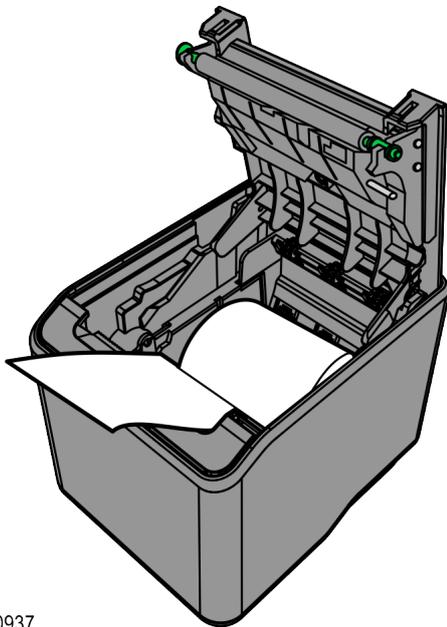
CCP-80938

- For Series i:
  - For printers with firmware version **V99.16 or higher**, when the printer detects that both covers are closed, the moving blade automatically retracts the exposed blade back to the cutter module.
  - For printers with firmware version **V99.15 or lower**, after closing the front cover, turn the printer OFF and then ON again to retract the exposed blade back to the cutter module.
- For Series ii:
  - For printers with any firmware version, when the printer detects that both covers are closed, the moving blade automatically retracts the exposed blade back to the cutter module.

 **Note**

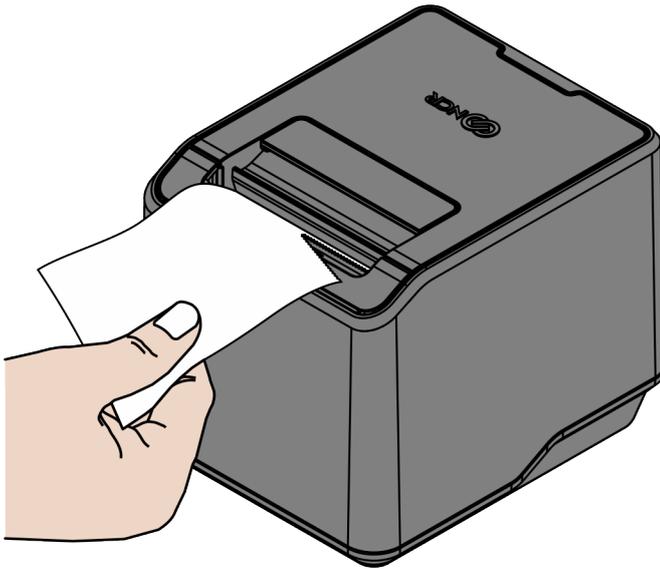
The printer does not operate if either the front cover or the top cover is not properly closed.

5. Open the top cover, pull the end of the paper out so a little extra paper is extending over the front, and then close the top cover.



CCP-80937

6. Remove the excess paper by tearing it against the tear-off blade.



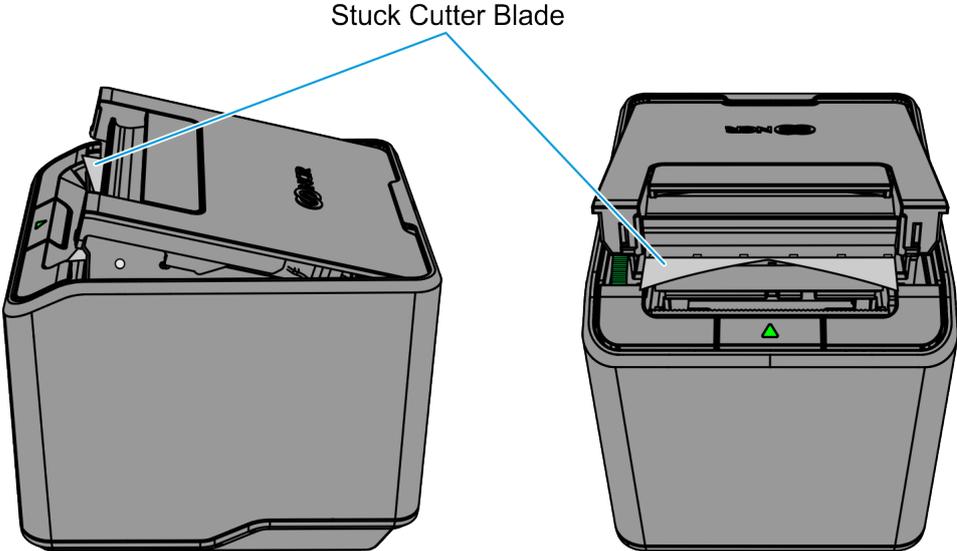
CCP-83539

7. Print a test receipt or a printer diagnostics form.
  - a. Open the top cover.
  - b. While pressing down the paper feed button, close the top cover. The printer beeps and prints the diagnostics form.

 **Note**

Paper may jam at first. In this case, clear the jam and try printing again.

# Stuck Cutter Blade (Top Cover Cannot be Closed)

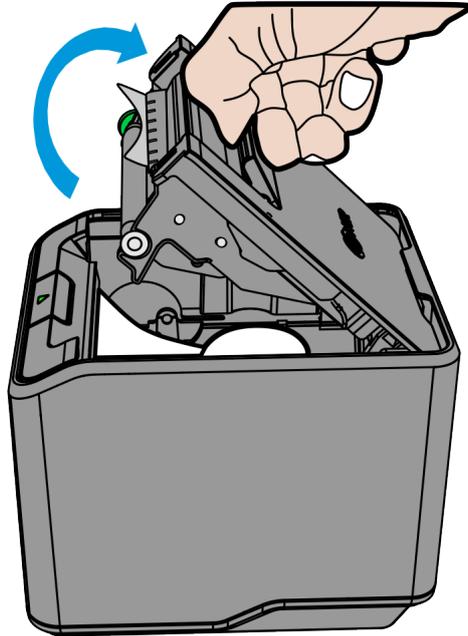


CCP-80930

**Note**  
Depending on the firmware version of the printer, leaving the printer ON while performing the steps below allows the printer to automatically retract the cutter blade after the operator closes the top cover and the front cover.

If the cutter blade is stuck in a fully extended position and the top cover cannot be closed, follow these steps to fix the issue:

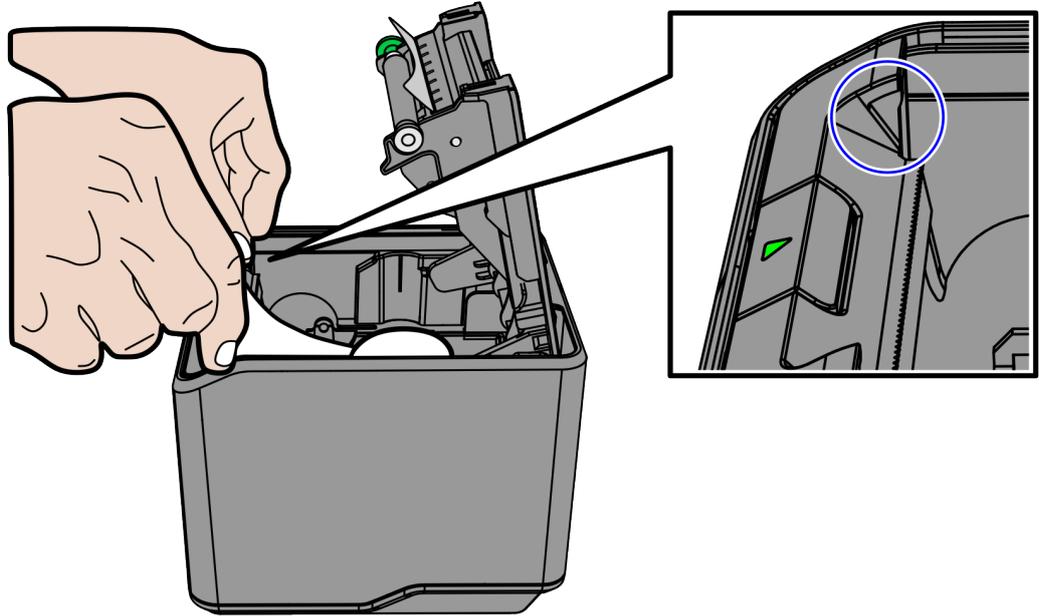
1. Flip to fully open the top cover. The cutter blade is in the extended position.



CCP-80933

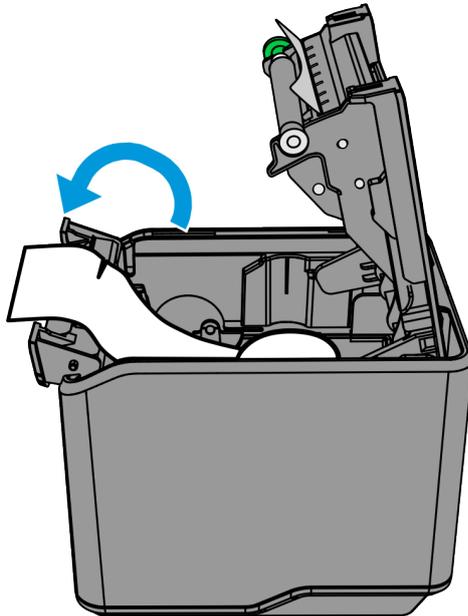
2. Open the front cover.

- a. Unlatch the front cover by pulling on the holes located on both sides of the front cover. This will take some force.



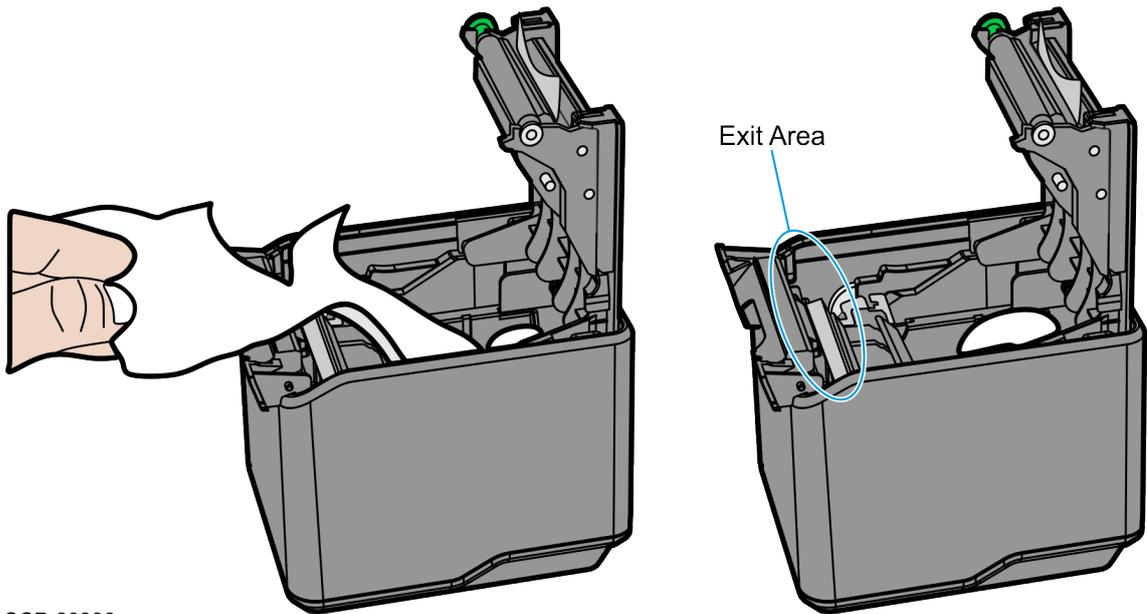
CCP-80931

- b. Flip to fully open the front cover.



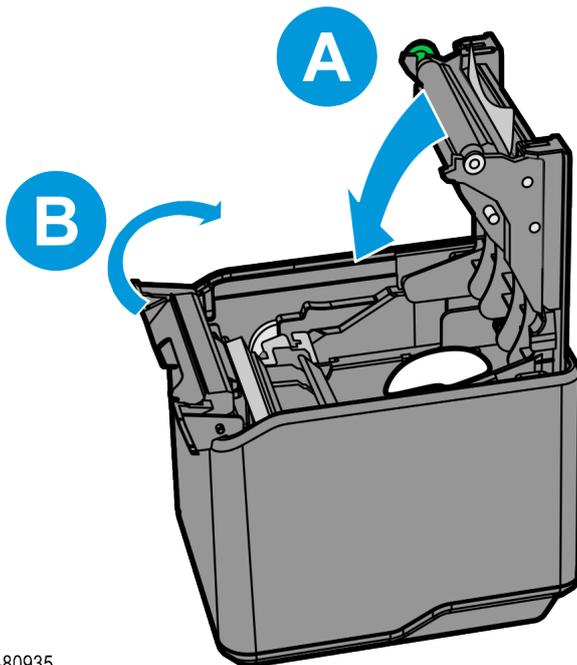
CCP-80932

3. Remove the jammed paper and ensure that there is no paper at the exit area.



CCP-80936

4. Close the top cover (A) and then the front cover (B).



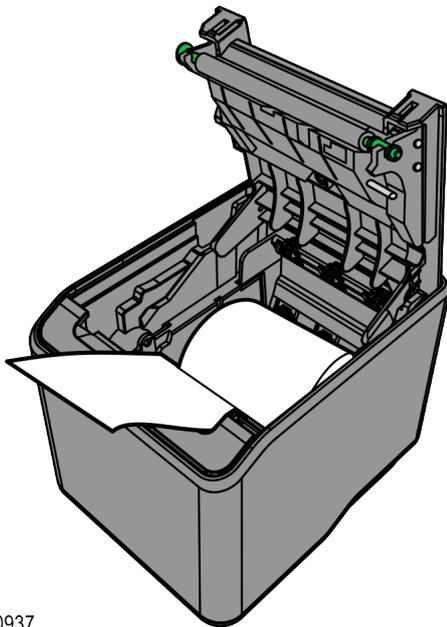
CCP-80935

- For Series i:
  - For printers with firmware version **V99.16 or higher**, when the printer detects that both covers are closed, the moving blade automatically retracts the exposed blade back to the cutter module.
  - For printers with firmware version **V99.15 or lower**, after closing the front cover, turn the printer OFF and then ON again to retract the exposed blade back to the cutter module.
- For Series ii:
  - For printers with any firmware version, when the printer detects that both covers are closed, the moving blade automatically retracts the exposed blade back to the cutter module.

 **Note**

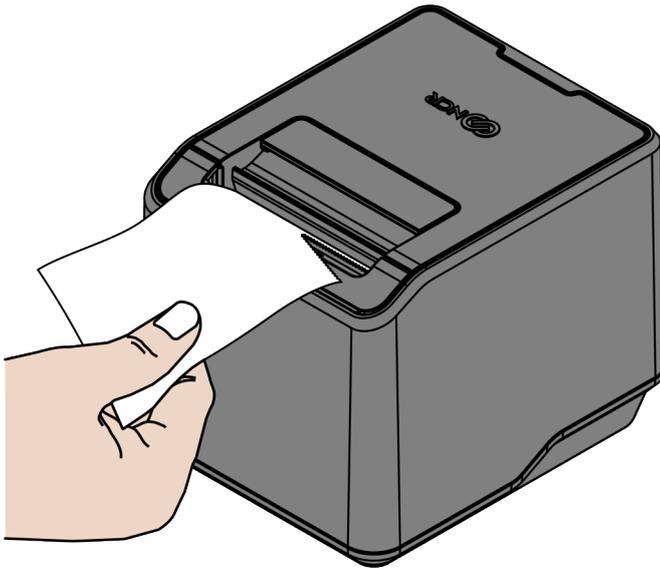
The printer does not operate if either the front cover or the top cover is not properly closed.

5. Open the top cover, pull the end of the paper out so a little extra paper is extending over the front, and then close the top cover.



CCP-80937

6. Remove the excess paper by tearing it against the tear-off blade.



CCP-83539

7. Print a test receipt or a printer diagnostics form.
  - a. Open the top cover.
  - b. While pressing down the paper feed button, close the top cover. The printer beeps and prints the diagnostics form.

 **Note**

Paper may jam at first. In this case, clear the jam and try printing again.

# Other Serious Problems

The following problems all need to be corrected by a qualified service representative. For more information, refer to "[Contacting a Service Representative](#)" on the next page.

- Printer will not cycle or stop when required
- Illegible characters
- Paper will not feed
- Knife will not cycle or cut
- Printer will not communicate with Host

# Contacting a Service Representative

For serious problems, such as the printer not printing, not communicating with the host computer, or not turning on, contact your NCR—authorized service organization to arrange for a service call. In addition to the service guide listed below, other service—related materials may be available. Contact your NCR—authorized service representative to obtain these documents.

- *NCR 7199 Series Thermal Receipt Station Printer Parts Identification Manual (BCC5-0000-5173)*
- *NCR 7199 Series Thermal Receipt Station Printer Service Guide (BCC5-0000-5174)*

# Service Level Troubleshooting

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## Diagnostics Overview

The NCR 7199 Series Thermal Receipt Station Printer performs four types of diagnostic tests to help troubleshoot problems and to change the printer configuration. Each of these is described in detail in the sections that follow.

- **Startup (Level 0) Diagnostics**—the printer performs these tests during the startup cycle. For more information, refer to "[Startup \(Level 0\) Diagnostics](#)" on the next page.
- **Printer Configuration (Level 1)**—allows configuration of the printer using a Configuration Menu that is printed on a receipt. For more information, refer to "[Printer Configuration \(Level 1\)](#)" on page 72.
- **Runtime (Level 2) Diagnostics**—the printer checks the status during normal operation. For more information, refer to "[Runtime \(Level 2\) Diagnostics](#)" on page 155.
- **Remote (Level 3) Diagnostics**—the printer keeps track of counters during normal operation.

# Startup (Level 0) Diagnostics

The printer automatically performs startup diagnostics during the startup cycle when power is supplied or when the printer goes online. Startup diagnostics comprise the following actions:

1. Power off the printer.
2. Perform CRC check of the firmware ROM, read external RAM.

 **Note**

Failure causes startup diagnostics to stop.

3. EEPROM check

 **Note**

Failure causes startup diagnostics to stop.

4. Printer Status (Amber) LED is turned on.
5. Check if paper is present.
6. Return the knife to the home position.

 **Note**

Failure causes a fault condition.

7. Check if printer Top Cover/Printer Door is closed.

 **Note**

Failure causes turning on the Printer Status (Amber) LED until the Top Cover/Printer Door is closed.

When the last step is complete, the Paper Feed button is enabled and the printer is ready for normal operation. Information about the test is available in the communication interface through the commands.

If the printer has not been turned on or a new EEPROM has been installed, the default values for the printer functions (set in Level 1 Diagnostics) are loaded into the EEPROM during startup diagnostics. For more information on the printer settings, refer to "[Printer Configuration \(Level 1\)](#)" on the next page. If the EEPROM load has failed, the Printer Status LED is turned on.

# Printer Configuration (Level 1)

Level 1 diagnostics (setup mode) provides the functionality to change the settings for various printer functions.

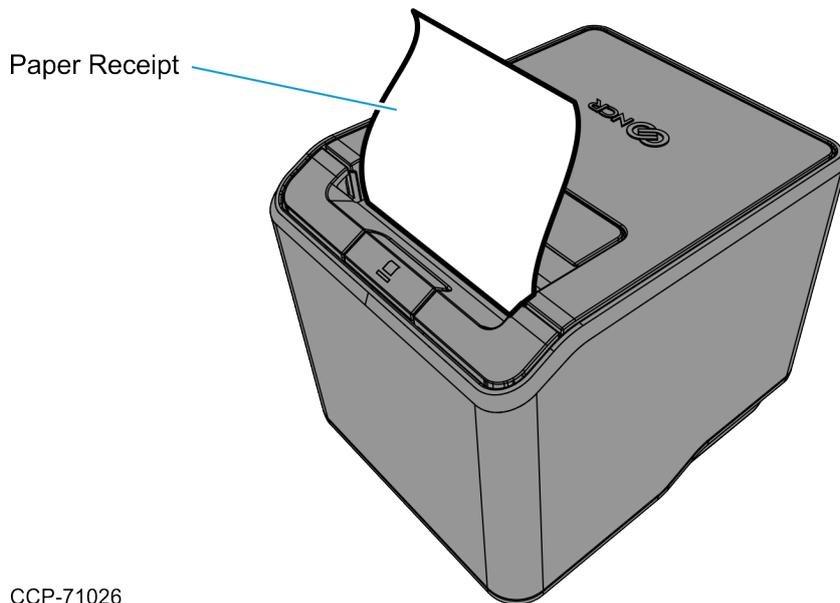
Take note of the following information when changing the settings:

- The default options are set at the factory and are stored in the history non–volatile memory.
- After the settings are changed and stored in the non–volatile memory, the diagnostic setup is exited, which saves the settings.

## **Caution**

If you are changing the printer settings, make sure to add the correct settings for that particular function or test to avoid accidentally changing the settings for another function or test. If the settings are accidentally changed, re–enter the setup mode, and then re–enter the correct settings. If you need assistance, contact a service representative. For more information, refer to "[Contacting a Service Representative](#)" on page 68.

# Configuring the Printer



Use the Configuration Menu to select functions or change various settings as indicated in the next sections. The Configuration Menu provides instructions and setting options interactively as the user goes through the configuration process.

## **⚠ Caution**

Be extremely careful in changing any of the printer settings to avoid changing settings that might affect the performance of the printer.

To reset the printer, do the following:

- While disconnecting and reconnecting the power cable, press and hold the Paper Feed button.

The printer prints a configuration menu that can be navigated with presses of the feed button.

# Software or hardware configuration

## Note

Before configuring the printer, make sure that the printer is loaded with a paper roll.

To configure the software or hardware, follow these steps:

1. To know the current settings, print the diagnostics form.
  - a. Turn on the printer.
  - b. Open the receipt cover.
  - c. While pressing down the paper feed button, close the receipt cover. The printer beeps and prints the diagnostics form.
2. Disconnect the power cable from the rear of the printer.
3. While pressing down the paper feed button, reconnect the power cable. The printer beeps and prints the Main Menu.

```
*** Offline Printer Configuration ***
```

```
This menu allows you to set general  
printer parameters by Form Feed Key. The
```

```
Short Click: It's mainly used to enter  
code of each Sub Menu. Press  
and release a key quickly
```

```
Long Press : It's mainly used to  
determine settings changed.  
Hold down a key for 1 second
```

```
***** Main Menu *****
```

```
EXIT                -> No Click  
Print Printer Config -> 1 Click  
Emulation           -> 2 Clicks  
Hardware            -> 3 Clicks  
Reset to Default Setting -> 4 Clicks  
Printer Maintenance Info -> 5 Clicks  
Interface (Ethernet or RS232) -> 6 Clicks  
*Enter code, and hold down a Key for 1 sec
```

4. Press the paper feed button according to the number of clicks presented in the main menu, and then hold the button down for at least one second to validate.

The following is an example of configuring the printer for Emulation.

This option is to set Sync Mode, LPI, Carriage, Asian Mode, Code Page, Special Font, Compress Pitch Font, 48 Character Mode, PDF417 Max Columns, Auto Reset mode, Compatible Top Margin.

To enter into emulation mode, press the Paper Feed button twice as short click and do long press until a beep sound is generated.

By following the above steps, the submenu will appear as follows:

```
***** EMULATION *****
Receipt Sync           -> 1 Click
Default LPI           -> 2 Clicks
Carriage              -> 3 Clicks
Asian Mode            -> 4 Clicks
Code Page             -> 5 Clicks
Special Font          -> 6 Clicks
Compress Pitch Font   -> 7 Clicks
48 Character Mode     -> 8 Clicks
PDF417 Max Columns    -> 9 Clicks
Auto Reset            -> 10 Clicks
Compatible Top Margin -> 11 Clicks
Emulation Mode        -> 12 Clicks
Compatible Barcode Length -> 13 Clicks
Legacy Paper Jam      -> 14 Clicks
Buffered Printing     -> 15 Clicks
Legacy LF + CR        -> 16 Clicks
*Enter code, and hold down a Key for 1 sec
```

 **Note**

Buffered Printing & Legacy LF + CR are supported in Series ii only.

Printer Configuration form indicates the printer individual information and configurations, as shown in the following examples.

**For Series i:**

```

*** Diagnostics Form ***

Model number       : 71xx-xxxx-xxxx
Serial number      : 1234567890
Boot Firmware P/N  : 497-0426492
Main Firmware P/N  : 497-0426493
Firmware Revision
  Boot Firmware    : V01.00 / 32CA
  Main Firmware    : V01.00 / A04C
  SBCS Font        : V01.00
  DBCS Font        : V01.00
  Control Table    : V01.00

Emulation          : NCR 7199
Receipt Sync.     : Disabled
Default LPI       : 7.52 LPI
Carriage          : Used as Print Cmd
Asian Mode        : Off
Code Page         : 437
Special Font      : Disabled
Compress Pitch Font : Valid
48 Character Mode : Disabled
PDF417 Max Columns : 9 Columns
Auto Reset       : 20 Sec
CompatibleTopMargin : Enabled
Compat. TM Timeout : Disabled
Compat. BarcodeLen : Disabled
USU              : Disabled
Legacy Paper Jam  : Paper Out
Logo(s) Defined   : No
User Char(s) Defined : No

Hardware
USB Type          : NonION(NHPI)
USB Speed         : Full Speed
Print Mode        : High Speed
Print Density     : 0
Power Supply      : Term Pwr-High
Standby Mode      : Enabled
PowerOff Mode     : Disabled
Knife            : Enabled
Paper Width       : 80mm
Paper Low Detection : Disabled
Color Paper       : Monochrome
Buzzer Tone       : Middle
LED              : Auto
Receipt Direction : Front Exit
Thermal head type : Type 1
BitImage Max Speed : 4 IPS
  
```

```

Interface (RS232C)
Baud Rate        : 19200
Data Bits        : 8
Stop Bits        : 1
Parity           : None
Flow Control     : DTR/DSR
Reception Errors : Print '?'
DSR Signal       : Enabled

Interface (Ethernet)
MAC address      : xx:xx:xx:xx:xx:xx
IP address       : 192.168.1.1
Subnet Mask      : 255.255.255.0
Default Gateway  : 0.0.0.0
TCP Port Number  : 9100
UDP Port Number  : 3000
RTC Protocol     : TCP
DHCP             : Enabled
DHCP request address : 192.168.2.1
TCP max. connection : 1
Physical LAN Speed : Auto
Link Down Timeout : 120 min
TCP Idle Timeout : 2 min
SNMP Trap 1     : Disabled
Trap 1 IP Address : 192.168.1.111
SNMP Trap 2     : Disabled
Trap 2 IP Address : 192.168.1.222

Sensor Level      ON  OFF TH  LED
Paper Low        : 3.3V, 0.0V, 1.7V, 0.5V
Paper Jam        : 3.2V, 0.6V, 1.4V, 0.5V

Tallies           User    Perm.
Hours ON          :      959      959
Flash cycles     :         5         5
Receipt Len.     :       482      482
Head Overheat   :         3         3
Knife Cuts       :     12768    12768
Knife Jams       :         2         2
Cover Open       :        71        71
Paper Jams       :         2         2
Sensor Calibration :         5         5

Thermal Head Usage Rate : 1 %
Dot Failure             : 0 dots
  
```

It is shown if RS232C I/F is installed.

It is shown if Ethernet card is installed.

**Note**

Take note of the following for Legacy Paper Jam:

- Paper Out option is caused by Paper Jam with Paper Exhaust.
- Knife Jam option is caused by Paper Jam with Cutter Error.
- For more information, refer to the 1F 11 command table.

**For Series ii:**

*** Diagnostics Form ***	
<b>Model number</b>	: 71xx-xxxx-xxxx
<b>Serial number</b>	: 1234567890
<b>Boot Firmware P/N</b>	: 497-0426492
<b>Main Firmware P/N</b>	: 497-0426493
<b>Firmware Revision</b>	
Boot Firmware	: V01.00 / 32CA
Main Firmware	: V01.00 / A04C
SBCS Font	: V01.00
DBCS Font	: V01.00
Control Table	: V01.00
<b>Emulation</b>	: NCR 7199
Receipt Sync.	: Disabled
Default LPI	: 7.52 LPI
Carriage	: Used as Print Cmd
Asian Mode	: Off
Code Page	: 437
Special Font	: Disabled
Compress Pitch Font	: Valid
48 Character Mode	: Disabled
PDF417 Max Columns	: 9 Columns
Auto Reset	: 20 Sec
CompatibleTopMargin	: Enabled
Compat. TM Timeout	: Disabled
Compat. BarcodeLen	: Disabled
USU	: Disabled
Legacy Paper Jam	: Paper Out <sup>1</sup>
Buffered Printing	: Disabled
Legacy LF + CR	: 1 LF
Logo(s) Defined	: No
User Char(s) Defined	: No
<b>Hardware</b>	
USB Type	: NonION(NHPI) <sup>2</sup>
USB Speed	: Full Speed
Print Mode	: High Speed
Print Density	: 0
Power Supply	: Term Pwr-High
Standby Mode	: Enabled
PowerOff Mode	: Disabled
Knife	: Enabled
Paper Width	: 80mm
Paper Low Detection	: Disabled
Color Paper	: Monochrome
Buzzer Tone	: Middle
LED	: Auto
Thermal head type	: Type 1
BitImage. Max Speed	: 16 IPS
Top Margin(Back FD)	: 12.0mm <sup>3</sup>
Max Speed	: 16 IPS
Paper Type	: Type 1

<b>Interface (RS232C)</b>	
Baud Rate	: 19200
Data Bits	: 8
Stop Bits	: 1
Parity	: None
Flow Control	: DTR/DSR
Reception Errors	: Print '?'
DSR Signal	: Enabled

It is shown if RS232C I/F is installed.

<b>Interface (Ethernet)</b>	
MAC address	: xx:xx:xx:xx:xx:xx
IP address	: 192.168.1.1
Subnet Mask	: 255.255.255.0
Default Gateway	: 0.0.0.0
TCP Port Number	: 9100
UDP Port Number	: 3000
RTC Protocol	: TCP
DHCP	: Enabled
DHCP request address	: 192.168.2.1
TCP max. connection	: 1
Physical LAN Speed	: Auto
Link Down Timeout	: 120 min
TCP Idle Timeout	: 2 min
SNMP Trap 1	: Disabled
Trap 1 IP Address	: 192.168.1.111
SNMP Trap 2	: Disabled
Trap 2 IP Address	: 192.168.1.222

It is shown if Ethernet card is installed.

<b>Sensor Level</b>	<b>ON</b>	<b>OFF</b>	<b>TH</b>	<b>LED</b>
Paper Low	: 3.3V	: 0.0V	: 1.7V	: 0.5V
Paper Jam	: 3.2V	: 0.6V	: 1.4V	: 0.5V

<b>Tallies</b>	<b>User</b>	<b>Perm.</b>
Hours ON	: 959	959
Flash cycles	: 5	5
Receipt Len.	: 482	482
Head Overheat	: 3	3
Knife Cuts	: 12768	12768
Knife Jams	: 2	2
Cover Open	: 71	71
Paper Jams	: 2	2
Sensor Calibration	: 5	5

<b>Thermal Head Usage Rate</b>	: 1 %
<b>Dot Failure</b>	: 0 dots

**To change usb type:**

1. Open printer cover
2. Press feed key for 5 seconds

# Installing the USB Virtual COM Port Driver for printer

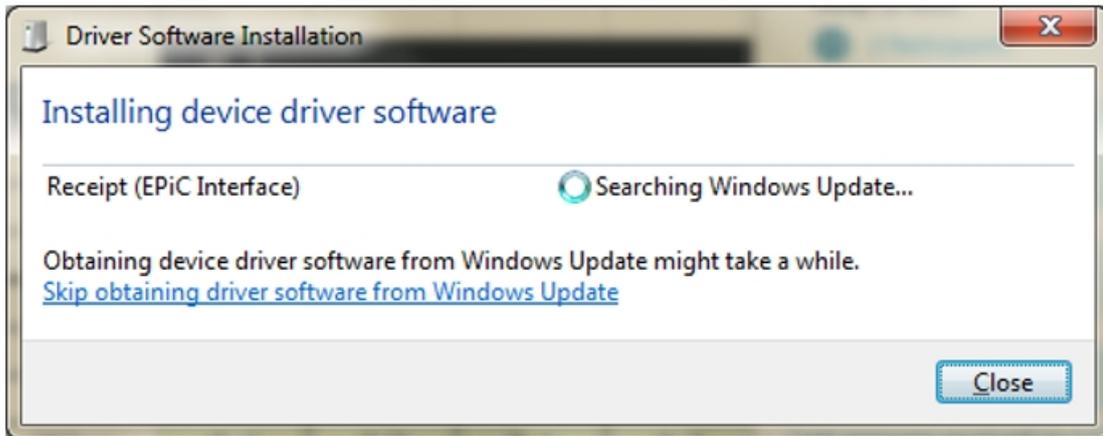
To install the USB Virtual COM Port Driver, refer to the following sections:

- ["Windows POSReady 7"](#) on the next page
- ["Windows 8"](#) on page 83
- ["Windows 10"](#) on page 88

# Windows POSReady 7

To install the USB Virtual COM Port Driver for printer on a Windows POSReady 7 system, follow these steps:

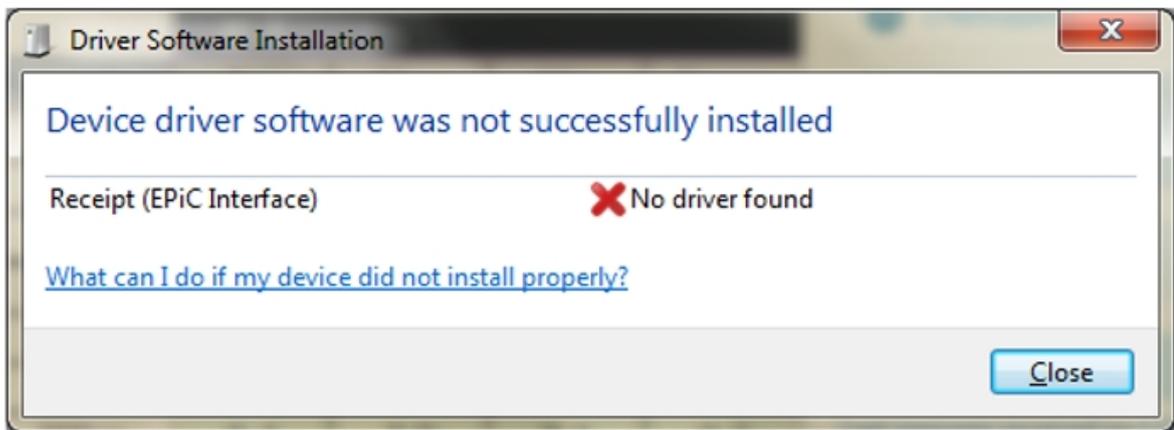
1. The printer beeps when it is plugged in to show the USB device is recognized. The Driver Software Installation window is displayed. Select **Skip obtaining driver software from Windows Update** to skip getting driver software from Window Update.



The following window is displayed.

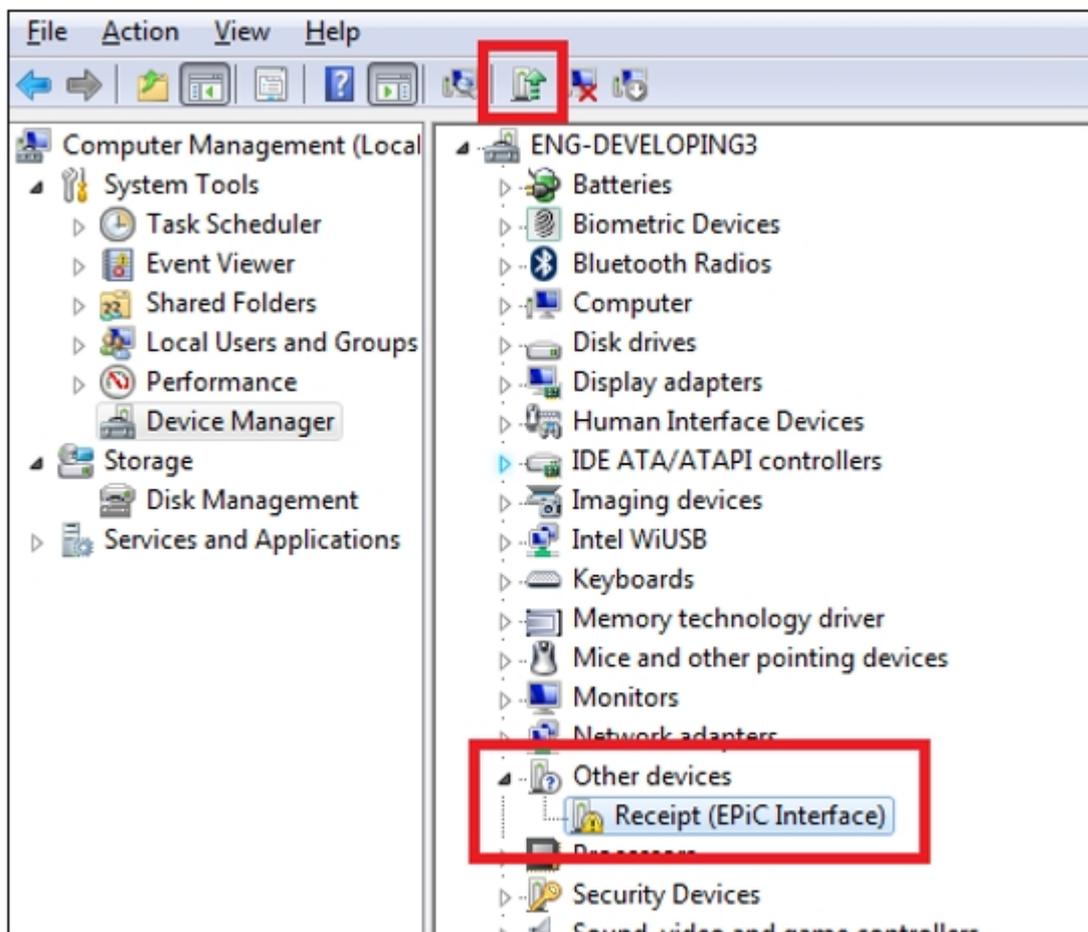


2. Select **Yes**. The following window is displayed.

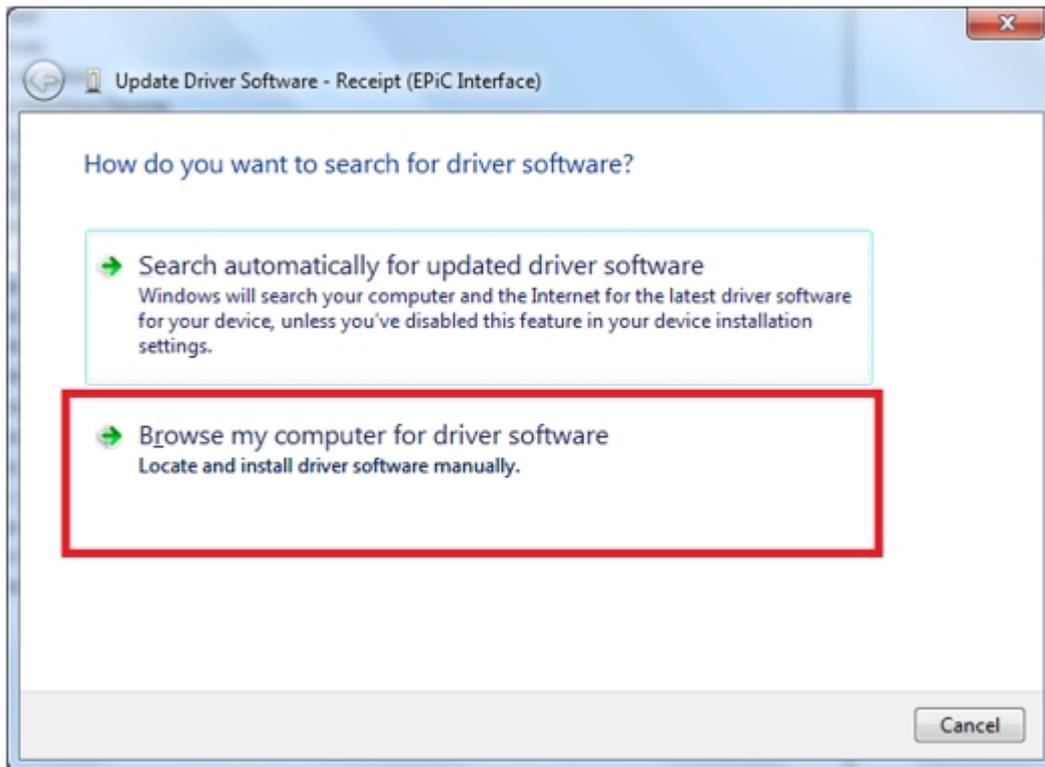


3. Open Device Manager, and then select **Receipt (EPiC Interface)**.

4. Select the **Update Driver Software** button.



5. Select **Browse my computer for driver software**.

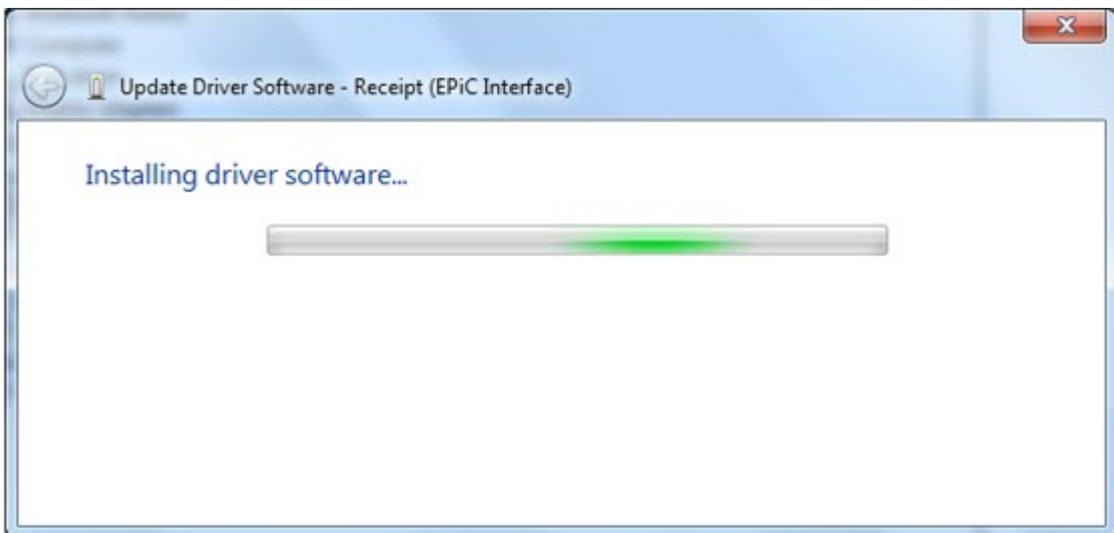


6. Select **Browse**, and then select the Edgeport Driver folder.

7. Select **Next**.



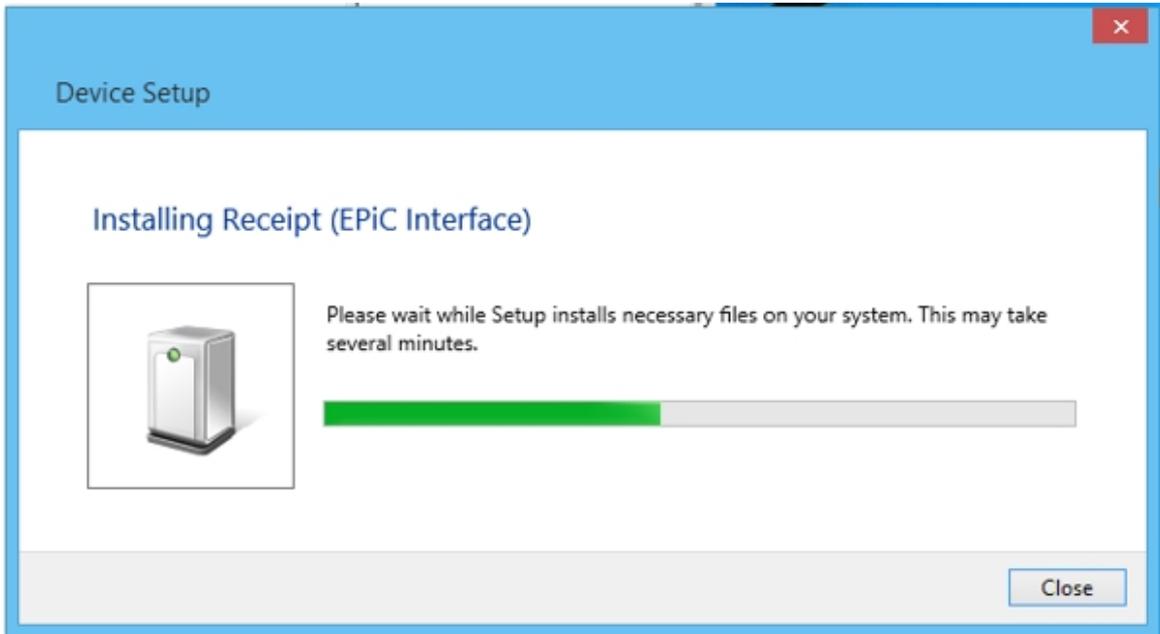
The system starts installing the printer driver.



# Windows 8

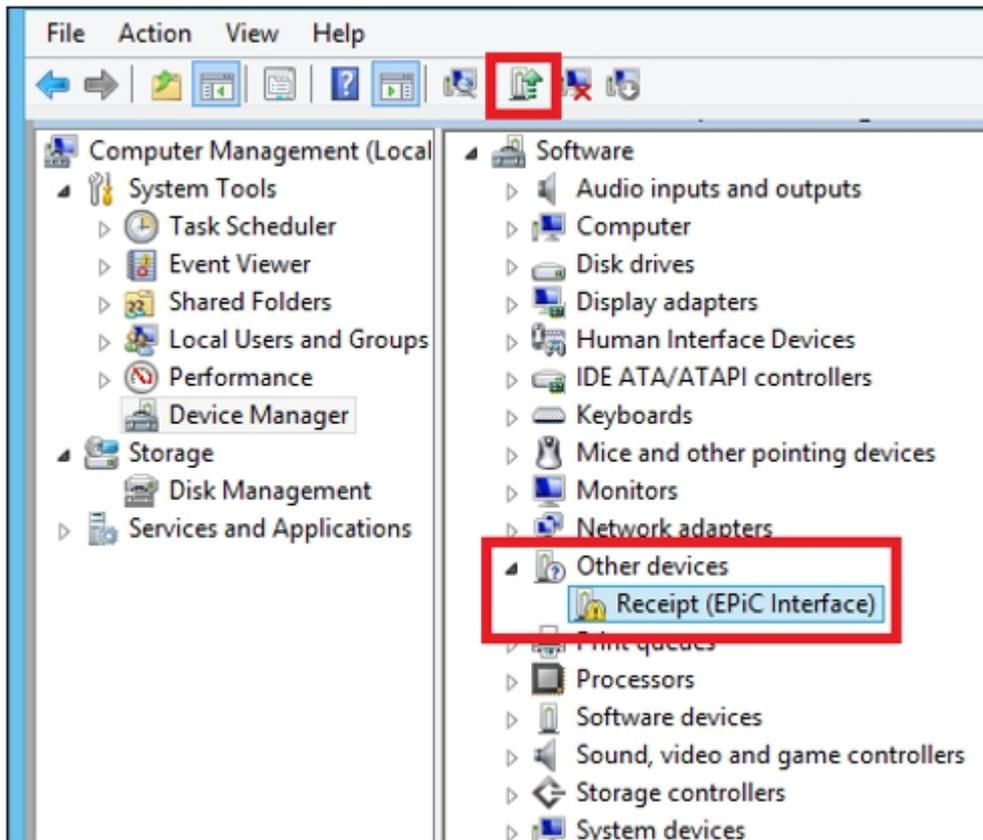
To install the USB Virtual COM port driver for printers on a Windows 8 system, follow these steps:

1. The printer beeps when it is plugged in to show the USB device is recognized. Device Setup window displays that the Installing Receipt (EPiC Interface) process is ongoing.

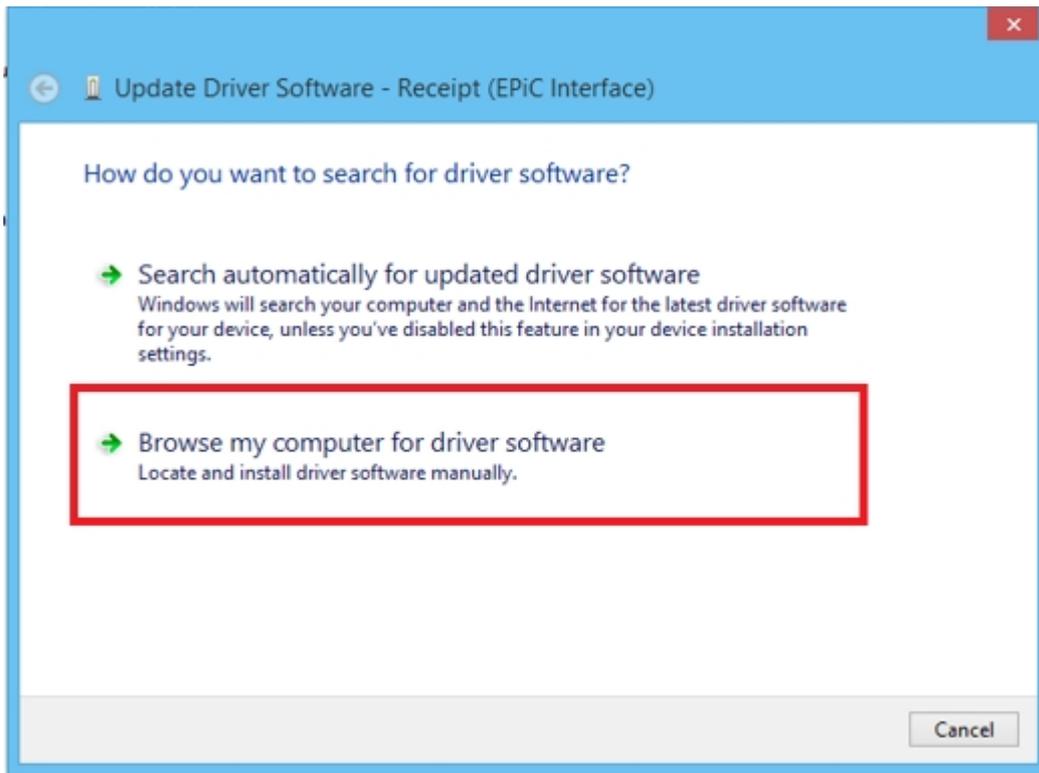


2. Open the Device Manager, and then select **Receipt (EPiC interface)**.

3. Select the **Update Driver Software** button.

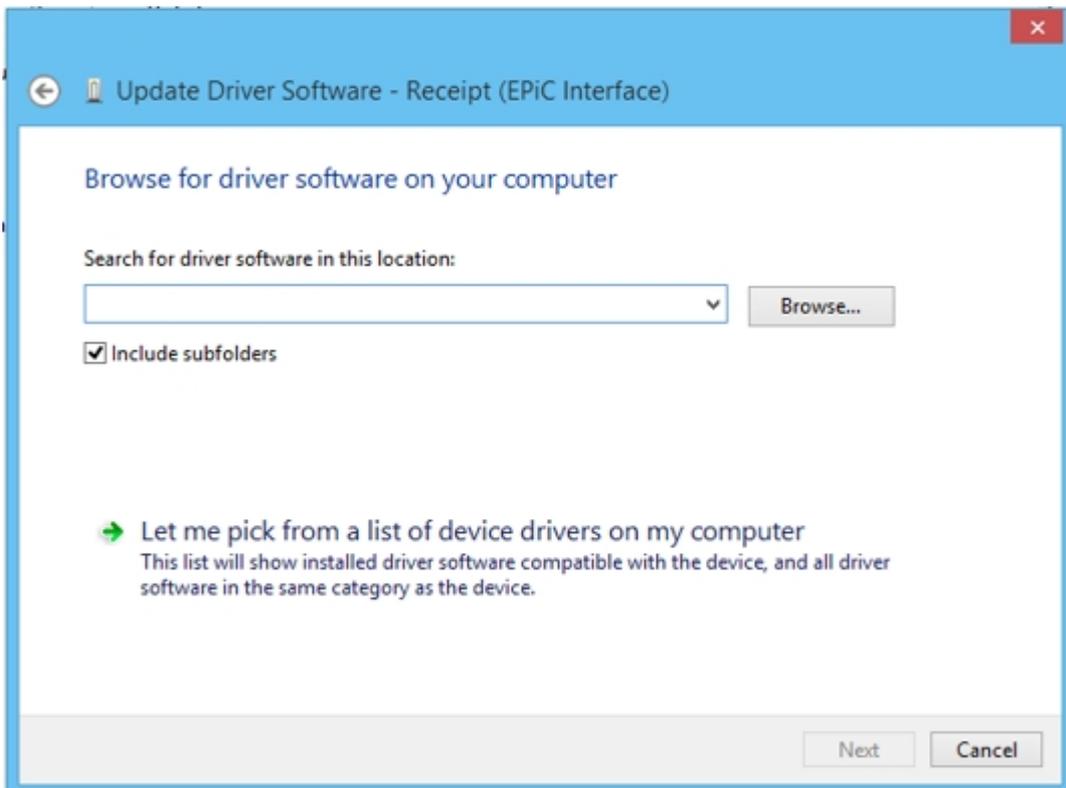


4. Select **Browse my computer for driver software**.

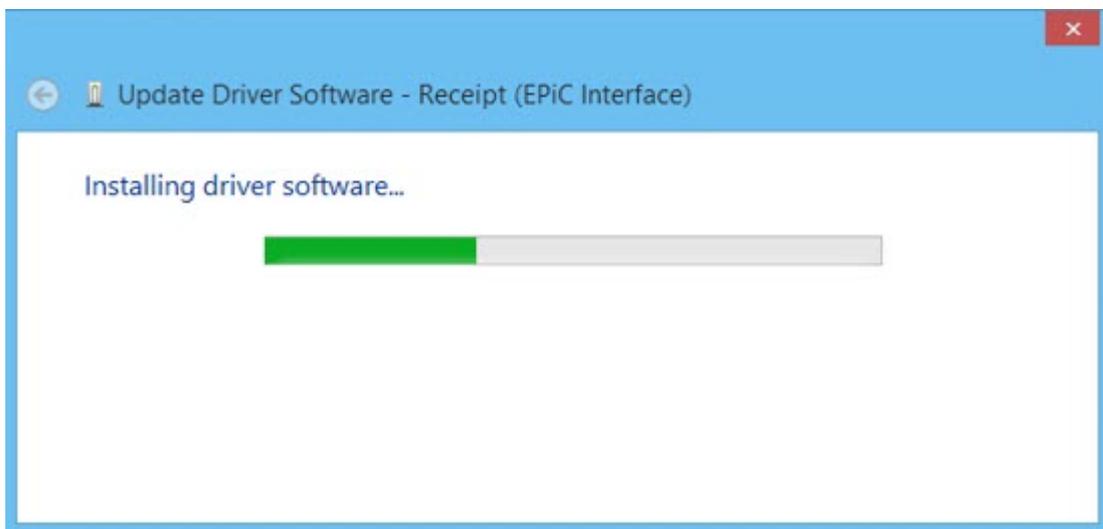


5. Select **Browse**, and then select the **Edgeport Driver** folder.

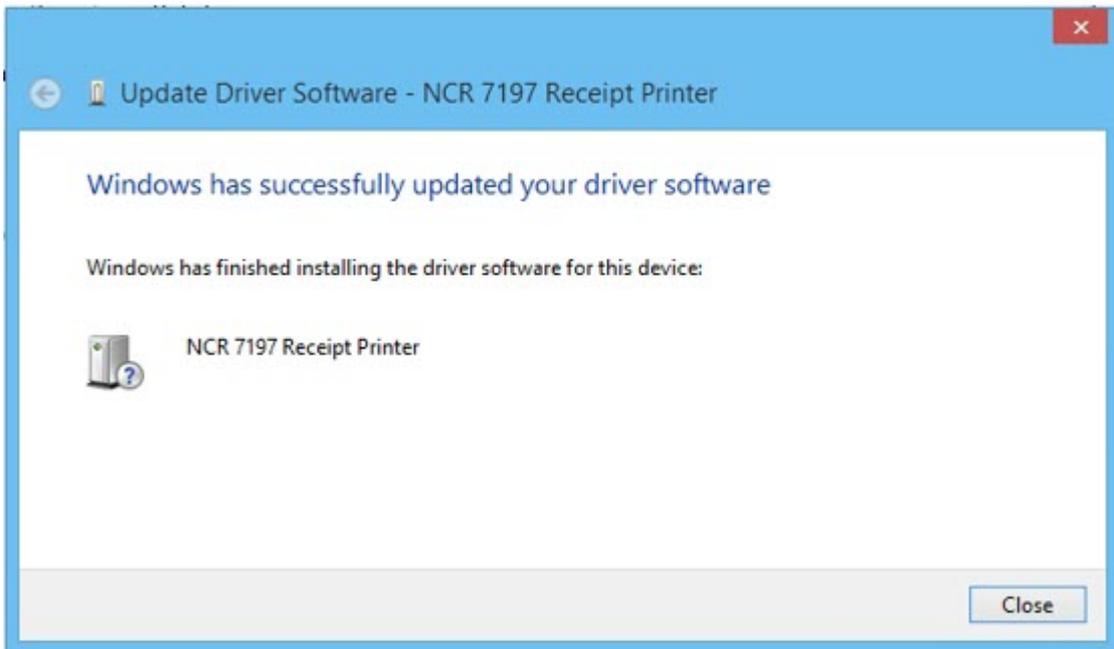
6. Select **Next**.



The system starts installing the USB Virtual COM port driver for printers.



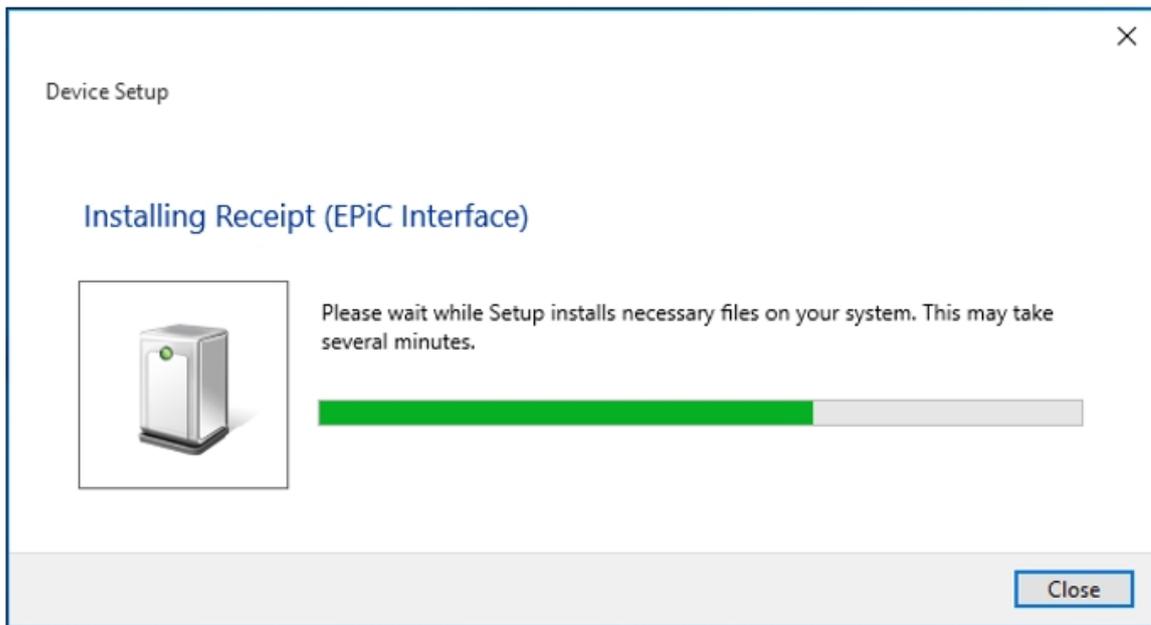
When the installation is complete, the following window is displayed.



# Windows 10

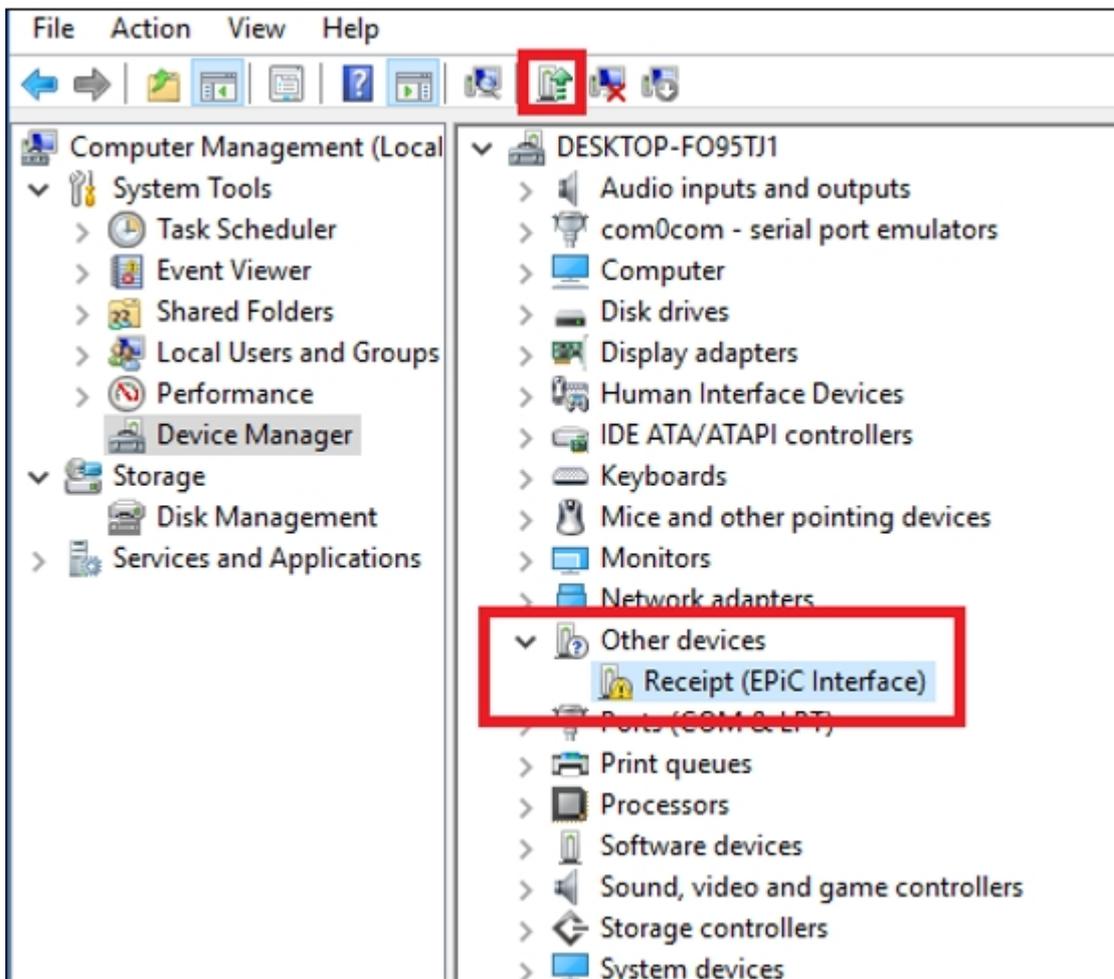
To install the USB Virtual COM Port Driver for Printer on a Windows 8 system, follow these steps:

1. The printer beeps when it is plugged in to show the USB device is recognized. The Device Setup window displays that the Installing Receipt (EPiC Interface) process is ongoing.

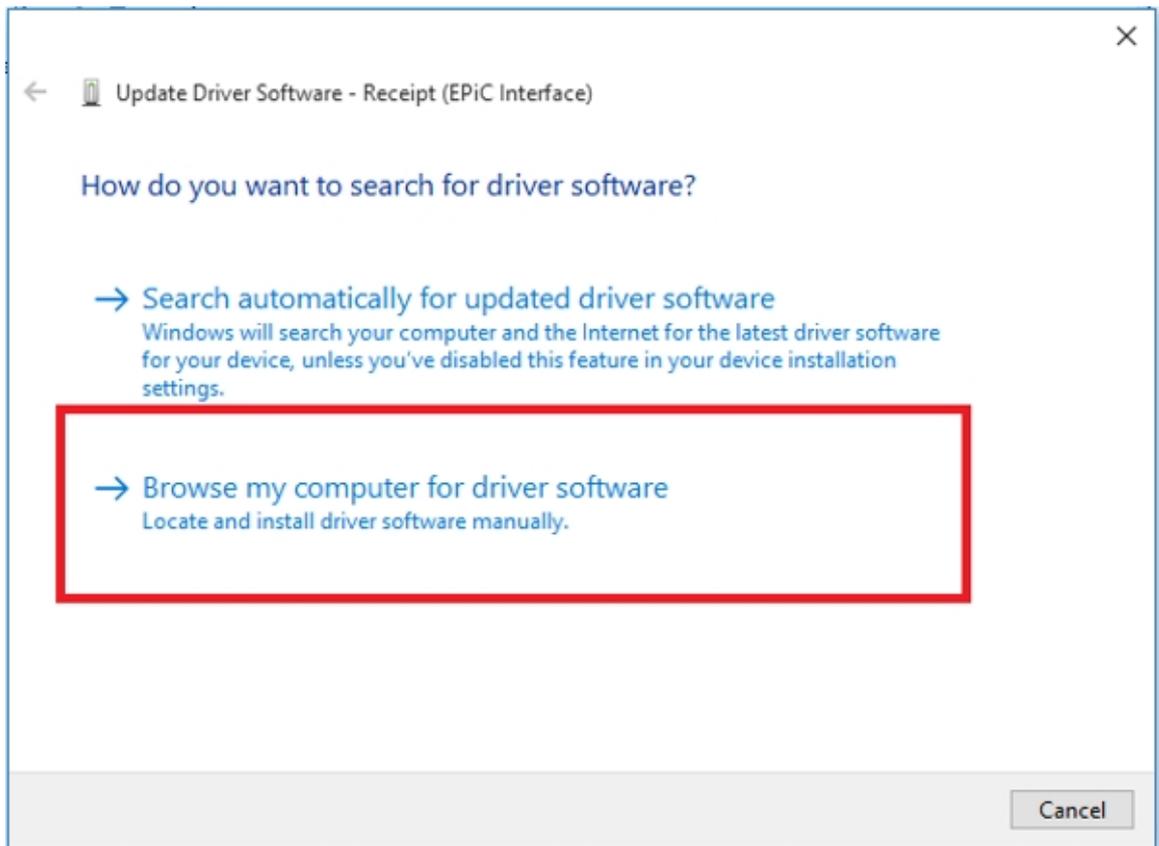


2. Open the Device Manager, and then select **Receipt (EPiC interface)**.

3. Select the **Update Driver Software** button.

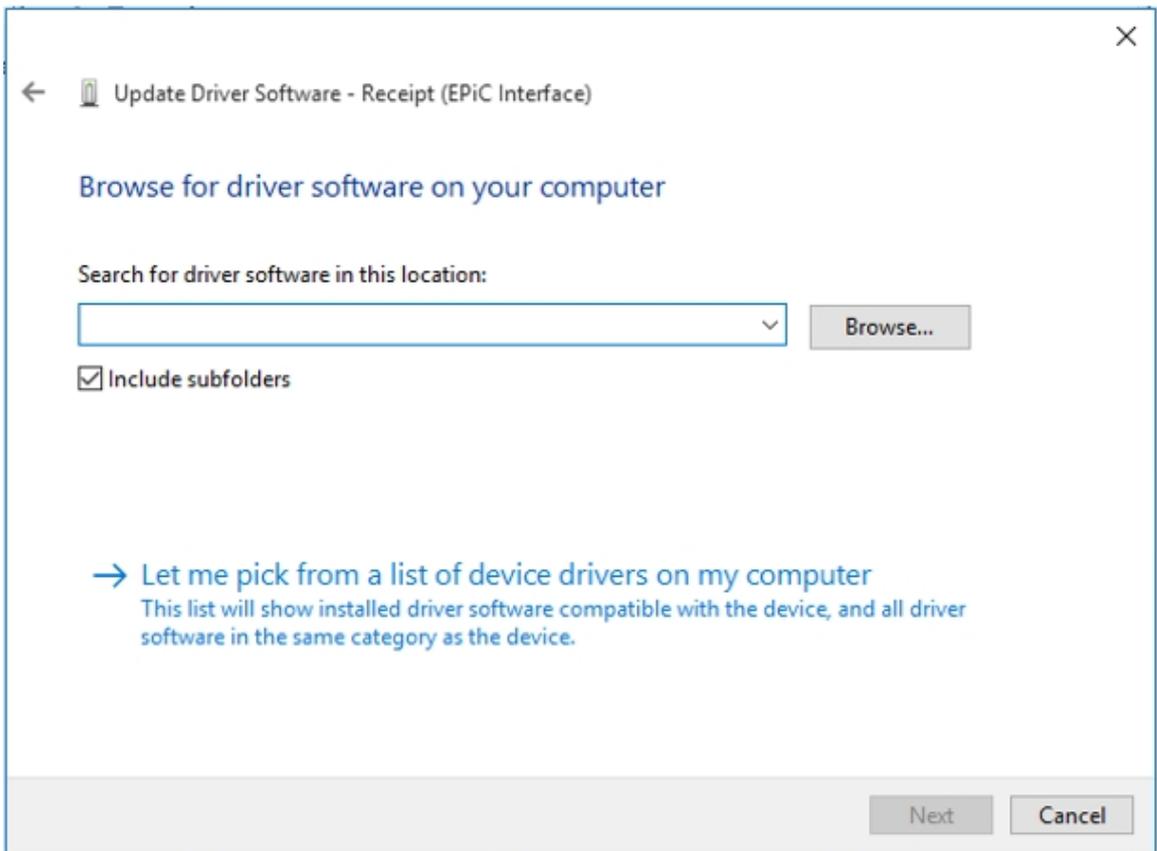


4. Select **Browse my computer for driver software**.

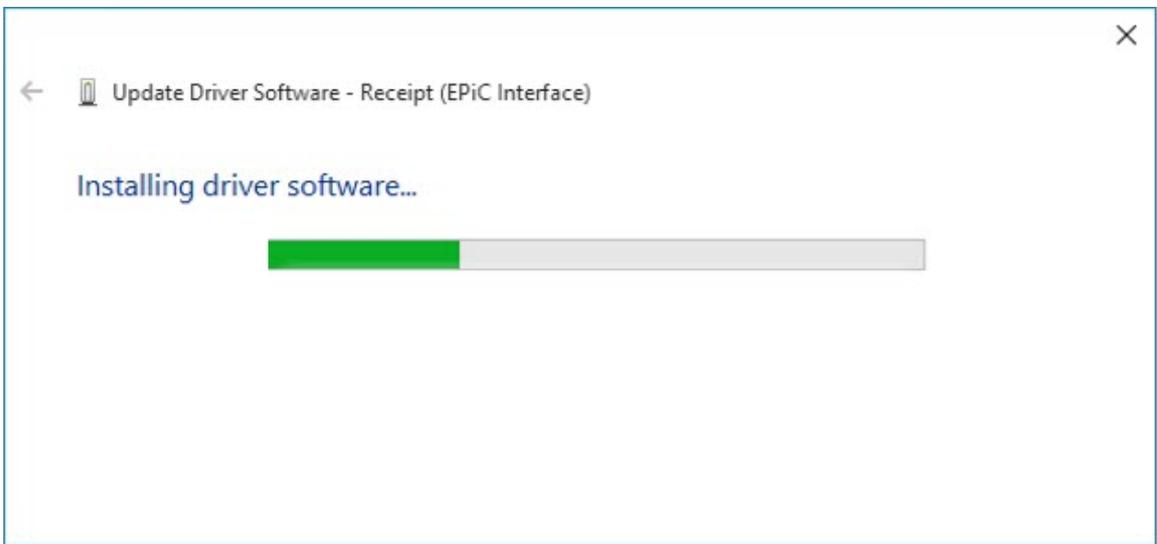


5. Select **Browse**, and then select the **Edgeport Driver** folder.

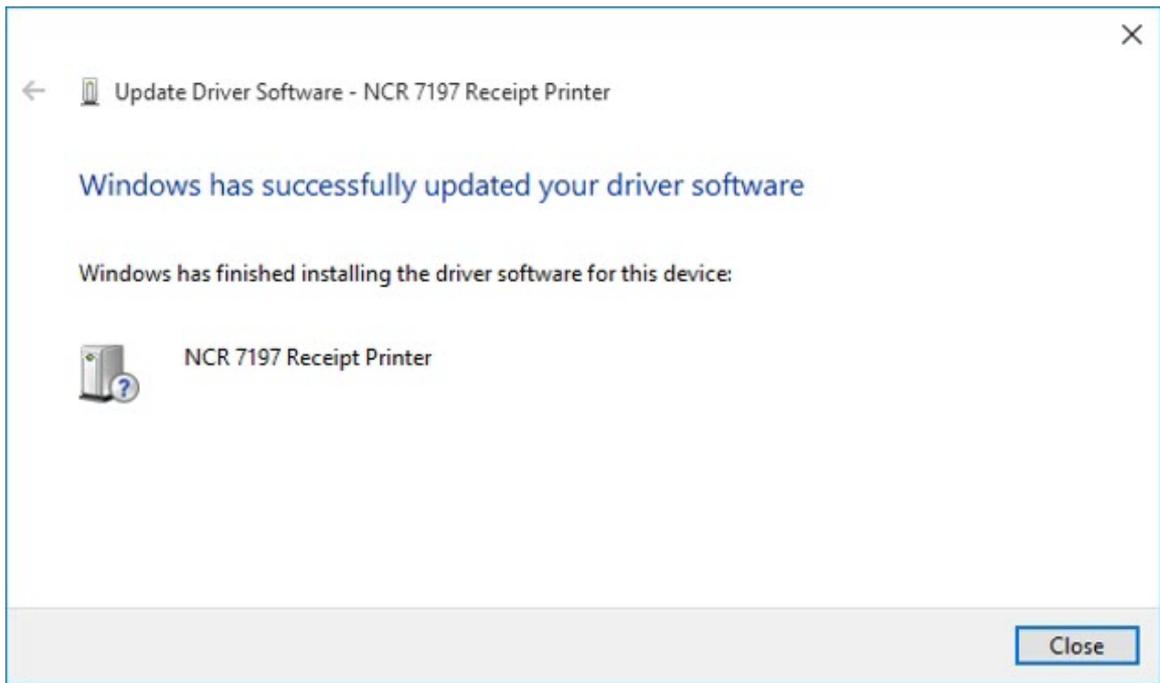
6. Select **Next**.



The system starts installing the printer driver.



When the installation is complete, the following window is displayed.



# Verifying the installation

To verify that the device drivers were correctly installed, refer to the following sections:

- "[Windows POSReady 7](#)" on the next page
- "[Windows 8](#)" on page 96
- "[Windows 10](#)" on page 98

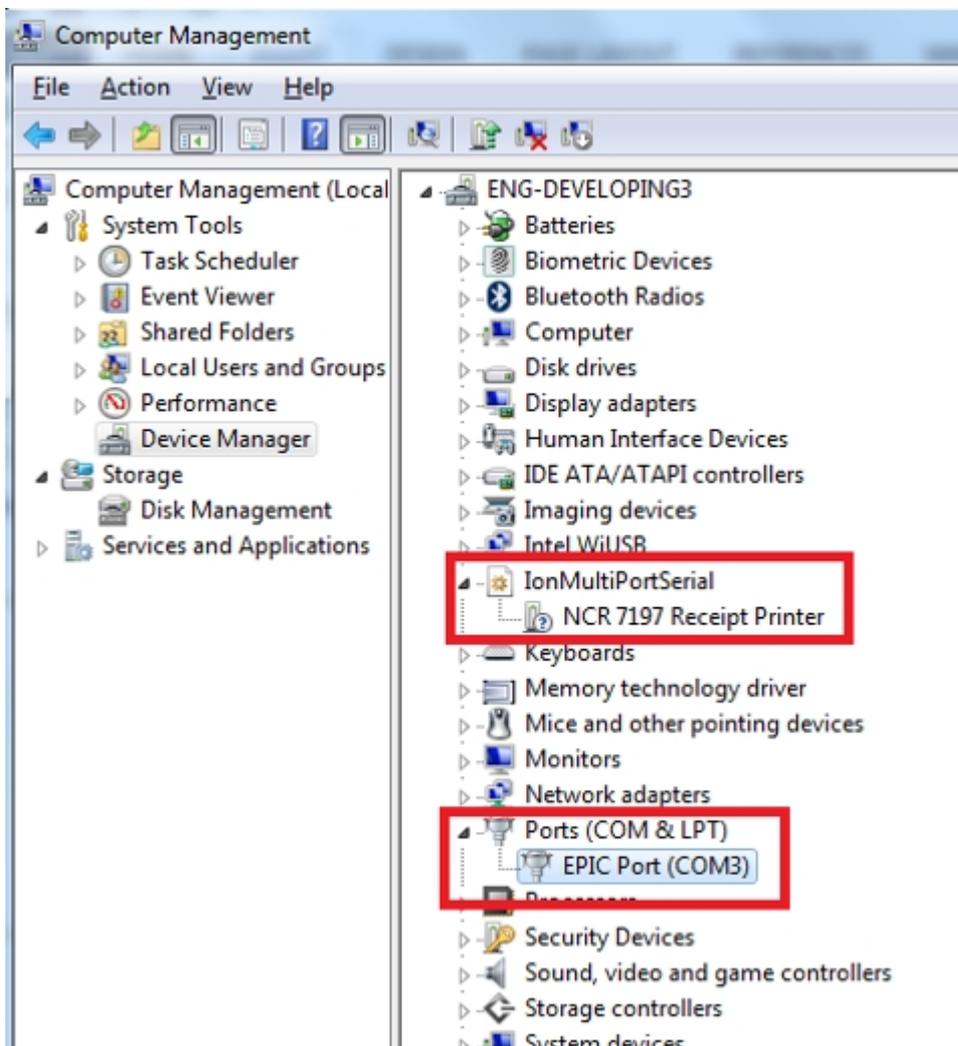
# Windows POSReady 7

To verify the installation of the driver on a Windows POSReady 7 system, follow these steps:

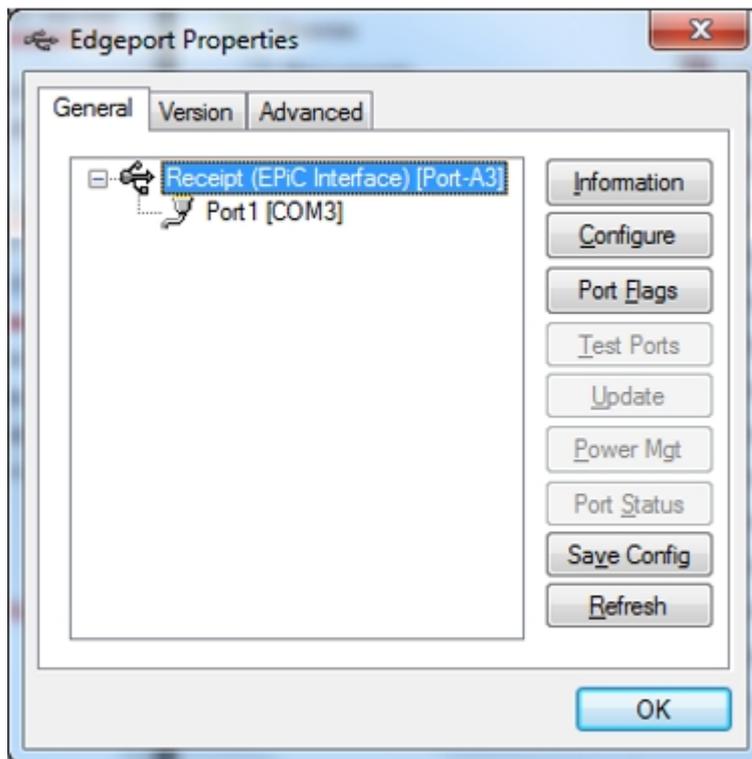
1. Open the Device Manager window.
2. Make sure that the NCR 7197 Receipt Printer and the EPIC Port are installed.

## Note

- The NCR 7197 Receipt Printer is the defined USB VID/PID (Vendor ID/Product ID) of the NCR Single Station printers (7197, 7198, 7199).
- If this information is not listed, then the installation was not successful. You need to reinstall the drivers.



3. Open the Edgeport utility and make sure the Port is assigned.



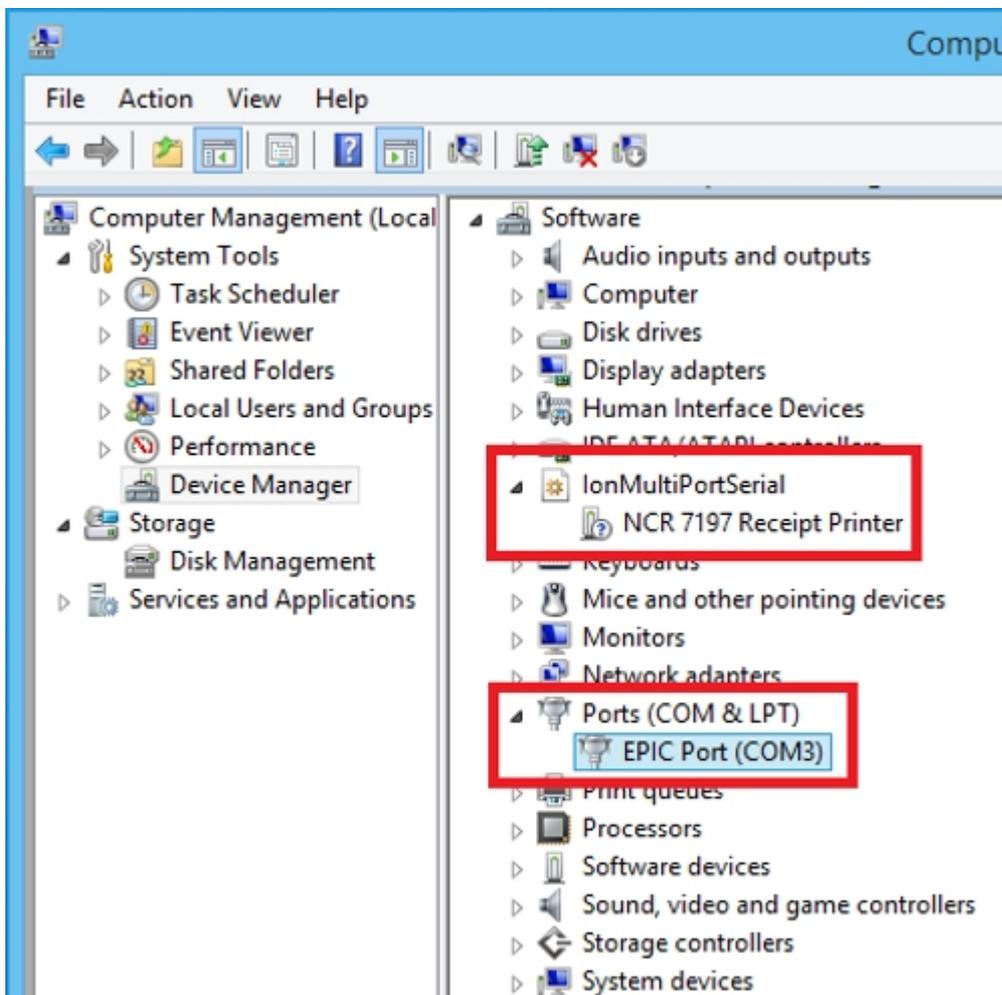
# Windows 8

To verify the installation of the driver on a Windows 8 system, follow these steps:

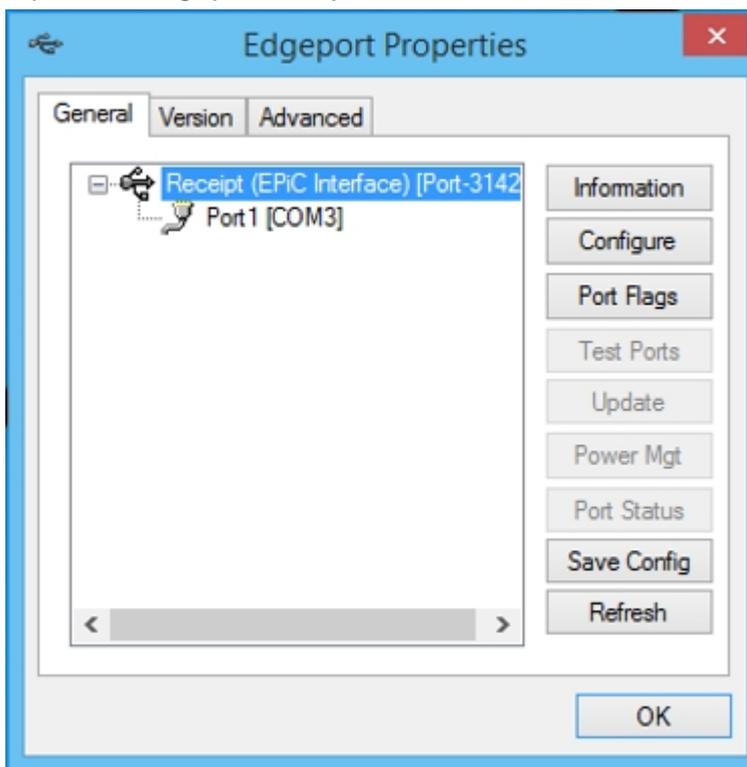
1. Open the Device Manager window.
2. Make sure that the **NCR 7197 Receipt Printer** and the **EPIC Port** are installed.

## Note

- The NCR 7197 Receipt Printer is the defined USB VID/PID (Vendor ID/Product ID) of the NCR Single Station printers (7197, 7198, 7199).
- If this information is not listed, then the installation was not successful. You need to reinstall the drivers.



3. Open the Edgeport utility and make sure the Port is assigned.



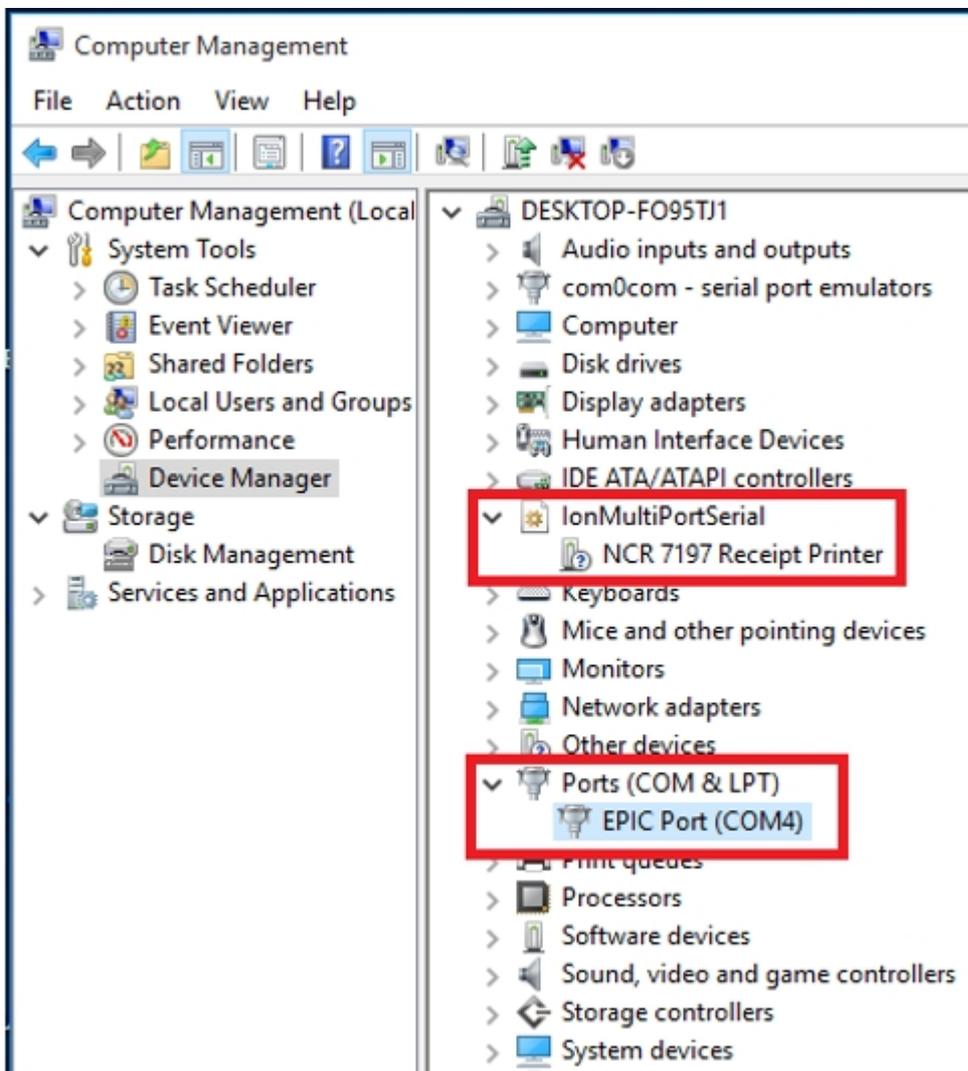
# Windows 10

To verify the installation of the driver on a Windows 10 system, follow these steps:

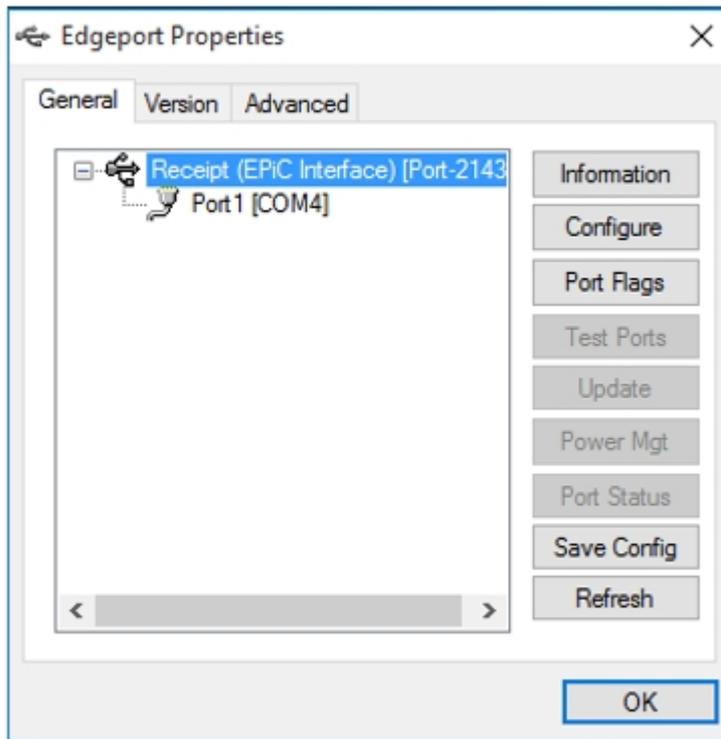
1. Open the Device Manager window.
2. Make sure that the **NCR 7197 Receipt Printer** and the **EPIC Port** are installed.

## Note

- The NCR 7197 Receipt Printer is the defined USB VID/PID (Vendor ID/Product ID) of the NCR Single Station printers (7197, 7198, 7199).
- If this information is not listed, then the installation was not successful. You need to reinstall the drivers.



3. Open the Edgeport utility and make sure the Port is assigned.



# Uninstalling the drivers

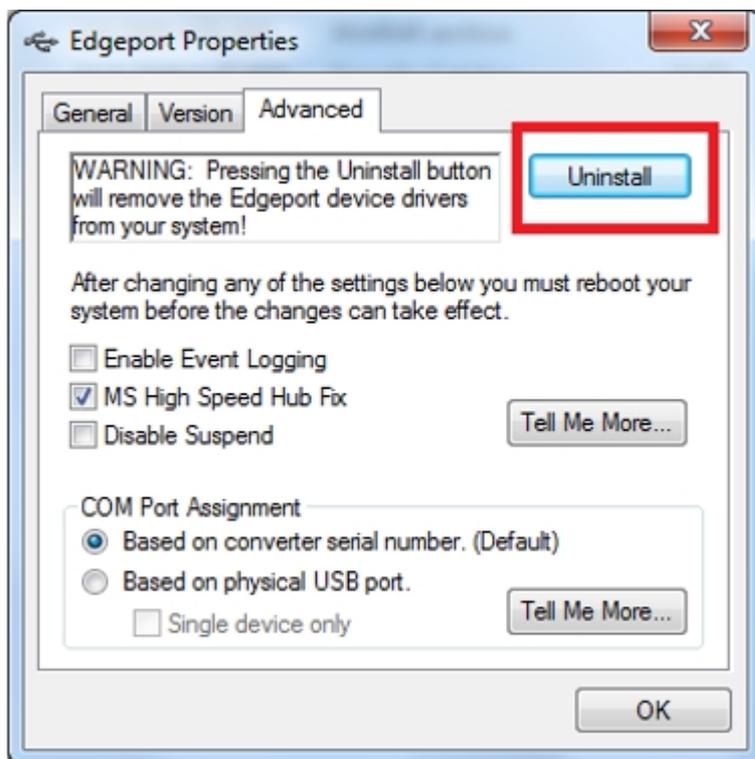
To uninstall the printer driver, refer to the following sections:

- "[Windows POSReady 7](#)" on the next page
- "[Windows 8](#)" on page 103
- "[Windows 10](#)" on page 105

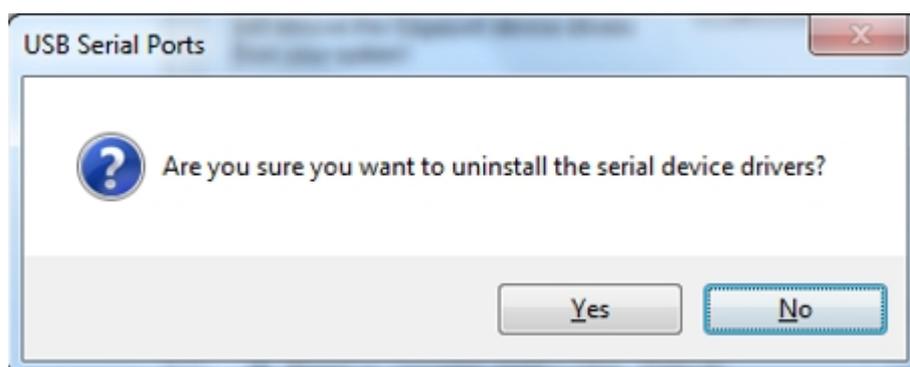
# Windows POSReady 7

To uninstall the printer driver on a Windows POSReady 7 system, follow these steps:

1. Open the Edgeport utility.
2. Select the **Advanced** tab.
3. Select the **Uninstall** button, and then follow the on–screen instructions.



The following window is displayed.



4. Select **Yes**.

The system uninstalls the driver, and then displays the following window.

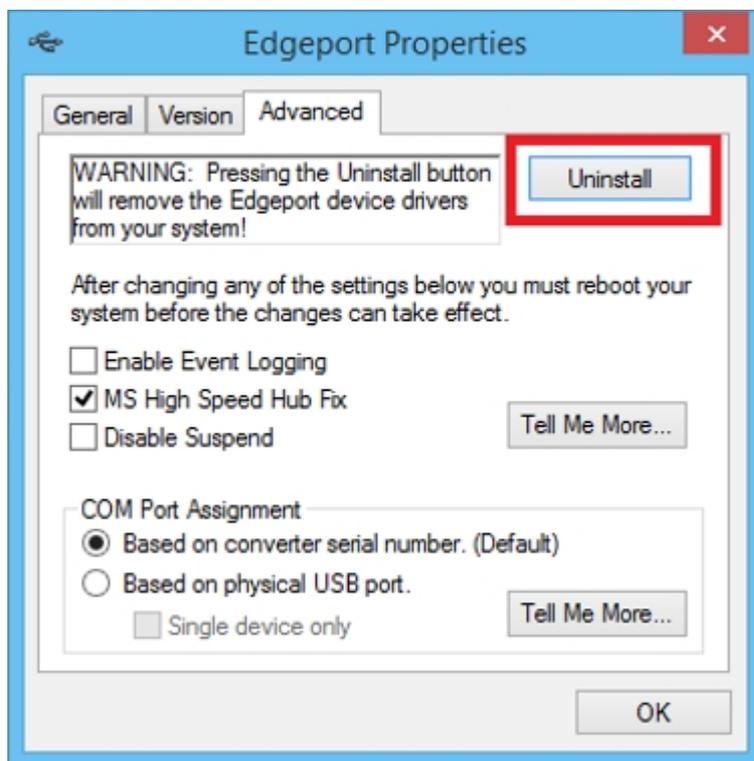


5. Select **Yes** to completely uninstall the driver and to restart the PC.

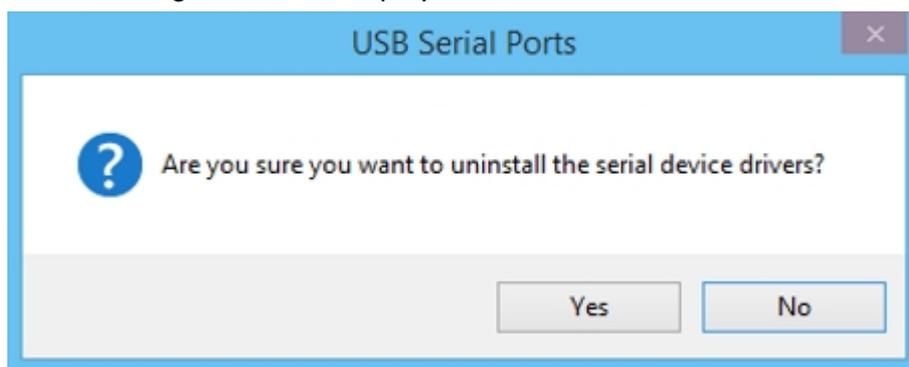
# Windows 8

To uninstall the printer driver on a Windows 8 system, follow these steps:

1. Open the Edgeport utility.
2. Select the **Advanced** tab.
3. Select the **Uninstall** button, and then follow the on–screen instructions.

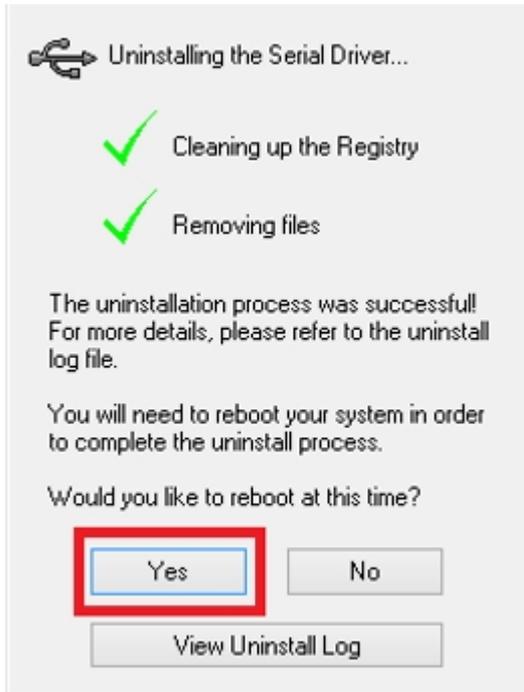


The following window is displayed.



4. Select **Yes**.

The system uninstalls the driver, and then displays the following window.

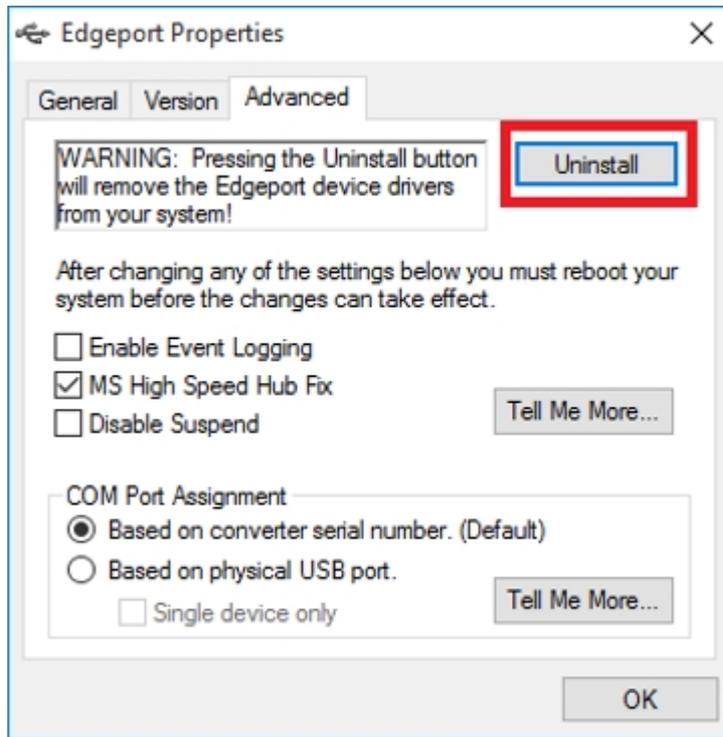


5. Select **Yes** to completely uninstall the driver and to restart the PC.

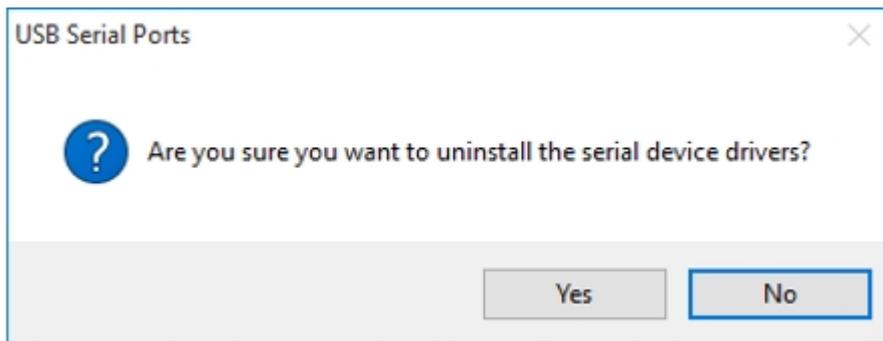
# Windows 10

To uninstall the printer driver on a Windows 8 system, follow these steps:

1. Open the Edgeport utility.
2. Select the **Advanced** tab.
3. Select the **Uninstall** button, and then follow the on–screen instructions.

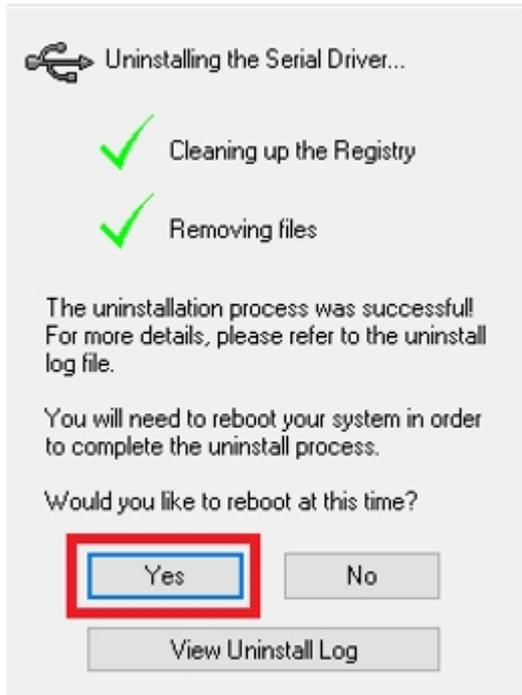


The following window is displayed.



4. Select **Yes**.

The system uninstalls the driver, and then displays the following window.



5. Select **Yes** to completely uninstall the driver and to restart the PC.

# Configuring Serial Port Number Assignments

This section describes how the NCR USB solution assigns serial port numbers (for example, COMx) to the printer. The information that determines the assigned port number is stored in the host computer and not in the printer. This assignment is made in one of three ways. The first method is the default method that automatically assigns a serial port number to the printer. The other two methods require the user to specify a port number. These methods are described more fully in the following section.

## Serial port configuration methods

### Automatic (Default)

When the printer is plugged into the USB port of the host and the drivers are loaded, the printer will default to the next available serial port number. In many cases, this is exactly what is desired. You can check the assigned serial port by clicking the General tab in the Edgeport utility. You'll see an entry for the NCR printer. Expand the list to see which serial port has been assigned to the printer.

### Assigning a serial port to the printer

If the default assignment does not meet the requirements of the installation, you can assign a different serial port to the printer. From the General tab of the Edgeport utility, select the printer and press Configure. Follow the directions on the resulting form to assign a new port to the printer.

# Communication Interface Modes

The Configuration Menu gives the user the option of setting the printer to use a USB communication.

## RS–232C Interface settings [Standard Model]

If the user sets the printer to use an RS–232C serial interface, the Configuration Menu can be used to set the following RS–232C specific settings:

- Set a baud rate 115200, 57600, 38400, 19200, 9600 baud
- Set the number of data bits to seven or eight
- Set the number of stop bits to one or two
- Enable or disable parity
- Set the printer to ignore data errors or print a “?” upon encountering an error

The settings used will depend on the software the operator is using and the capabilities of the host computer.

Press the Paper Feed button to select the communications settings.

### \*\*\* Interface (RS232C) \*\*\*\*

Baud Rate	-> 1 Click
Data Bits	-> 2 Clicks
Stop Bits	-> 3 Clicks
Parity	-> 4 Clicks
Flow Control	-> 5 Clicks
Reception Errors	-> 6 Clicks
DSR Signal	-> 7 Clicks

\*Enter code, and hold down a Key for 1 sec

### \*\* BAUD RATE

115200 Baud	-> 1 Click
57600 Baud	-> 2 Clicks
38400 Baud	-> 3 Clicks
19200 Baud*	-> 4 Clicks
9600 Baud	-> 5 Clicks

\*Enter code, and hold down a Key for 1 sec

**\*\* DATA BITS**

8 Data Bits\* -> 1 Click

7 Data Bits -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**\*\* STOP BITS**

1 Stop Bits\* -> 1 Click

2 Stop Bits -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**\*\* PARITY**

No Parity\* -> 1 Click

Even Parity -> 2 Clicks

Odd Parity -> 3 Clicks

\*Enter code, and hold down a Key for 1 sec

**\*\* FLOW CONTROLS**

Software (XON/XOFF) -> 1 Click

Hardware (DTR/DSR)\* -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**\*\* RECEPTION ERRORS**

Ignore Errors -> 1 Click

Print '?'\* -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

***Series i***

**\*\* DSR Signal**

Enable -> 1 Click

Disable -> 2 Clicks

Enter code, then hold Button DOWN.

At least 1 second to validate.

***Series ii***

**\*\* DSR SIGNAL**

DSR Enable\* -> 1 Click

DSR Disable -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

# USB Interface settings [Standard Model]

USB Interface setting can be changed by selecting USB Type in the Hardware menu.

## **\*\* USB TYPE**

ION (EpiC) -> 1 Click

NonION (NHPI)\* -> 2 Clicks

NonION (PRTR) -> 3 Clicks

\*Enter code, and hold down a Key for 1 sec

# Ethernet Interface settings [Option]

Press the Paper Feed button to select the communications settings.

## **\*\*\* Interface (Ethernet)**

RTC Protocol -> 1 Click

DHCP -> 2 Clicks

TCP max.connection -> 3 Clicks

Physical LAN Speed -> 4 Clicks

Link Down Timeout -> 5 Clicks

TCP idle Timeout -> 6 Clicks

SNMP Trap 1 -> 7 Clicks

SNMP Trap 2 -> 8 Clicks

\*Enter code, and hold down a Key for 1 sec

## **\*\* RTC Protocol**

TCP\* -> 1 Click

UDP -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

## **Series i**

### **\*\* DHCP**

Disable\* -> 1 Clicks

Enable -> 2 Clicks

Enter code, then hold Button DOWN.

At least 1 second to validate.

## **Series ii**

### **\*\* DHCP**

Disable -> 1 Click

Enable\* -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

### **\*\* TCP max.connection**

1 Client\* -> 1 Click

2 Clients -> 2 clicks

3 Clients -> 3 Clicks

4 Clients -> 4 Clicks

5 Clients -> 5 Clicks

6 clients -> 6 Clicks

\*Enter code, and hold down a Key for 1 sec

### **\*\* Physical LAN Speed**

Auto\* -> 1 Click

100 Mbps Full -> 2 Clicks

100 Mbps Half -> 3 Clicks

10 Mbps Full -> 4 Clicks

10 Mbps Half -> 5 Clicks

\*Enter code, and hold down a Key for 1 sec

## **Series i**

### **\*\*Link Down Timeout**

No Time Out -> 1 Click

1 min - 10 min -> 2 Clicks

11 min - 20 min -> 3 Clicks

21 min - 30 min -> 4 Clicks

31 min - 40 min -> 5 Clicks

41 min - 50 min -> 6 Clicks

51 min - 60 min -> 7 Clicks

61 min - 70 min -> 8 Clicks

71 min - 80 min -> 9 Clicks

81 min - 90 min -> 10 Clicks

91 min - 100 min -> 11 Clicks

101 min - 110 min -> 12 Clicks

111 min - 120 min -> 13 Clicks

Enter code, then hold Button DOWN.

At least 1 second to validate.

## **Series ii**

### **\*\*Link Down Timeout**

No Time out	->	1 Click
1 min - 10 min	->	2 Clicks
11 min - 20 min	->	3 Clicks
21 min - 30 min	->	4 Clicks
31 min - 40 min	->	5 Clicks
41 min - 50 min	->	6 Clicks
51 min - 60 min	->	7 Clicks
61 min - 70 min	->	8 Clicks
71 min - 80 min	->	9 Clicks
81 min - 90 min	->	10 Clicks
91 min - 100 min	->	11 Clicks
101 min - 110 min	->	12 Clicks
111 min - 120 min*	->	13 Clicks

\*Enter code, and hold down a Key for 1 sec

## **Series i**

### **\*\*TCP idle Timeout**

No Time Out	->	1 Click
1 min - 10 min	->	2 Clicks
11 min - 20 min	->	3 Clicks
21 min - 30 min	->	4 Clicks
31 min - 40 min	->	5 Clicks
41 min - 50 min	->	6 Clicks
51 min - 60 min	->	7 Clicks
61 min - 70 min	->	8 Clicks
71 min - 80 min	->	9 Clicks
81 min - 90 min	->	10 Clicks
91 min - 100 min	->	11 Clicks
101 min - 110 min	->	12 Clicks
111 min - 120 min	->	13 Clicks

Enter code, then hold Button DOWN.  
At least 1 second to validate.

## ***Series ii***

### **\*\* TCP Idle Timeout**

No Time out -> 1 Click  
1 min - 10 min -> 2 Clicks  
11 min - 20 min -> 3 Clicks  
21 min - 30 min -> 4 Clicks  
31 min - 40 min -> 5 Clicks  
41 min - 50 min -> 6 Clicks  
51 min - 60 min -> 7 Clicks  
61 min - 70 min -> 8 Clicks  
71 min - 80 min -> 9 Clicks  
81 min - 90 min -> 10 Clicks  
91 min - 100 min -> 11 Clicks  
101 min - 110 min -> 12 Clicks  
111 min - 120 min\* -> 13 Clicks  
\*Enter code, and hold down a Key for 1 sec

## ***Series i***

### **\*\* SNMP Trap 1**

Disable\* -> 1 Click  
Enable -> 2 Clicks  
Enter code, then hold Button DOWN.  
At least 1 second to validate.

## ***Series ii***

### **\*\* SNMP Trap 1**

Disable\* -> 1 Click  
Enable -> 2 Clicks  
\*Enter code, and hold down a Key for 1 sec

### **\*\* SNMP Trap 2**

Disable\* -> 1 Click  
Enable -> 2 Clicks  
\*Enter code, and hold down a Key for 1 sec

# Save Parameters

This function allows to save the selected communication settings or return to the communication settings to select additional options.

Press the Paper Feed button to select an option.

## **Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

# Emulation/Software options

## Receipt synchronization

This function makes it possible for the user to select whether to enable or to disable receipt synchronization printing.

When "Receipt synchronization" is enabled (Mode1 or Mode2), printer returns the status for buffered status command after completion of the print operation.

The following commands are the buffered status command.

```
1B 75 0 Transmit Peripheral Device Status
```

```
1B 76 Transmit Printer Status
```

```
1D 49 n Transmit Printer ID
```

```
1D 72 n Transmit Status
```

Regarding Mode1 and Mode2, the command/status sequence is completely the same. The only difference is the printing speed. The printing speed of Mode1 is the same as in normal printing (max. 12ips).

Whereas, the printing speed of Mode2 is 4ips (max) in order to prevent the clatter print in the synchronized line mode.

When Mode3 is selected, the following command will be available.

```
1F 0A n Get Print Completion
```

When "Receipt synchronization" is disabled, printer returns the status for buffered status command immediately after decoding the status command.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Receipt Sync \*\*\*\*\***

- Sync. Mode 2           -> 1 Click
- Disable\*               -> 2 Clicks
- Sync. Mode 1           -> 3 Clicks
- Sync. Mode 3           -> 4 Clicks
- Legacy                 -> 5 Clicks

\*Enter code, and hold down a Key for 1 sec

## Save parameters

This function allows to save the selected communication settings or to return to the communication settings to select additional options.

Press the Paper Feed button to select an option.

**Save new parameters?**

- Save the change       -> Long Press
- Cancel the change    -> Short Click

## Default Lines per Inch

This function allows the user to set the default lines per inch printed by the thermal printer to 6, 7.52, or 8.13.

Press the Paper Feed button to select an option.

### \*\*\*\*\* Default LPI \*\*\*\*\*

8.13 Lines per Inch                   -> 1 Click  
7.52 Lines per Inch\*                 -> 2 Clicks  
6 lines per Inch                     -> 3 Clicks  
\*Enter code, and hold down a Key for 1 sec

### Save new parameters?

Save the change           -> Long Press  
Cancel the change       -> Short Click

## Carriage Return usage

This function allows the printer to ignore or use the Carriage Return (hexadecimal 0D) command depending on the application. Some applications expect the command to be ignored while others use the command as a print command.

Press the Paper Feed button to select an option.

### \*\*\*\*\* Carriage \*\*\*\*\*

Ignore CR                               -> 1 Click  
Use CR as Print Cmd\*                 -> 2 Clicks  
\*Enter code, and hold down a Key for 1 sec

### Save new parameters?

Save the change           -> Long Press  
Cancel the change       -> Short Click

## Asian mode

This function makes it possible for the user to select an Asian character for the printer.

Press the Paper Feed button to select an option.

**\*\*\*\*\* ASIAN MODE \*\*\*\*\***

Asian Mode 932 On -> 1 Click

Asian Mode Off\* -> 2 Clicks

Asian Mode 936 On -> 3 Clicks

Asian Mode 949 On -> 4 Clicks

Asian Mode 950 On -> 5 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

# Set Font Type option

Set Font Type using the Emulation submenu.

## **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

### **Series i**

**\*\*\*\*\*SPECIALFONT\*\*\*\*\***

Original Font *	-> 1 Click
Mode 1 CP437/858 Large	-> 2 Clicks
Mode 2 866 Mini	-> 3 Clicks
Mode 3 Constructed 874	-> 4 Clicks
Mode 4 Contextual 1256 (Proportional Pitch)	-> 5 Clicks
Mode 5 Contextual 1256 (Fixed Pitch)	-> 6 Clicks
Mode 6 Greek	-> 7 Clicks
SBCS2	-> 8 Clicks
SBCS3	-> 9 Clicks

Enter code, then hold Button DOWN.

At least 1 second to validate.

### **Series ii**

**\*\*\*\*\* SPECIAL FONT \*\*\*\*\***

Original Font*	-> 1 Click
Mode 1 CP437/858 Large	-> 2 Clicks
Mode 2 866 Mini	-> 3 Clicks
Mode 3 Constructed 874	-> 4 Clicks
Mode 4 Context Prop 1256	-> 5 Clicks
Mode 5 Context Fix 1256	-> 6 Clicks
Mode 6 Greek Font Map	-> 7 Clicks
Mode 7 Constructed 874 LF	-> 8 Clicks
Mode 8 850 Mini	-> 9 Clicks
SBCS2	-> 10 Clicks
SBCS3	-> 11 Clicks

|\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

## Set Compress Pitch option

Set Compress Pitch command using the configuration menu.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

### **Series i**

\*\*\*\*\* COMPRESS PITCH FONT\*\*\*\*\*

Valid -> 1 Click

Invalid\* -> 2 Clicks

Enter code, then hold Button DOWN.

At least 1 second to validate.

### **Series ii**

\*\*\*\*\* Compress Pitch Font \*\*\*\*\*

Valid\* -> 1 Click

Invalid -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

## Set 48 CHARACTER mode

This option is to set 48 Character printing. The selections are enable or disable. The end result is to print 48 characters in one line.

Press the Paper Feed button to select an option.

**\*\*\*\*\* 48 Character Mode \*\*\*\*\***

Disable\*           -> 1 Click

Enable             -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change     -> Long Press

Cancel the change   -> Short Click

## Set PDF417 MAX COLUMN print

This function makes it possible for the user to select the print columns for the PDF417 bar code printing. The selections are 9 or 14 columns. The end result is the height of the bar code printing. The default setting is 9 columns.

RS485 doesn't support this function.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

```
***** PDF417 Max Columns *****
9 Columns*           -> 1 Click
14 Columns           -> 2 Clicks
Auto Column          -> 3 Clicks
*Enter code, and hold down a Key for 1 sec
```

#### **Save new parameters?**

```
Save the change      -> Long Press
Cancel the change    -> Short Click
```

## Set Auto Reset option

Set Auto Reset using the configuration menu. Answer No to the questions printed on the receipt until Auto Reset options are displayed.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

### **Series i**

**\*\* SET AUTO RESET \*\*\*\*\***

Disable\* -> 1 Click  
10 Sec -> 2 Clicks  
20 Sec -> 3 Clicks  
30 Sec -> 4 Clicks  
40 Sec -> 5 Clicks  
50 Sec -> 6 Clicks  
60 Sec -> 7 Clicks

Enter code, then hold Button DOWN.

At least 1 second to validate.

### **Series ii**

**\*\*\*\*\* Auto Reset \*\*\*\*\***

Disable -> 1 Click  
10 Sec -> 2 Clicks  
20 Sec\* -> 3 Clicks  
30 Sec -> 4 Clicks  
40 Sec -> 5 Clicks  
50 Sec -> 6 Clicks  
60 Sec -> 7 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

## Set Compatibility Top Margin option

Set Compatibility Top Margin using the configuration menu. Answer No to the questions printed on the receipt until Compatibility Barcode Length options are displayed.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Compatible Top Margin \*\*\*\*\***

Disable -> 1 Click

Enable\* -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

## Set Buffered Printing

### Note

This setting is supported in Series ii only.

Set the Buffered Printing using the Emulation sub-configuration menu. This setting sets printer to Batch print mode where printing will trigger only under certain conditions like after 80 lines processed, cut command, generate a pulse. and so forth.

### Caution

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

```
***** Buffered printing *****
Disable*      -> 1 Click
Normal        -> 2 Clicks
Upside Down   -> 3 Clicks
*Enter code, and hold down a Key for 1 sec
```

#### Save new parameters?

```
Save the change      -> Long Press
Cancel the change    -> Short Click
```

## Set Legacy LF + CR

### Note

This setting is supported in Series ii only.

Set the Legacy LF + CR using the Emulation sub-configuration menu. This setting is used to set the number of feed commands to execute when we use feed command with the carriage return command.

### Caution

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

```
***** Legacy LF + CR *****  
1 Feed*           -> 1 Click  
2 Feed            -> 2 Clicks  
*Enter code, and hold down a Key for 1 sec
```

#### Save new parameters?

```
Save the change      -> Long Press  
Cancel the change   -> Short Click
```

# Hardware options

## Set USB type

Set the USB type using the configuration menu. Select Hardware Options in the Configuration Menu.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

```
***** USB Type *****  
ION (Epic)                -> 1 Click  
NonION (NHPI)*           -> 2 Clicks  
NonION (PRTR)            -> 3 Clicks  
Fixed ION (Epic)         -> 4 Clicks  
*Enter code, and hold down a Key for 1 sec
```

### **Save new parameters?**

```
Save the change          -> Long Press  
Cancel the change       -> Short Click
```

## Set USB speed

Set the USB speed using the configuration menu. Select Hardware Options in the Configuration Menu.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

**\*\*\*\*\* USB Speed \*\*\*\*\***

Full Speed\*      -> 1 Click

High Speed        -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change      -> Long Press

Cancel the change    -> Short Click

## Set print mode

Set the Receipt Print Mode using the configuration menu. Select Hardware Options in the Configuration Menu.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Print Mode \*\*\*\*\***

High Speed Print\*           -> 1 Click

High Quality Print           -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change           -> Long Press

Cancel the change       -> Short Click

## Print density

This function makes it possible to adjust the energy level of the print head to darken the printout. An adjustment should only be made when necessary. The factory setting is 100%.

### Warning

Choose an energy level no higher than necessary to achieve a dark printout.

Failure to observe this rule may result in a printer service call or voiding of the printer warranty. Consult an NCR technical support specialist for any questions.

Press the Paper Feed button to select an option.

```
***** Print Density *****
-11 ~ -15      -> 1 Click
  -6 ~ -10     -> 2 Clicks
  -1 ~ -5      -> 3 Clicks
   0           -> 4 Clicks
  +1 ~ +5      -> 5 Clicks
  +6 ~ +10     -> 6 Clicks
+11 ~ +15     -> 7 Clicks
*Enter code, and hold down a Key for 1 sec
```

Selecting Option 1 displays the following submenu.

```
-11           -> 1 Click
-12           -> 2 Clicks
-13           -> 3 Clicks
-14           -> 4 Clicks
-15           -> 5 Clicks
*Enter code, and hold down a Key for 1 sec
```

Selecting Option 2 displays the following submenu.

```
-6           -> 1 Click
-7           -> 2 Clicks
-8           -> 3 Clicks
-9           -> 4 Clicks
-10          -> 5 Clicks
*Enter code, and hold down a Key for 1 sec
```

Selecting Option 3 displays the following submenu.

```
-1          -> 1 Click
-2          -> 2 Clicks
-3          -> 3 Clicks
-4          -> 4 Clicks
-5          -> 5 Clicks
*Enter code, and hold down a Key for 1 sec
```

Selecting Option 5 displays the following submenu.

```
+1          -> 1 Click
+2          -> 2 Clicks
+3          -> 3 Clicks
+4          -> 4 Clicks
+5          -> 5 Clicks
*Enter code, and hold down a Key for 1 sec
```

Selecting Option 6 displays the following submenu.

```
+6          -> 1 Click
+7          -> 2 Clicks
+8          -> 3 Clicks
+9          -> 4 Clicks
+10         -> 5 Clicks
*Enter code, and hold down a Key for 1 sec
```

Selecting Option 7 option displays the following submenu.

```
+11         -> 1 Click
+12         -> 2 Clicks
+13         -> 3 Clicks
+14         -> 4 Clicks
+15         -> 5 Clicks
*Enter code, and hold down a Key for 1 sec
```

**Save new parameters?**

```
Save the change    -> Long Press
Cancel the change  -> Short Click
```

# Power supply

This function allows the user to set the maximum power for the printer to the below modes available.

Press the Paper Feed button to select an option.

## ***Series i***

Term Pwr-High\*       -> 1 Click  
NCR 75W Ext Pwr      -> 2 Clicks  
Term Pwr-Low         -> 3 Clicks  
NCR 60W Ext Pwr     -> 4 Clicks  
Enter code, then hold Button DOWN.  
At least 1 second to validate.

## ***Series ii***

**\*\*\*\*\* Power Supply \*\*\*\*\***  
Term Pwr-High\*       -> 1 Click  
NCR Ext Pwr           -> 2 Clicks  
Term Pwr-Low         -> 3 Clicks  
\*Enter code, and hold down a Key for 1 sec

### **Save new parameters?**

Save the change       -> Long Press  
Cancel the change     -> Short Click

## Set standby mode

Enable or disable the Standby Mode using the configuration menu. If the standby mode is enabled, the printer shifts to the standby mode in order to save the power consumption in the idle mode when the printer is in the idle mode.

Printer will exit from standby mode to normal mode in below criteria:

- Printer receives any data
- Feed key is pressed
- Receipt cover is opened / closed

After power-on, it will go to standby mode if it does not receive any transaction data in 60 seconds.

After one transaction, it will go to standby mode if it does not receive any transaction data in 1 second.

In disable setting, the printer does not shift to the standby mode. During going back from the standby mode, the response of the printer will be slightly delayed compared to the normal mode response.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Standby Mode \*\*\*\*\***

Disable                   -> 1 Click

Enable\*                   -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change       -> Long Press

Cancel the change   -> Short Click

## Set power off mode

Set the Shift Time to Power Off using the configuration menu. If the printer is in standby mode for the time that is defined by this setting, printer automatically power off. Once enter power off mode, all LED are turned off. If feed key is pressed, printer exit from power off mode and enter normal mode.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select a Shift Time to Power Off option.

**\*\*\*\*\* Power Off Mode \*\*\*\*\***

Disable\*                      -> 1 Click  
Enable (60min)               -> 2 Clicks  
Enable (120min)              -> 3 Clicks  
Enable (180min)              -> 4 Clicks  
Enable (240min)              -> 5 Clicks  
Enable (300min)              -> 6 Clicks

\*Enter code, and hold down a Key for 1 sec

### **Save new parameters?**

Save the change              -> Long Press  
Cancel the change            -> Short Click



## Paper width

This function allows the user to set the default paper width for the receipt thermal printer to 58mm or 80mm wide.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Paper Width \*\*\*\*\***

Paper Width = 80 mm\*      -> 1 Click

Paper Width = 58 mm      -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change      -> Long Press

Cancel the change    -> Short Click

## Set paper low detection

Paper Low Sensor makes it possible to enable or disable the paper low sensor for particular printer configurations.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Paper Low Detection \*\*\*\*\***

Enable (Remaining 40ft)	-> 1 Click
Disable	-> 2 Clicks
Enable (Remaining 30ft)	-> 3 Clicks
Enable (Remaining 20ft)	-> 4 Clicks
Enable (Remaining 15ft)*	-> 5 Clicks

\*Enter code, and hold down a Key for 1 sec

### Save new parameters?

Save the change	-> Long Press
Cancel the change	-> Short Click

## Set color paper option

This function allows the user to set the color paper option to Monochrome or Color Paper.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Color Paper \*\*\*\*\***

Monochrome\*               -> 1 Click

Color paper               -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change       -> Long Press

Cancel the change   -> Short Click

## Set buzzer tone

This function allows the user to set the Buzzer Tone to Low, Middle, and High.

Press the Paper Feed button to select an option.

**\*\*\*\*\* Buzzer Tone \*\*\*\*\***

Low -> 1 Click

Middle\* -> 2 Clicks

High -> 3 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

## Set power LED control

Set the power LED control using the configuration menu. Answer No to the questions printed on the receipt until the power LED control options are displayed.

### **Caution**

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

\*\*\*\*\* LED \*\*\*\*\*

Auto Mode\*       -> 1 Click

User Mode         -> 2 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change     -> Long Press

Cancel the change   -> Short Click

## Set Bit-Image Max Speed

### Note

This setting is supported in Series ii only.

Set the Bit Image max speed using the hardware sub configuration menu. This bit image max speed set the speed of bit images and grey image printing. The speed of printing varies from 2IPS to 16IPS.

### Caution

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

**\*\*\*\*\* BitImage Max Speed \*\*\*\*\***

14IPS	-> 1 Click
12IPS	-> 2 Clicks
10IPS	-> 3 Clicks
8IPS	-> 4 Clicks
6IPS	-> 5 Clicks
4IPS	-> 6 Clicks
2IPS	-> 7 Clicks
16IPS*	-> 8 Clicks

\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press

Cancel the change -> Short Click

# Set Paper Type

## Note

This setting is supported in Series ii only.

Set the Paper type using the hardware sub configuration menu. This option sets paper type with optimum parameter values in the thermal print control.

## Caution

Be extremely careful in changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the Paper Feed button to select an option.

### \*\*\*\*\* Paper Type \*\*\*\*\*

Predefine 1	-> 1 Click
Predefine 2	-> 2 Clicks
Predefine 3*	-> 3 Clicks
Predefine 4	-> 4 Clicks
User-defined 1	-> 5 Clicks
User-defined 2	-> 6 Clicks

\*Enter code, and hold down a Key for 1 sec

## Note

User-defined 1 and User-defined 2 are only available in paper type setting when they are defined or stored in the flash memory

### Save new parameters?

Save the change	-> Long Press
Cancel the change	-> Short Click

# Default code page

This function makes it possible to select the default code page. The following are the code pages available for printing.

## ***For Series i and Series ii***

- PC Code Page 437 (US English)
- PC Code Page 737 (DOS Greek)
- PC Code Page 850 (Multilingual)
- PC Code Page 852 (Slavic)
- PC Code Page 855 (IBM Cyrillic)
- PC Code Page 858 (with Euro symbol)
- PC Code Page 860 (DOS Portuguese)
- PC Code Page 862 (Hebrew)
- PC Code Page 863 (French Canadian)
- PC Code Page 864 (Arabic)
- PC Code Page 865 (Nordic)
- PC Code Page 866 (Cyrillic)
- PC Code Page 874 (Enhanced Thai)
- PC Code Page 932 (Windows–31J)
- PC Code Page 936 (Simplified Chinese)
- PC Code Page 949 (Korean)
- PC Code Page 950 (Traditional Chinese)
- PC Code Page 1250 (Windows Eastern European)
- PC Code Page 1251 (Windows Cyrillic)
- PC Code Page 1252 (Windows Latin #1)
- PC Code Page 1256 (Arabic) – Contextual
- PC Code Page 1256 (Arabic) – Fixed

- PC Code Page Hungary
- PC Code Page Katakana
- PC Code Page Romania
- Unicode support (UTF–16)

***For Series ii only***

- PC Code Page 1254 (Windows Turkish)
- PC Code Page 1255 (Windows Hebrew)
- PC Code Page 950 (HKSCS)

 **Note**

For Asian code pages, code page 936, 949, or 950 replaces code page 932 in the above menu depending on the Asian Mode setting.

To set the Code Page, do the following:

1. To enter into emulation mode from the main menu, press the Paper Feed button twice as short click and hold the button until a beep sound is generated. The following submenu is displayed.

```
***** EMULATION *****
Receipt Sync          -> 1 Click
Default LPI          -> 2 Clicks
Carriage              -> 3 Clicks
Asian Mode            -> 4 Clicks
Code Page             -> 5 Clicks
Special Font          -> 6 Clicks
Compress Pitch Font   -> 7 Clicks
48 Character Mode     -> 8 Clicks
PDF417 Max Columns   -> 9 Clicks
Auto Reset            -> 10 Clicks
Compatible Top Margin -> 11 Clicks
Emulation Mode        -> 12 Clicks
Compatible Barcode Length -> 13 Clicks
Legacy Paper Jam      -> 14 Clicks
Buffered Printing     -> 15 Clicks
Legacy LF + CR        -> 16 Clicks
*Enter code, and hold down a Key for 1 sec
```

 **Note**

Buffered Printing & Legacy LF + CR are supported in Series ii only.

2. To set code page, press feed key 5 times as short click and hold the feed key until the beep sound is generated. The following submenu is displayed.

```
** Code Page **
Code Page 437*       -> 1 Click
Code Page 850        -> 2 Clicks
Code Page 852        -> 3 Clicks
Code Page 858        -> 4 Clicks
More                 -> 5 Clicks
*Enter code, and hold down a Key for 1 sec
```

Selecting **More** displays the following submenu.

Code Page 860 -> 1 Click  
Code Page 862 -> 2 Clicks  
Code Page 863 -> 3 Clicks  
Code Page 864 -> 4 Clicks  
More -> 5 Clicks  
\*Enter code, and hold down a Key for 1 sec

Code Page 865 -> 1 Click  
Code Page 866 -> 2 Clicks  
Code Page 874 -> 3 Clicks  
Code Page 1252 -> 4 Clicks  
More -> 5 Clicks  
\*Enter code, and hold down a Key for 1 sec

Code Page 1256 -> 1 Click  
Code Page Katakana -> 2 Clicks  
Code Page Hungary -> 3 Clicks  
Code Page Romania -> 4 Clicks  
More -> 5 Clicks  
\*Enter code, and hold down a Key for 1 sec

Code Page 928 -> 1 Click  
Code Page 737 -> 2 Clicks  
Code Page 855 -> 3 Clicks  
Code Page 1250 -> 4 Clicks  
More -> 5 Clicks  
\*Enter code, and hold down a Key for 1 sec

Code Page 1251 -> 1 Click  
Code Page 1254 -> 2 Clicks  
Code Page 1255 -> 3 Clicks  
\*Enter code, and hold down a Key for 1 sec

**Save new parameters?**

Save the change -> Long Press  
Cancel the change -> Short Click

# Configuring the Font Size and Logo Settings

Configuring the font size and logo settings for NCR 7199 Series printer may be done using any of the options:

- "[OPOS/JavaPOS Configuration](#)" on the next page
- "[Direct Write Configuration](#)" on page 151

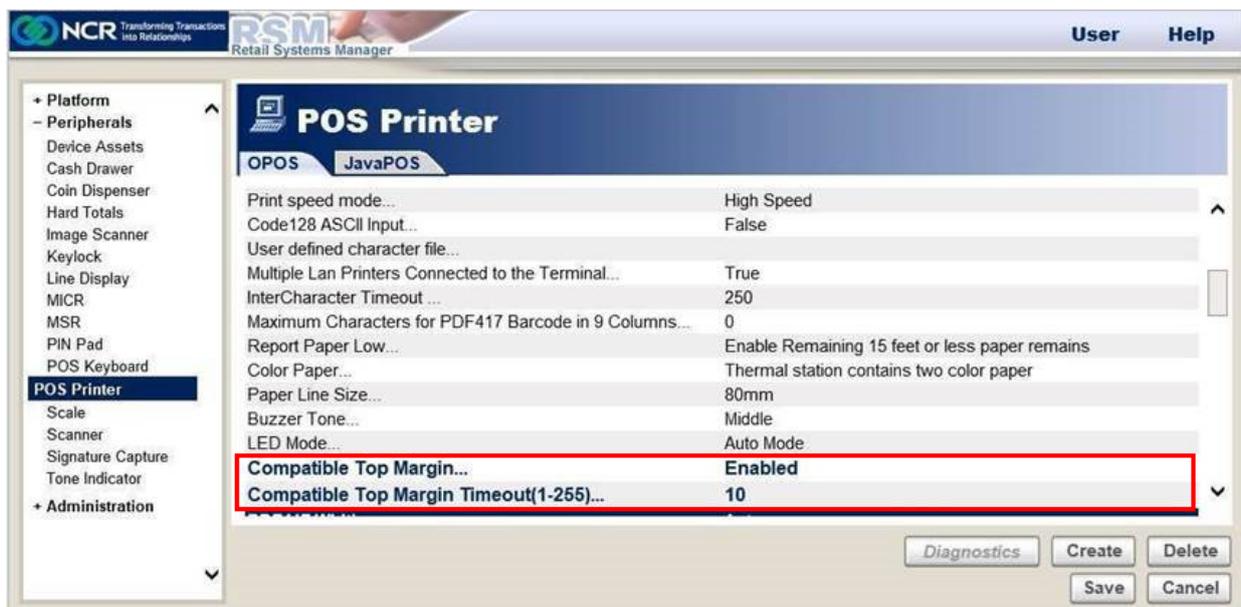
The following table provides information on parameters that can be used to configure the font size and logo settings.

Parameter	Description
Compatible Top Margin	<ul style="list-style-type: none"><li>• When disabled, the physical distance between the thermal head position and the cut position (12.12 mm) becomes the top margin of each receipt.</li><li>• When enabled, the top margin is set to 16.8 mm and the printers always holds 37 raster in the print buffer. The raster images held in the printer buffer are pushed out by the cut command.</li></ul> <p><b>Note</b> By default, this parameter is set to <b>Disable</b>.</p>
Compatible Top Margin Timeout	<p>When Compatible Top Margin is enabled, the user also needs to set the value (0.1 to 25.5 seconds) for the Compatible Top Margin Timeout.</p> <p>This parameter sets the number of seconds before the printer pushes out the data held for Compatible Top Margin. Instead of waiting for the cut command to print the held data, the printer prints the held data after the set timeout value has lapsed.</p> <p><b>Note</b> By default, this parameter is set to <b>Disable</b>.</p>

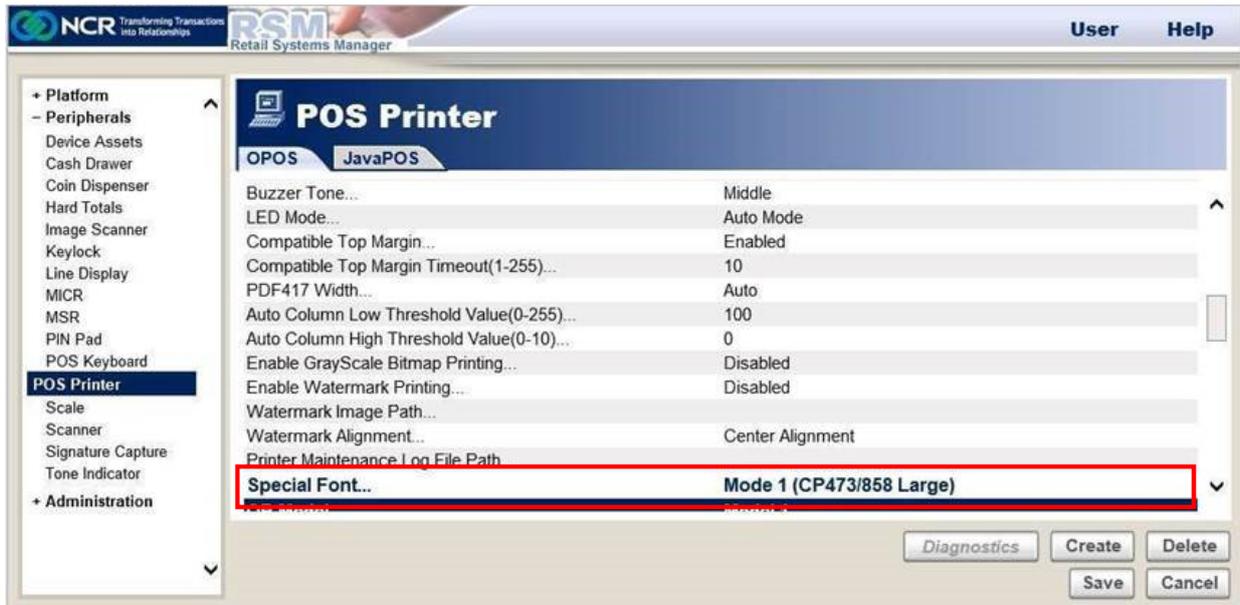
Parameter	Description
Special Font	<p>This parameter provides the following options:</p> <ul style="list-style-type: none"> <li>• CP437/858 Large — the character size of CP437 and CP858 are large, though the font cell is same as original font. In other code pages, it is the same as the original font.</li> <li>• 866 Mini — the size of CP866 Font B is 10(W) x 14(H) dots.</li> <li>• Constructed 874 (refer to "<a href="#">Thai Code Page Function</a>" on page 283)</li> <li>• Contextual 1256 Proportional Pitch (refer to "<a href="#">Arabic Font Support</a>" on page 289)</li> <li>• Contextual 1256 Fixed Pitch (refer to "<a href="#">Arabic Font Support</a>" on page 289)</li> <li>• Greek — CP850 (DOS Latin 1) maps to CP928 (Greek), and CP874 (ISO Thai) maps to CP737 (DOS Greek)</li> <li>• SBCS2 (refer to "<a href="#">SBCS2, SBCS3 Font Support</a>" on page 299)</li> <li>• SBCS3 (refer to "<a href="#">SBCS2, SBCS3 Font Support</a>" on page 299)</li> </ul> <p><b>Note</b> By default, this parameter is set to <b>Disable (Original font)</b>.</p>

## OPOS/JavaPOS Configuration

For OPOS/JavaPOS configuration, settings are configured using the RSM LE configuration tool. The following images show an example of the Compatible Top Margin, Compatible Top Margin Timeout, and Special Font parameter settings.



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For more information, refer to *NCR Retail Controls 3.x UPOS User's Guide for Windows (B005-0000-1619)*. To download the configuration tool, go to [https://www5.ncr.com/support/support\\_drivers\\_patches.asp?Class=External/SelfServPlatform\display](https://www5.ncr.com/support/support_drivers_patches.asp?Class=External/SelfServPlatform\display).

## Direct Write Configuration

For Direct Write configuration, settings are configured at the printer in non-volatile memory. It can be done either through the offline printer configuration menu using the Paper Feed button on the printer or through the 7199 Series/7169 Configuration Utility.

## Printer Configuration Menu

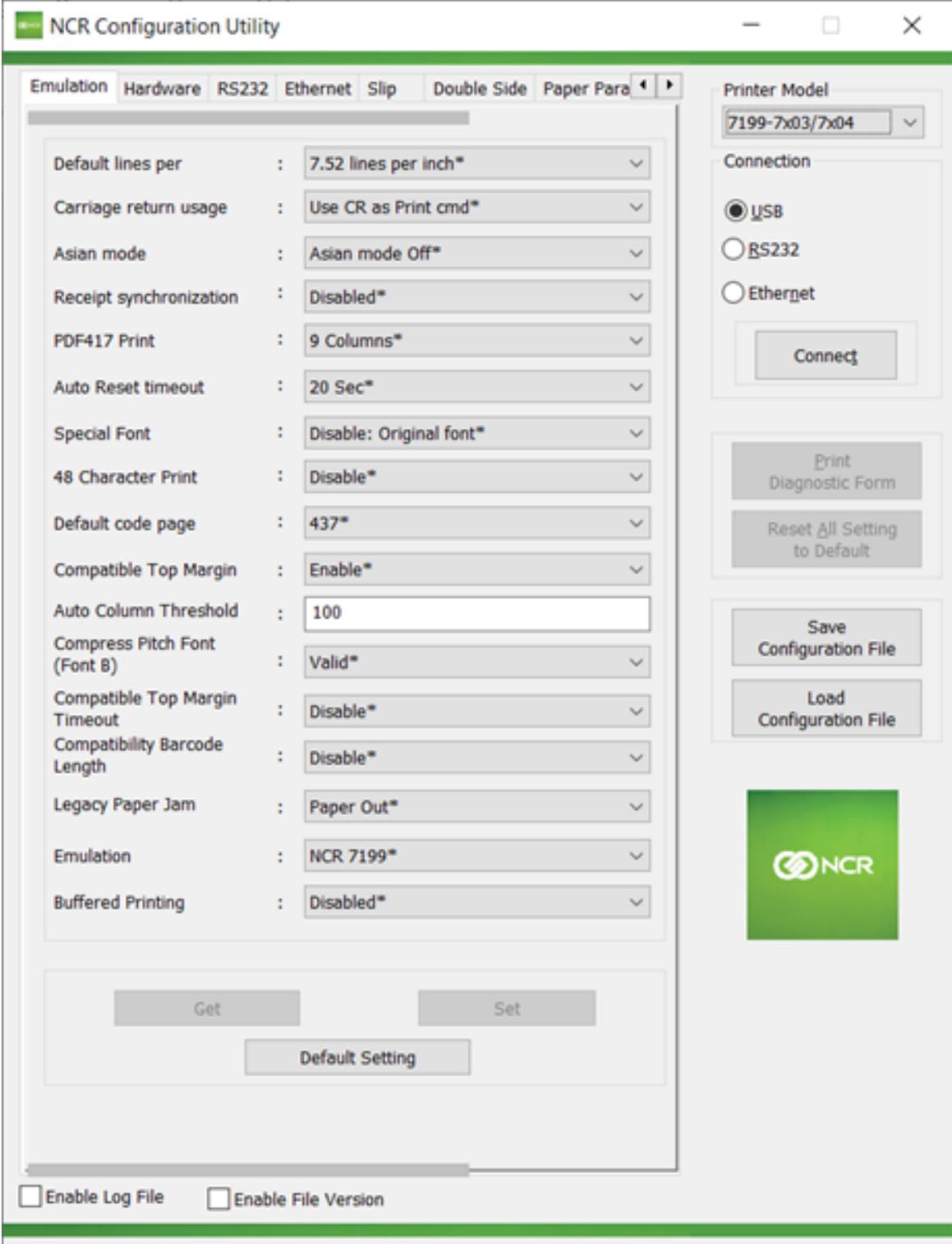
The Configuration Menu provides instructions and setting options interactively as the user goes through the configuration process. The user presses the Paper Feed button according to the number of clicks presented in the menu. For more information on the printer configuration menu, refer to "[Configuring the Printer](#)" on page 73.

To configure the printer, select **Emulation** from the main menu, and then configure the Compatible Top Margin, Compatible Top Margin Timeout, and Special Font parameters. For more information, refer to "[Emulation/Software options](#)" on page 115.

## **7199 Series/7169 Configuration Utility**

The NCR Configuration Utility is used to view and modify settings of the connected printer, to print diagnostic forms, to reset all printer settings to default, and other tasks.

The following image shows an example of the Compatible Top Margin, Compatible Top Margin Timeout, and Special Font parameter settings.



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To configure the printer, connect it to a terminal (through USB, RS-232, or Ethernet connection), and then configure the Compatible Top Margin, Compatible Top Margin Timeout, and Special Font parameters.

For more information on the 7199 Series/7169 Configuration Utility, refer to *NCR Printer Utilities User Documentations* (BCC5-0000-5382) at <https://onlinehelp.ncrvoyix.com>.

To download the configuration utility, go to [https://www5.ncr.com/support/support\\_drivers\\_patches.asp?Class=External/Peripherals\Printer\7199\display](https://www5.ncr.com/support/support_drivers_patches.asp?Class=External/Peripherals\Printer\7199\display).

# Runtime (Level 2) Diagnostics

Runtime diagnostics occur during normal printer operation. When the following conditions occur, the printer automatically turns off the appropriate motors and disables printing to prevent damage:

- Paper out
- Cover open
- Knife unable to home
- Print head too hot
- Power supply voltage out of range

The Printer Status (Green) LED signals when these conditions occur and indicates the state or mode of the printer.

The Printer Status LED has 3 colors: green, amber, and red.

LED indication for Printer Status LED is shown as below.

# Printer Status LED error blink pattern

Basic policy of blinking pattern for errors at Printer Status LED in Auto Mode is as follows:

- Red color is used for an unrecoverable error.
- Amber color is used for a recoverable error.
- Blink cycle is 2Hz.
- Number of blinks depends on the block where an error occurs.

PCB	1 Blink
Thermal Head	2 Blinks
Cover	3 Blinks
Paper block	4 Blinks
Print block	5 Blinks
Cutter block	6 Blinks

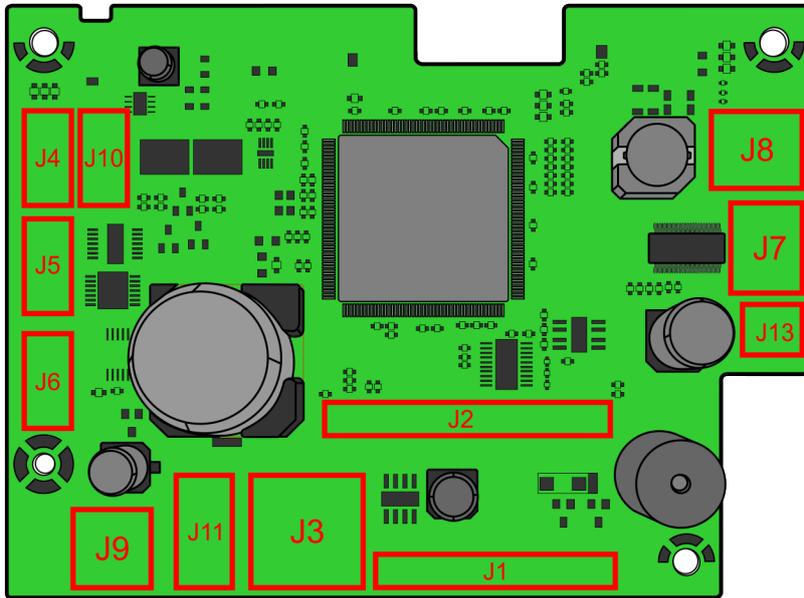
In “User Mode” of Printer Status LED, a system controls LED by “LED Control Request”, LED pattern and the indication timing are specified by a system.

Errors	Color	Bezel LED
PCB Error	GREEN	1 Blink Pause 5 seconds
Paper Low	GREEN	4 Blinks Pause 5 seconds
Thermal Head Overheat	AMBER	2 Blinks Pause 5 seconds
Cover Open	AMBER	3 Blinks Pause 5 seconds
Paper End	AMBER	4 Blinks Pause 5 seconds
Printer Jam	AMBER	5 Blinks Pause 5 seconds
Cutter Error	AMBER	6 Blinks Pause 5 seconds

Errors	Color	Bezel LED
Blown Fuse	AMBER	6 Blinks Pause 5 seconds
Memory Error	RED	1 Blink Pause 5 seconds
Thermal Head Disconnected	RED	2 Blinks Pause 5 seconds
Thermal Head Abnormal Temperature	RED	2 Blinks Pause 5 seconds

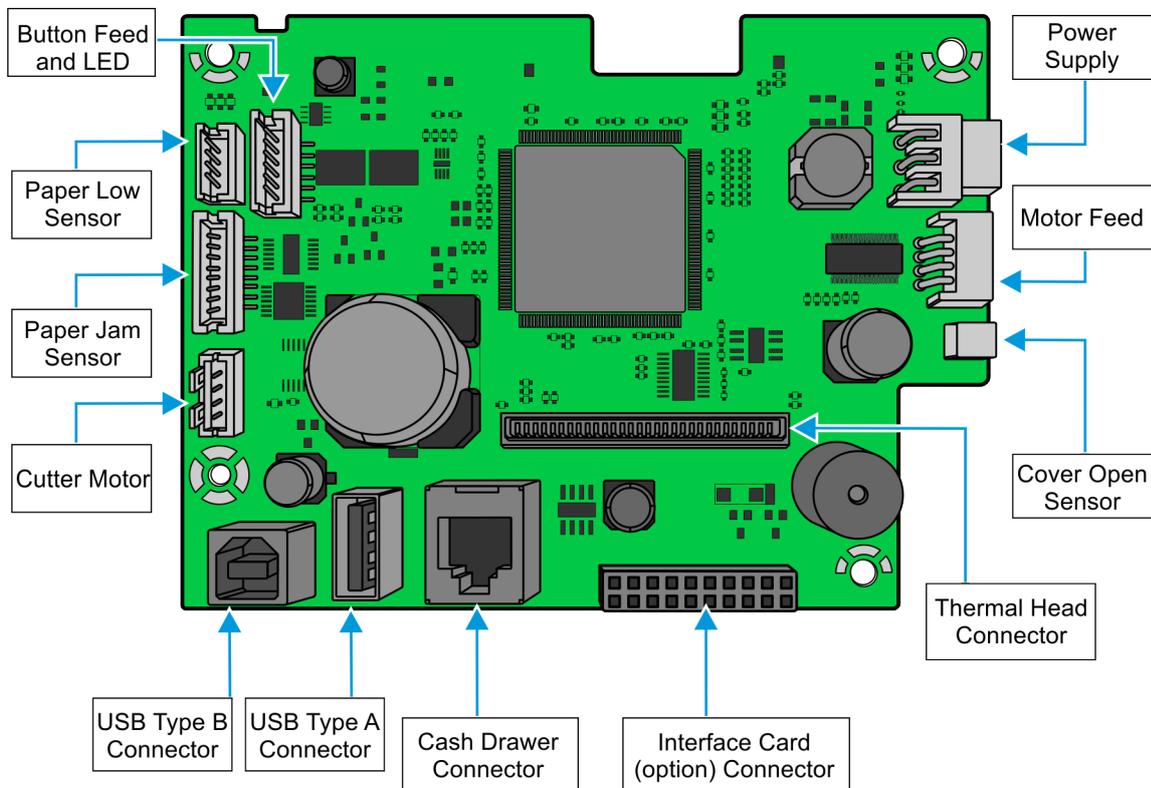
# PC Board connector locations and designations

## Series i



CCP-71039

## Driver board



CCP-71040

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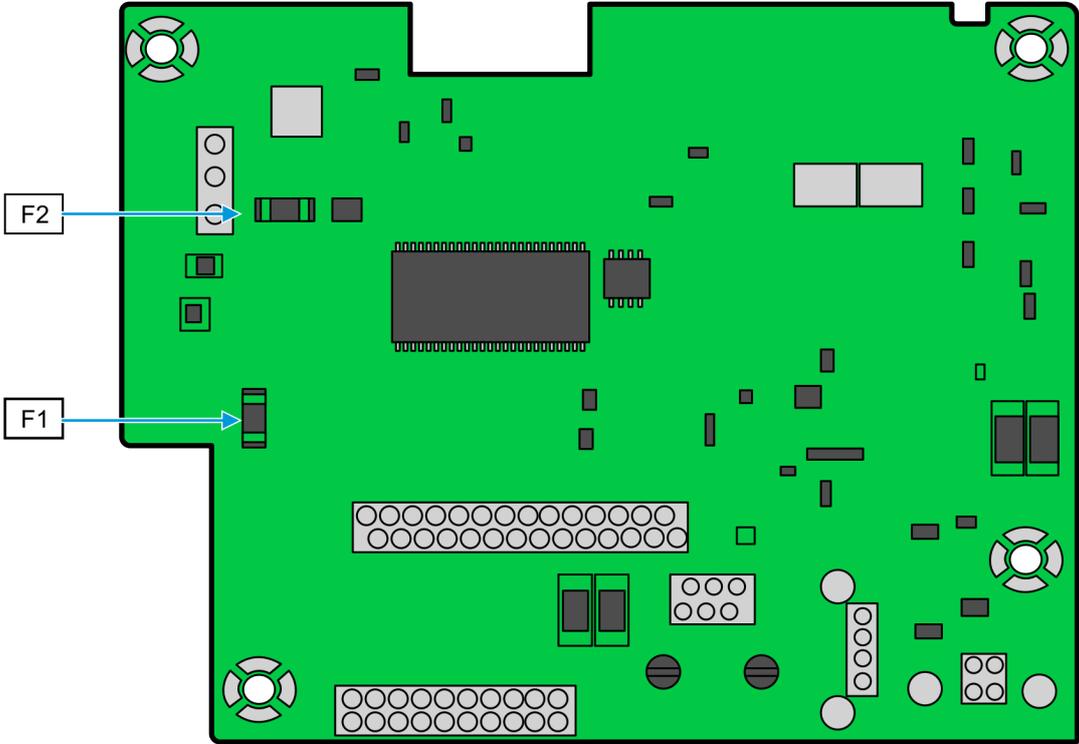
# Series ii



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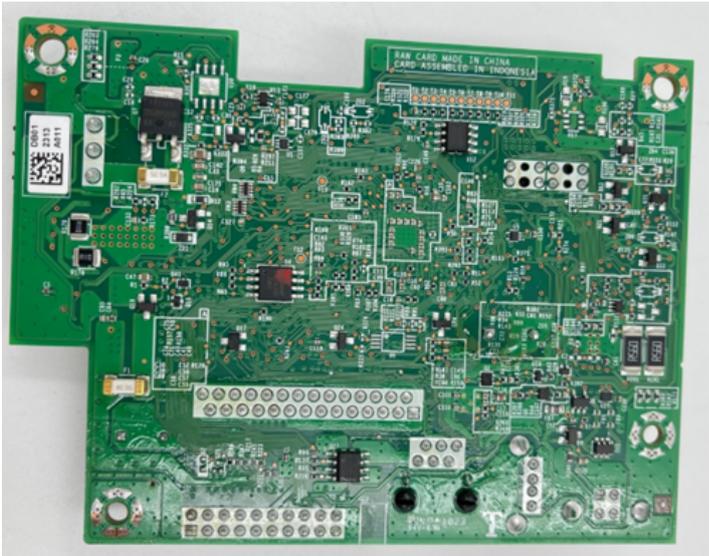
# Fuse location and information

## Series i



CCP-71541

## Series ii



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Refer to the following table for more information:

Location	Part Description	Specifications
F1	25H3000G (skygate) or equivalent	125V / 3A
F2	25H5000G (skygate) or equivalent	125V / 5A

# Communication

---

In order for a receipt to be printed, a program must be in place that translates the data from the host computer into a language that the printer can understand. This program must tell the printer exactly how to print each character. This chapter describes how to create such a program or modify an existing one.

# Interface

For the printer to communicate with the host, a communication link must be set up. The NCR 7199 Series Model supports the industry standard USB communication interface. This interface has a protocol associated with it that the host computer must understand and adhere. The printer also supports RS–232C communications.

Only when the interface parameters are matched and the proper protocol is used will the host and the printer be able to communicate.

The NCR 7199 Series Ethernet Model supports the Ethernet communication interface.

# Sending commands

Once the communication link is established, commands can be sent to the printer. This section describes how to send commands to the printer using DOS and BASIC. This section does not take into account the necessary protocol, but is meant as a general introduction to how the printer functions.

## Using BASIC to send commands

In BASIC, printer commands are sent as a string of characters preceded by the LPRINT command.



### Example

```
LPRINT CHR$(&H0A)
```

This sends the hexadecimal number 0A to the printer, which causes the printer to print the contents of its print buffer. Previously sent commands tell the printer exactly how this data should appear on the paper.



### Example

```
LPRINT CHR$(&H12); "ABC"; CHR$(&H0A)
```

This sends the Hex numbers 12 41 42 43 0A to the printer. This causes the printer to set itself to double wide mode (12), load the print buffer with "ABC" (41 42 43), and finally, print (0A). The communication link that the BASIC program outputs to must be matched to that of the printer.

# RS-232C Interface (Option)

The RS-232C version of the NCR 7199 Series printer offers the standard options which are selectable in the Diagnostic mode. For more information, refer to "[Communication Interface Modes](#)" on page 108.

## Print speed and timing

The fast speed of the printer requires the application to send data to the printer at least as fast as it is printed. This application must also allow receipt lines to be buffered ahead at the printer, so the printer can print each line immediately after the preceding line, without stopping to wait for more data. Ideally, the application will send all the data for an entire receipt without pausing between characters or lines transmitted.

If the application sends data at 9600 baud and pauses between lines for as little as 50 milliseconds, the printer will never be able to print at full speed. But if the application sends data at 19.2 K baud and does not pause between lines, the printer will be able to print at its full speed of 1020 lines/minute.

The following table shows that with a pause of 50 milliseconds after each line, the transmit time equals or exceeds the print time, slowing down the printer, regardless of the baud rate.

Char./Line	Lines/Receipt	Transmit Time: (9600 Baud)	Transmit Time: (19.2 KBaud)	Print Time
20	20	1.4 seconds	1.2 seconds	0.2 seconds
20	40	2.8 seconds	2.4 seconds	0.4 seconds
44	20	1.88 seconds	1.44 seconds	0.2 seconds
44	40	3.76 seconds	2.88 seconds	0.4 seconds

The following table shows that with no delay between lines, the transmit time is much less than the print time, allowing the printer to print at full speed.

Char./Line	Lines/Receipt	Transmit Time: (9600 Baud)	Transmit Time: (19.2 KBaud)	Print Time
20	20	0.4 seconds	0.2 seconds	0.2 seconds
20	40	0.8 seconds	0.4 seconds	0.4 seconds
44	20	0.88 seconds	0.44 seconds	0.2 seconds
44	40	1.76 seconds	0.88 seconds	0.4 seconds

## RS-232C technical specifications

This section describes the pin settings for the connectors and the RS-232C interface parameters. The RS-232C parameters can be selected in the Diagnostic mode. The RS-232C parameters must match the host parameters.

## Setting extra RS-232C options

The following extra options are available for the RS-232C Interface:

- Data errors
- Print ? for data errors (default)
- Ignore data errors

# Ethernet Interface (Option)

The Ethernet interface uses either 10BASE-t, 100BASE-TX protocol. The Ethernet version of the NCR 7199 Series printer offers the web configuration, which configure the Ethernet settings through a Web browser. For more information, refer to the "[Communication Interface Modes](#)" on page 108.

## Protocol

Application Layer	TCP Socket, UDP Socket, SNMP, DHCP, HTTP
Transport Layer	TCP, UDP
Network Layer	IP, ICMP, ARP
Data Link Layer	CSMA/CD
Physical Layer	10BASE-t, 100BASE-TX (IEEE802.3 Conforming) Auto negotiation 10/100Mbps Full/Half Duplex

## TCP socket

It transfers printing commands and data, several status commands and those responses by direct socket communications.

Port number	9100 (Default)
Maximum simultaneous sessions	1
Maximum simultaneous connections	6
Time out	120 seconds (Default)

## UDP socket

It transfers real time commands and those responses.

Port number	3000 (Default)
-------------	----------------

# SNMP

SNMP is used by the SNMP manager to acquire the printer information and status from SNMP agent (Printer).

SNMP version	SNMP v1 (RFC1157) compliant
Transport protocol	UDP/IP
MIB support	Part of MIB-II (RFC1213) Part of HOST Resource MIB Part of Printer MIB
PDU support	Get Request Get Next Request Get Response Trap
Port number of Server	161
Port number for Trap transmit	162

# DHCP

DHCP is used by the DHCP client (Printer) to acquire IP address, Subnet mask, and Gateway address from the DHCP server.

Transport protocol	UDP/IP
--------------------	--------

# HTTP

HTTP is used to configure the network setting by WEB Provision.

HTTP version	V1.1
Transport protocol	TCP/IP
Items to be able to configure	IP address Subnet mask Default Gateway DHCP DHCP address TCP max. connection Ethernet Physical LAN Speed LAN Real Time Command Protocol Link Down Timeout TCP idle Timeout TCP Port number UDP Port number SNMP Trap 1 SNMP Trap 2 SNMP Community (R/W) SNMP Trap 1 Community SNMP Trap 2 Community SNMP Trap 1 IP Address SNMP Trap 2 IP Address

# LPR Socket

LPR Socket is TCP Communication port by LPR.

Port number	515
Maximum simultaneous sessions	1
Maximum simultaneous connections	1
Time out	6 seconds

 **Note**  
The LPR socket settings is available in NCR 7199 Series ii only.

# TCP socket communication

The communication procedure is designed as follows.

The TCP socket is used to send commands and data related to printing. And, it is also used to send and receive the batch status commands and its statuses.

When "Ethernet RTC Protocol" setting is TCP, it is used by sending and receiving of Real Time command,

1. Client PC connects to the TCP socket via the defined port number of the printer.
2. Client PC transmits the commands and the date of the printer.
3. When the printer receives the batch status command, the response is transmitted to client PC.

# UDP socket communication

The UDP socket is used by sending and receiving of Real Time Command.

This is effective in UDP port 3000 when "Ethernet RTC Protocol" setting is UDP.

1. Client PC connects to the UDP socket via the defined port number of the printer.
2. Client PC sends the status command and receives the status from the printer via UDP socket.

# Multiple connection

It is possible to connect with multiple clients at the same time. However, more than 7 connections will be rejected.

# Connectors

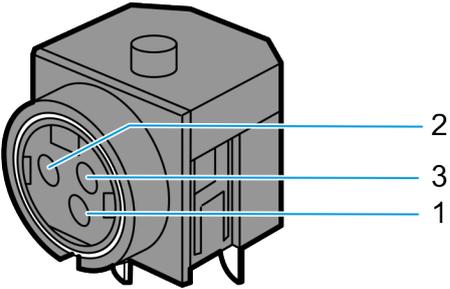
This section provides information on the following NCR 7199 Series cable connectors:

- Power Cable
  - ["Power cable connector"](#) on the next page
- USB Cable
  - ["USB cable connector"](#) on page 174
  - ["Connector pin assignment"](#) on page 174
- RS–232C
  - ["RS–232C communication connector pin assignments"](#) on page 175
- Ethernet
  - ["Ethernet connector"](#) on page 176
  - ["Connector pin assignment"](#) on page 176
- Cash Drawer
  - ["Cash drawer connector and pin assignments"](#) on page 177

# Power cable connector

The control cards received 24VDC  $\pm 10\%$  power via a 3-pin Mini-DIN plug, which mates with an integral shielded cable from the power supply unit.

The power connector is WIESON GA1009-3AT1N1 (or equivalent) with the following pin out:



1	+ 24VDC
2	Power Ground
3	NC
Shell	Frame Ground

CCP-71542

# USB cable connector

USB I/F is mounted on main card as default. There are 2 ports. The first port is for the HOST function with Type A connector, and the second port is for the Device function with Type B connector.

It does not support USB host port and device port at the same time.

## Note

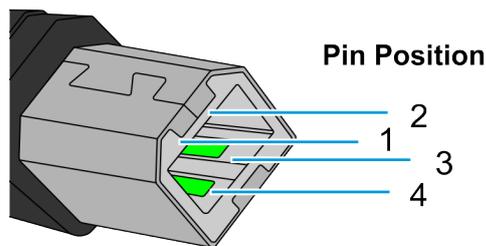
The USB version is Version 2.0 High speed.

## Connector pin assignment

The USB I/F connector is "B" Plug type for the Device function, and "A" plug type for the Host function.

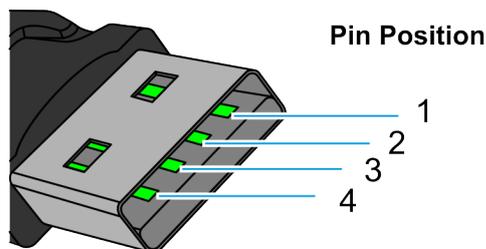
### Type B connector

1	VBUS
2	D-
3	D+
4	GND
Shell	Shield



### Type A connector

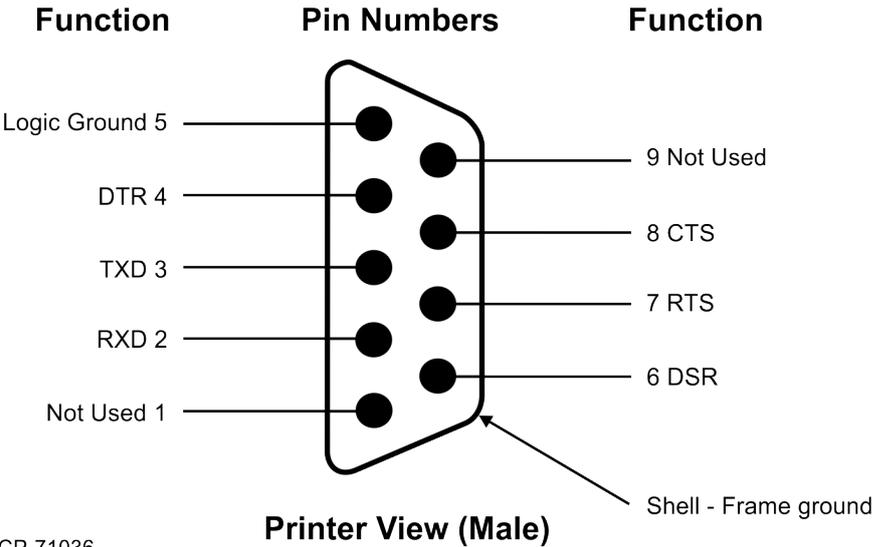
1	VBUS
2	D-
3	D+
4	GND
Shell	Shield



CCP-71041

# RS-232C communication connector pin assignments

The serial I/F connector is 9pin D-SUB Male type connector with the following pin assignments:



CCP-71036

# Ethernet connector

The following specification is for the model equipped with Ethernet connection.

## Standard

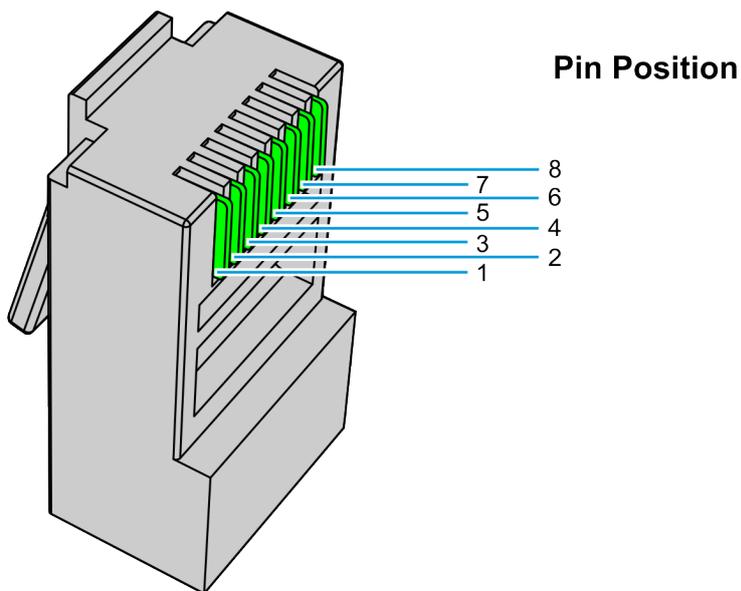
Fully integrated IEEE 802.3/802.3u–100 Base–TX/10 BASE–T Physical Layer

## Speed

Auto Negotiation: 10Mbps/100Mbps, Full/Half Duplex

## Connector pin assignment

The Ethernet I/F connector is an 8P8C modular connector (usually called RJ45) with the following pin assignments:



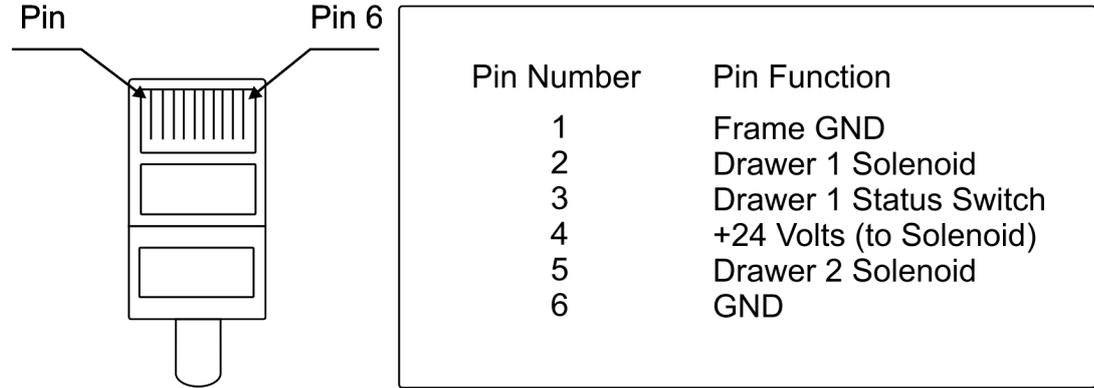
CCP-71038

Pin Position	Signal Description
1	TX+
2	TX–
3	RX+
6	RX–

# Cash drawer connector and pin assignments

The Cash drawer connector is located at the rear of the printer.

The Cash drawer connector is a 6-pin modular type connector with the following pin assignments:



CCP-71037

# Command

---

## Command Conventions

The different features and functions provided by the printer are controlled by sending commands from the host computer to the printer. This chapter describes the commands that are supported by the printer. The printer commands are made up of one or more bytes of data starting with a command control code followed by its supporting parameters.

Commands control all operations and functions of the printer, including the following:

- Drawing by text, image, bar—code, and so forth.
- Controlling knife cut, cash drawer, and so forth.
- Retrieving the printer status and information.
- Configuring the printer to customize.

Unless otherwise noted, any of the commands may be used in any combination to communicate with the printer from a program in a host computer.

To allow the graceful handling of commands that may be available in other printers but are not available in this printer, some commands will be listed and described but identified as "not implemented". If the printer receives one of these "not implemented" commands, the command and its supporting operands will be discarded. Any other data bytes, including unrecognized commands, are sent to the print buffer as data, and the printer will attempt to print the data when it is instructed to print the buffer.

For more information and for the list of commands, refer to the *NCR 7199 Series Thermal Receipt Station Printer Programmer's Guide* (BCC5-0000-5170).

# Flash Utility Information

---

The following instructions provide information on how to use the Flash Utilities provided for the NCR 7167 series, 7168 series, 7197 series, 7198 series, 740x-K59x series, 734X series, 7649–F301, and 7199 series printers. These instructions cover the utilities provided for Windows GUI and Windows Command Line.

The following files comprise the utilities:

- `TseFlash.exe`—Windows GUI version of the Flash Utility
- `TseFlash.com`—Windows Command Line Flash Utility

# File configurations

The following kinds of firmware loads can be sent to the printer:

- Boot Firmware
- Boot Firmware for Ethernet
- Main Firmware
- Single Byte Font
- Two Byte Receipt Font
- Two Byte Slip Font

The Single Byte Font file has a file extension of `.sfn`. It is the font used for OEM Codepages such as 437, 850, 858, and so forth, which require only a single byte of data to define the character to be printed. The Two Byte Font files (Separately Defined for Slip & Receipt) have a file extension `.dfn`. These are used to define the following Code Pages:

- 932 – Japanese
- 936 – Simplified Chinese
- 949 – Korean
- 950 – Traditional Chinese

It is very rare for the Single Byte Font to have to be updated. Since there is only enough memory in the printer for one of the Two Byte Fonts to be loaded at any time, the Two Byte Font will typically need to be loaded prior to installation in the appropriate country.

## Note

The Font files, both Single and Two byte, should be loaded into the printer after the Boot and Main firmware have been loaded.

# Printer languages cross-reference

## *Series i*

Font Type	Print Station	File Name
ANK	Receipt	7199_SBCS_V2113.sfn*
Arabic Font	Receipt	
Japanese CP932	Receipt	7199_DBCS_V2206.sfn*
Korean CP949	Receipt	
Simple Chinese CP936	Receipt	
Traditional Chinese CP950	Receipt	

## *Series ii*

Font Type	Print Station	File Name
ANK	Receipt	7199ii_SBCS_V3101.sfn *
Arabic Font	Receipt	
Japanese CP932	Receipt	7199ii_DBCS_V3201.sfn*
Extended Korean CP949	Receipt	
Simple Chinese CP936	Receipt	
Traditional Chinese + Hong Kong Supplementary Character Set [HKSCS] - CP950	Receipt	

 **Note**

- The noted font files are included on LPIN A370-0050-0000 or are available from the NCR website under Retail Solution Specific Printer Firmware.
- The asterisk (\*) denotes that the printer is preloaded with these fonts from the factory.
- When Asian fonts are to be used, select the appropriate Asian Code Page in the diagnostic set and also enable the Asian Mode.
- The above file names are latest as of 10<sup>th</sup> Jan 2017. Based on the new modification, the filenames may change.
- 7199\_SBCS\_V2113.sfn and 7199ii\_SBCS\_V3101.sfn are inclusive of ANK and Arabic Font.
- 7199\_DBCS\_V2201.dfn and 7199ii\_SBCS\_V3201 are inclusive of Japanese CP932, Korean CP949, Simple Chinese CP936, and Traditional Chinese CP950.

# Windows Command Line Firmware Update Utility

The Windows Command Line version of the Flash Utility is provided to allow batch mode of operation in a Windows XP environment. If you issue a call to **TseFlash.com** with no parameter, you will get the following output that explains the parameters.

## Note

This utility requires the **TseFlash.exe** to be in the same directory. **TseFlash.com** is just a shell that sends the command line options to **TseFlash.exe** to process.

```
*** TseFlash.com Ver 3.1 ***
```

Thank you for using TseFlash Flash Memory Writer command line interface utility!

```
TseFlash [model] [download type] [COM] [parameter] [file]
[check model(opt)] [pr int(opt)] [status(opt)]
[ErrorTimeOut(opt)]
```

[model]--> Selections for the model:

```
[7167] [7167-X115] [7167-X035] [7167-5XX1/6XX1/7XX1] [7167-
8011-9001] [7168] [7168-23X3/22X3/1223] [7168-5XX3/6XX3]
[7197] [7197-5XX1/6XX1/7XX1/9XX1] [7198] [7649-F301] [K8]
[K590] [7401-K592] [7402-K592] [7346-F306] [734X-F307/7125]
[734X-F309] [SSCO6-1ST/2st] [7199]
```

[download type] --> Selections for the download type:

```
/f - Download IMF program for [7168-23X3/22X3/1223],
7167-6321-9001.
```

```
/m - Download firmware main program.
```

/i - Download firmware IPL program.

/l - Download firmware IPL LAN program for 7197-5XX1/6XX1/7XX1/9XX1.

/a - Download ANK font or combined ANK & CP932 font for 7167, 7167-X115, 7167-X035, 7167-5XX1/6XX1/7XX1, 7167-8011-9001, 7168, 7168-5XX3/6XX3, 7197, 7198, K590, 7402-K592, 7342-F306.

/s - Download ASIAN font for 7197, K590, 7401-K592, 7402-K592, 7342-F306, 7346-F306.

/rs - Download Receipt ASIAN Font for 7167 & Receipt 2 Byte for 7168, 7168-5XX3/6XX3, 7198, 7167-5XX1/6XX1/7XX1, 7167-8011-9001

/ss - Download Slip ASIAN font for 7167 & Slip 2 Byte for 7168, 71618-5XX3/6XX3, 7167-51/6XX1/7XX1, 7167-8011-9001

/sb - Download SBCS font for 734X-F307/7125, 734X-F309, 7649-F301, 7197-5XX1/6XX1/7XX1/9XX1, K8, SSC06-1ST/2ST, 7199

/db - Download DBCS font for 734X-F307/7125, 734X-F309, 7649-F301, 7197-5XX1/6XX1/7XX1/9XX1, SSC06-1ST/2ST, 7199

/t - Download Table file for SSC06-1ST/2ST, 7199

/c - Printer Configuration Table file for 7199 (CPMI is not supported)

[com]--> Selections for the COM port, CPMI, IBMUSB, HID (Only K8) or LAN:

/COMX Where X is any valid integer within 1-50.

/CPMI CPMI Interface.

/IBMUSB 4690 USB (HID) Interface.

/LAN Ethernet Interface.

/WIFIWireless Interface.

/HID Only for K8 printers.

/NHPI Only for 7199 printers.

/PRTR Only for 7199 printers.

[parameter] --> Selections for interface parameter  
(Only for RS232 and Ethernet interface):

For RS232 Only: Please key in the Baud Rate,  
Parity and Stop Bit

- Baud Rate Selection:

/[[115200] | [57600] | [38400] | [19200] |  
[9600]

- Parity Selection:

/[none] | [even] | [odd]

- Stop Bit Selection:

/[1] | [2]

For WiFi / Ethernet Only: Please key in the IP  
Address

- IP Address Selection:

/[xxx.xxx.xxx.xxx]

- xxx is a number from 0 to 255

For CPMI, IBMUSB and HID is ignore

[file] --> Selections for the filename:

Any valid binary file with extension \*.mfw | \*.sfn  
| \*.dfn | \*.ipl | \*.lan | \*.bin (Only for K8) | \*.tbl (Only  
for

SSCO6-1ST/2ST and 7199) | \*.cfg (Only for 7199)

[print(opt)] --> Selections for the print (Optional Parameter):

/print (default) Print printer configuration form.

/noprint Bypass printing printer configuration form.

[status(opt)] --> Optional for Return Status (Optional Parameter):

/noretstat (default) Utility will not return status code.

/retstat Utility will return status code.

[ErrorTimeout(opt)] --> Failsafe: Max Time Allowed for Called Exe (Optional Parameter):

(ONLY USED BY TseFlash.COM

/ErrorTimeout=xxx (minimum=420) xxx is number of Seconds - limit 3600.

Information : Please use RS232 Interface, when switching

from ION <=> NON ION

If you fail to use the correct parameters, an error message will be displayed similar to the following error:

Error: Too few / many command line parameters!

The following is an example of a command line:

TseFlash.com /7197-5X01/6X01 /m /COM1 /115200 /none /1  
SP2M0609.MFW /noskip /print /retstat

This invokes the GUI interface shown in the next section and displays a progress bar indicator. The same is seen if you run the program through the GUI Windows GUI Printer Firmware Update Utility.

The printer firmware can be updated from the host terminal, a laptop, or a PC by running the `TSEFlash.exe` utility. The three file formats for the flash firmware are the following:

- IPL—Boot Firmware
- LAN—Boot Firmware for LAN
- MFW—Main Firmware

Examples of the firmware are the following:

- `7198RoL_V2001.ip1`—7198 RoL Printer Boot Firmware
- `7198RoL_V2001.lan`—7198 RoL Printer Boot Firmware for LAN
- `7198RoL_V5464.mfw`—7198 RoL Printer Main Firmware

#### Note

These are examples only. The firmware version varies based on the printer and as updates are provided.

To re-flash a firmware into the printer, unzip the flash utility and the flash files being used into a directory on the hard disk.

## Using TseFlash.exe utility

On the host terminal or PC running Windows, execute the utility `TSEFlash.exe***` to start the program. A window similar to the example below will appear on the screen.

#### Note

The flash utility shown is for demonstration purposes only. Visit NCR Support Site for the latest release.

# Configuration Network

---

## Overview

The printer provides the Ethernet Network Configuration page in a Web page (respondent HTTP/1.0 and 1.1)

The Configuration page can be accessed by connecting the Host PC to the printer via the network and inputting the printer's IP address in the Web browser address bar.



### Example

`http://192.168.1.1/main.html`) in the Web browser

The Host PC needs to be set with the correct network configuration (IP address, Subnet mask address, and so forth) to connect to the printer.

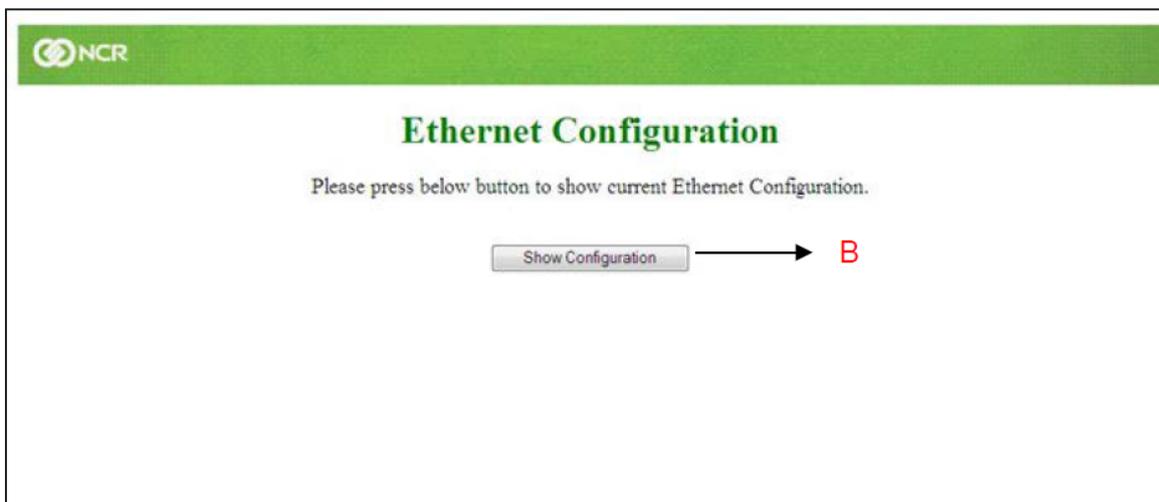
Format: `http ://(IP address for the printer)/`

# Display Format of Configuration Setting Page

This section discusses the display format of the Ethernet Network Configuration page.

## Top page

On the Top page, the *Show Configuration* button is displayed. when it is selected, the Ethernet Configuration setting page is displayed with the current configuration.



# Ethernet Configuration setting page

On Ethernet Configuration setting page, users can view or change the Ethernet configuration.

To change the Ethernet configuration, do the following:

1. Change the values by doing any of the following:
  - Enter a value in the corresponding text box.
  - Select an option from the drop–down list.
2. Select **SAVE CONFIGURATION** to save the new Ethernet configuration in the printer ROM.

## Note

- If all values are valid and the saving process is successful, the *Save Configuration Message* is then displayed. If any value is invalid, the new Ethernet configuration is not saved and an error message is then displayed. To check and retry changing the values, select **Top Page**.
- To set the values to factory default, select **FACTORY DEFAULT**, and then select **SAVE CONFIGURATION**.

## Ethernet Configuration

Please set the configuration and press SAVE CONFIGURATION button.

→ **Set default value**

### TCP/IP - Configuration

[ IP ]		
IP Address	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="1"/> <input type="text" value="1"/>	Value(0-255): Valid address
Subnet Mask	<input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/>	Value(0-255): Valid Mask
Default Gateway	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	Value(0-255): Valid address
DHCP	Enabled ▾	Select option
DHCP Request IP Address	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	Value(0-255): Valid address

[ TCP/UDP ]		
Number of TCP Connections	<input type="text" value="1"/>	Value(1-6)
Time of Time-out (for Link Down)	<input type="text" value="120"/>	Value(1-120 minutes) : 0=No timeout
Time of Time-out (for Idle)	<input type="text" value="2"/>	Value(1-120 minutes) : 0=No timeout
Real Time Command	TCP ▾	Select option
TCP port	<input type="text" value="9100"/>	Value(1024-65535)
UDP port	<input type="text" value="3000"/>	Value(1024-65535)

[ Ethernet ]		
MAC Address	80-00-0e-4e-40-08	Unchangeable
Physical Layer	Auto ▾	Select option

### SNMP - Configuration

[ Community ]		
Read Only	public	Unchangeable
Read/Write	<input type="text"/>	Maximum 16 character

[ SNMP Trap1 ]		
TRAP	Disabled ▾	Select option
IP Address	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	Value(0-255): Valid address
Community Name	<input type="text"/>	Maximum 16 character

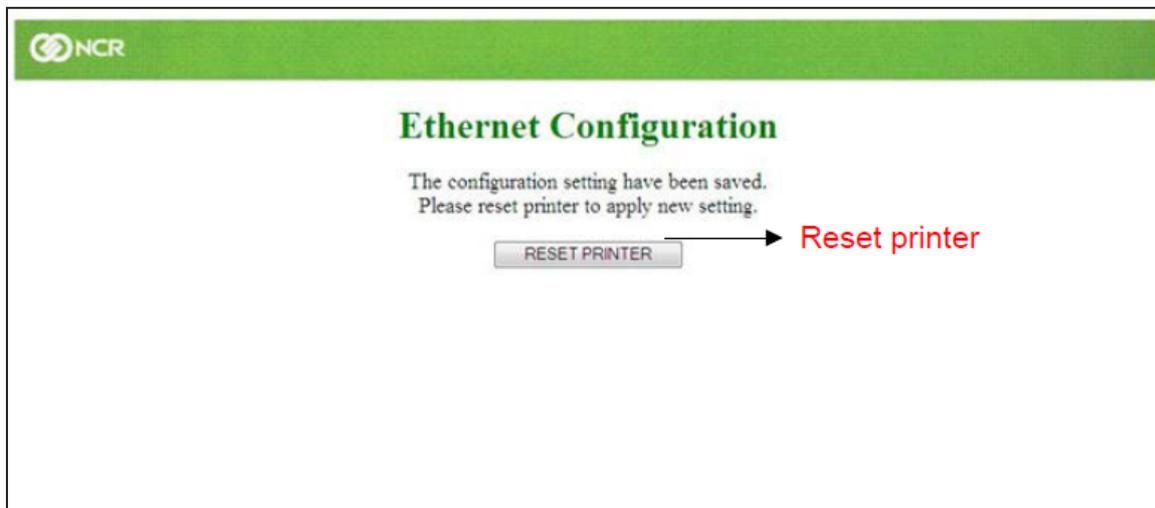
[ SNMP Trap2 ]		
TRAP	Disabled ▾	Select option
IP Address	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	Value(0-255): Valid address
Community Name	<input type="text"/>	Maximum 16 character

→ **C**

[Top Page](#)

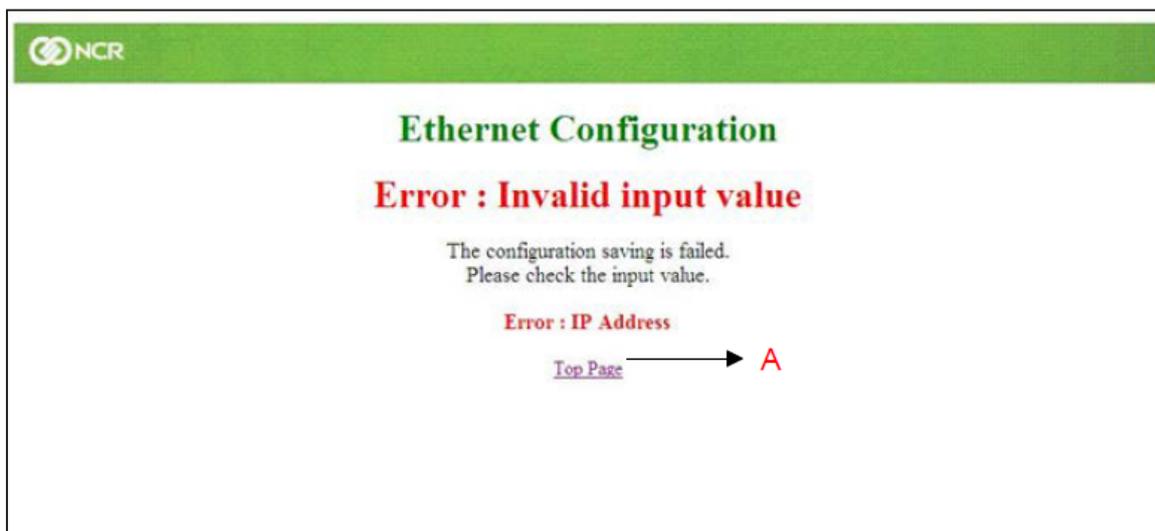
## Save Configuration message page

On the Save Configuration Message page, users are informed that the new Ethernet configuration is successfully saved. To apply the new configuration to the printer, select **RESET PRINTER**.



## Error Message page

On the Error Message page, users are informed that the new Ethernet configuration is not saved. Error details are also displayed. To check and retry changing values, select Top Page.



# TCP/IP Setting

This section provides information on configuration parameters and default values for the TCP/IP setting.

## IP setting

[ IP ]					
IP Address	<input type="text" value="192"/>	<input type="text" value="168"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	Value(0-255): Valid address
Subnet Mask	<input type="text" value="255"/>	<input type="text" value="255"/>	<input type="text" value="255"/>	<input type="text" value="0"/>	Value(0-255): Valid Mask
Default Gateway	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Value(0-255): Valid address
DHCP	Enabled ▾				Select option
DHCP Request IP Address	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Value(0-255): Valid address

Items	Default value	Detail
IP Address	192.168.1.1	Set Printer IP Address. This IP Address is effective when Get IP Address is Manual.
Subnet Mask	255.255.255.0	Set Printer Subnet Mask. This Subnet Mask Address is effective when Get IP Address is Manual.
Default Gateway	0.0.0.0	Set Printer Default Gateway. This Subnet Mask Address is effective when Get IP Address is Manual.
Get IP Address	Manual	Select method of acquiring IP Address. Selectable method is Manual or DHCP base on the Printer Dip Switch Setting.  If Printer Dip Switch 1 OFF and Dip Switch 2 OFF, Manual mode is selected.  If Printer Dip Switch 1 ON and Dip Switch 2 ON, DHCP mode is selected.
DHCP IP Address	0.0.0.0	Set requesting specific IP address to DHCP server. If set 0.0.0.0, DHCP sever allocates printer IP address automatically.

### Note

IP addresses that cannot be set with Ethernet model printer are the following:

- 255 . 255 . 255 . 255 (Broad cast address)
- Local loopback address
  - 127 . \*\*\* . \*\*\* . \*\*\*—this is the IP Address to send to oneself and \*\*\* is any value from 0 to 255.

## Obtaining IP address automatically

When "DHCP" is enabled, the printer automatically gets the IP address, the Subnet Mask, and the Default Gateway from a DHCP server. If the printer fails to automatically get the IP address, it uses the same IP address as the Manual mode. The DHCP allocated IP address can be seen on the Diagnostics Form of the connected printer.

# TCP/UDP setting

[ TCP/UDP ]		
Number of TCP Connections	<input type="text" value="1"/>	Value(1-6)
Time of Time-out (for Link Down)	<input type="text" value="120"/>	Value(1-120 minutes) : 0=No timeout
Time of Time-out (for Idle)	<input type="text" value="2"/>	Value(1-120 minutes) : 0=No timeout
Real Time Command	<input type="text" value="TCP"/>	Select option
TCP port	<input type="text" value="9100"/>	Value(1024-65535)
UDP port	<input type="text" value="3000"/>	Value(1024-65535)

Items	Default Value	Detail
Number of TCP Connections	1	Select the maximum number hosts that can be connected. (1–6)
Time of Time-out (for Link Down)	120 min	Set time of time-out for link down. (0–120 min). When this value is 0, Time-out disables.
Time of Time-out (for Idle)	2 min	Set time of time-out for Idle. (0–120 min). When this value is 0, Time-out disables.
Real Time Command	TCP	Select protocol of Real Time command. (TCP/UDP)
TCP port	9100	Set port number of TCP RAW. This port number range is 1024 to 65535. When "Real Time Command" setting is TCP, it is used by sending and receiving of Real Time Command.
UDP port	3000	Set port number of UDP command. This port number range is 1024 to 65535. This is effective when "Real Time Command" setting is UDP.

# Other Ethernet setting

<b>[ Ethernet ]</b>		
MAC Address	80-00-0e-4e-40-03	Unchangeable
Physical Layer	Auto	Select option

Items	Default value	Detail
MAC Address	_____	Show MAC Address of the printer Ethernet interface.  This is the unique value for each Ethernet interface and show only.
Physical Layer	Auto	Select connection Speed and Duplex. (Auto / 10Mbps Half/10 Mbps Full / 100Mbps Half/ 100Mbps Full)

# SNMP Setting

This section discusses configuration parameters and default values for the SNMP setting.

**SNMP - Configuration**

**[ Community ]**

Read Only	public	Unchangeable
Read/Write	<input type="text"/>	Maximum 16 character

**[ SNMP Trap1 ]**

TRAP	Disabled ▾	Select option
IP Address	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	Value(0-255): Valid address
Community Name	<input type="text"/>	Maximum 16 character

**[ SNMP Trap2 ]**

TRAP	Disabled ▾	Select option
IP Address	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	Value(0-255): Valid address
Community Name	<input type="text"/>	Maximum 16 character

## SNMP Community setting

Items	Default value	Detail
Read Only	public	Show SNMP community read only name.  Maximum length is 16 characters.
Read/Write		Set SNMP community read-write name.  Maximum length is 16 characters.

## SNMP IP Trap1 setting

Items	Default value	Detail
TRAP	Disable	Select whether SNMP TRAP is "Enable" or "Disable".
Address	0.0.0.0	Set address of host that receives SNMP TRAP.
Community Name		Set SNMP TRAP community name. Maximum length is 16 characters.

## SNMP IP Trap2 setting

Items	Default value	Detail
TRAP	Disable	Select whether SNMP TRAP is "Enable" or "Disable".
Address	0.0.0.0	Set address of host that receives SNMP TRAP.
Community Name		Set SNMP TRAP community name. Maximum length is 16 characters.

# Printer Specifications

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## Printing Specifications

Print head	<ul style="list-style-type: none"> <li>• Fixed</li> <li>• 576 Print Elements</li> <li>• Direct Thermal</li> <li>• Fixed Head</li> <li>• Line of Dots</li> </ul>
Character Cell	<ul style="list-style-type: none"> <li>• Standard: 13 x 24 Dots</li> <li>• Compressed: 10 x 24 Dots</li> </ul>
Character Size	0.0525-inch wide by 0.092-inch high
Character Spacing	15.25 characters per inch (horizontal)
Character Pitch	<ul style="list-style-type: none"> <li>• 15.6 characters per inch (Standard)</li> <li>• 20.3 characters per inch (Compressed)</li> </ul>
Columns (maximum)	<p>For 80-mm paper:</p> <ul style="list-style-type: none"> <li>• 44 Columns (Standard)</li> <li>• 56 Columns (Compressed)</li> </ul> <p>For 58-mm paper:</p> <ul style="list-style-type: none"> <li>• 32 Columns (Standard)</li> <li>• 42 Columns (Compressed)</li> </ul>
Print Mode	Standard, Compressed, Double High, Double Wide, Upside Down, Rotated, Underline, Scalable, Bold, Superscript, Italic, Subscript

Resident Fonts	<ul style="list-style-type: none"> <li>• For Series i and Series ii: Code Page 437, 850, 852, 860, 863, 865, 858, 866, 1252, 1256, Katakana *Unicode support (UTF-16)</li> <li>• For Series ii only: Code Page 855, 862, 864, 874, 928, 737, 1250, 1251, 1254, 1255, Hungary, Romania, 932, 936, 949, 950</li> </ul>
Speed	<ul style="list-style-type: none"> <li>• Series i: 355.6 mm/sec</li> <li>• Series ii: 406 mm/sec</li> </ul>
Print Order	Descending
Line Spacing	<ul style="list-style-type: none"> <li>• 7.52 lines per inch (default)</li> <li>• 8.47, 8.13, 7.81, 7.25, 7.00, 5.98 lines per inch and variable lines per inch.</li> </ul>
Print Zone	2.83 inches maximum
Noise	57 dBA Sound Pressure (ISO 7779)
ECO	Paper reduction, Power reduction
Other	No Reverse Paper Feed

# Power Requirements

The printer receives power either from a host system (integrated) or from a separate in-line power supply (remote) which can be purchased separately. Models receiving power from a power supply use one cable for communication and a separate cable for power.

## Power modes

For Series i only:

- **NCR Terminal Power–Low Mode (Term Pwr–Low):** Maximum allowable printing cycle power consumption is 55W.
- **NCR Terminal Power–High Mode (Term Pwr–High):** Maximum allowable printing cycle power consumption is 55W.
- **NCR 60W Power Supply Mode (NCR 60W Ext Pwr):** Maximum allowable printing cycle power consumption is 60W.
- **NCR 75W Power Supply Mode (NCR 75 Ext Pwr):** Maximum allowable printing cycle power consumption is 75W.

For Series ii only:

- **NCR Terminal Power–Low Mode (Term Pwr–Low):** Maximum allowable printing cycle power consumption is 55W.
- **NCR Terminal Power–High Mode (Term Pwr–High):** Maximum allowable printing cycle power consumption is 55W.
- **NCR External Power Supply Mode (NCR 60W Ext Pwr):** Maximum allowable printing cycle power consumption is 60W.

## Power from host

The host computer must provide a +24V supply to the printer. Voltage variation in the 24V line may be within 21.6 and 26.4 volts. Surge protection must be provided. To do this, place a 3.2 Ampere time delay fuse on the +24V line.

# Power from external power supply

The external power supply must provide a +24V line of power to the printer. Surge protection must be provided.

For Series i:

- When NCR 75W external power supply is used, select **(NCR 75W Ext Pwr)** mode.
- When NCR 60W external power supply is used, select **(NCR 60W Ext Pwr)** mode.

For Series ii:

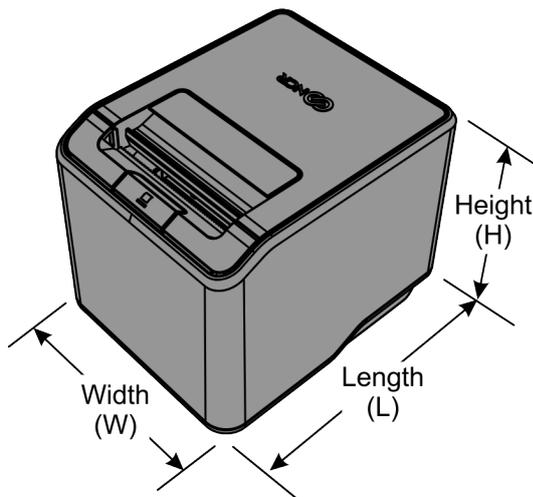
- When NCR external power supply is used, select **(NCR Ext Pwr)** mode.

# Physical and Operating Environment

## Temperature and humidity

	Temperature	Humidity
Operating	5 to 50°C (41 to 122°F)	5% to 90%
Storage	-10 to 55°C (14 to 131°F)	10% to 90%
Transit	-40 to 60°C (-40 to 140°F)	5% to 95%
Condensation	Condensation may occur when the printer is moved from cold to warm areas after shipment. The printer's design permits operation after drying out and stabilizing at room temperature.	

## Dimensions and weight



CCP-83544

<b>Length</b>	163.5 mm (6.44 in.)
<b>Width</b>	132.0 mm (5.20 in.)
<b>Height</b>	131.0 mm (5.16 in.)
<b>Weight</b>	1.1 kg (2.42 lb)

Confidential and proprietary information of NCR Voyix.  
Use and disclose solely pursuant to company instructions.

<b>Weight (Including paper roll)</b>	1.56 kg (2.53 lb)
<b>Weight (Including option interface and paper roll)</b>	1.60 kg (3.53 lb)

# Re-flashing the Printer Firmware

---

Flash Utility is used to flash the firmware and font files to the printer.



## Note

For the detailed procedure, refer to the *NCR Printer Flash Utility Owners Guide* from the NCR website, [https://www5.ncr.com/support/support\\_drivers\\_patches.asp?Class=External\Peripherals\Printer\FlashUtility\display](https://www5.ncr.com/support/support_drivers_patches.asp?Class=External\Peripherals\Printer\FlashUtility\display).

# Lean Receipt Utility

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Lean Receipt Utility is used to set the printer ECO setting from the utility.

For detailed procedure, refer to the Lean Receipt utility user manual from the NCR website:

[https://www5.ncr.com/support/support\\_drivers\\_patches.asp?Class=External\Peripherals\Printer\LeanReceiptUtility\display.](https://www5.ncr.com/support/support_drivers_patches.asp?Class=External\Peripherals\Printer\LeanReceiptUtility\display)

# Print Characteristics

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This section provides the following information:

- "[Character Size](#)" on the next page
- "[Print Zones](#)" on page 210

# Character Size

This section shows the dot pattern for characters printed on the receipt station.

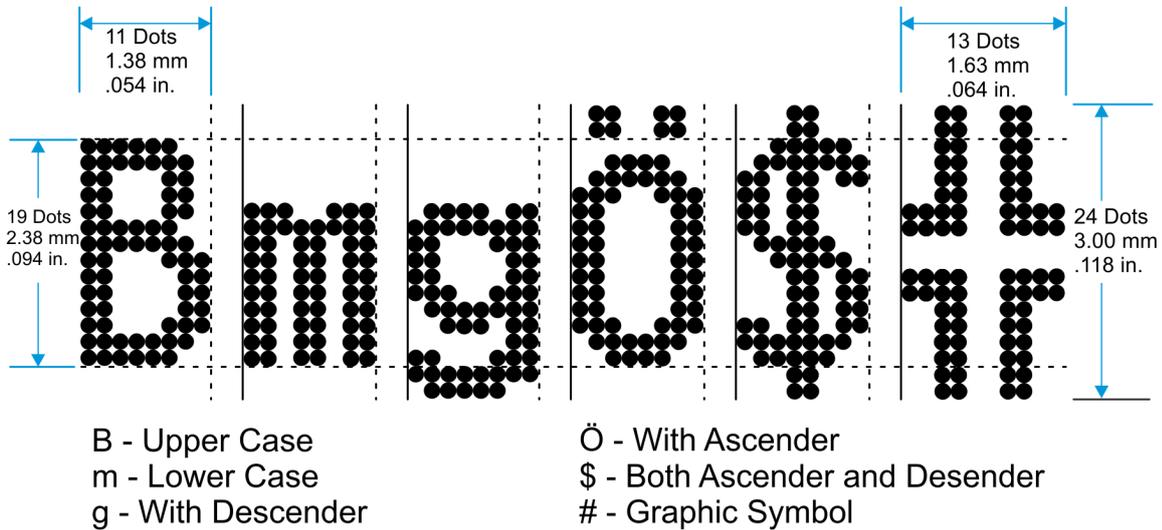
## Receipt station

The following two illustrations show the dot patterns of sample characters for standard pitch (15.6 CPI) and compressed pitch (20.3 CPI).

### Note

Compressed pitch uses fewer dots horizontally than standard pitch.

## Standard pitch



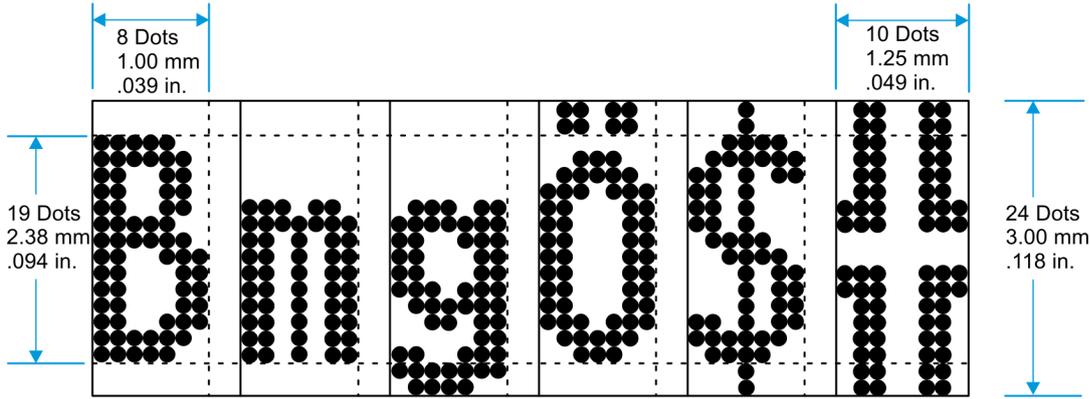
B - Upper Case  
m - Lower Case  
g - With Descender

Ö - With Ascender  
\$ - Both Ascender and Desender  
# - Graphic Symbol

203 DPI, 15.6 CPI Pitch (Standard)

CCP-71057

# Compressed pitch



- B - Upper Case
- m - Lower Case
- g - With Descender
- Ö - With Ascender
- \$ - Both Ascender and Desender
- # - Graphic Symbol

**203 DPI, 19 CPI Pitch (Compressed)**

CCP-71058

# Print Zones

This section shows the printable area for the receipt station.

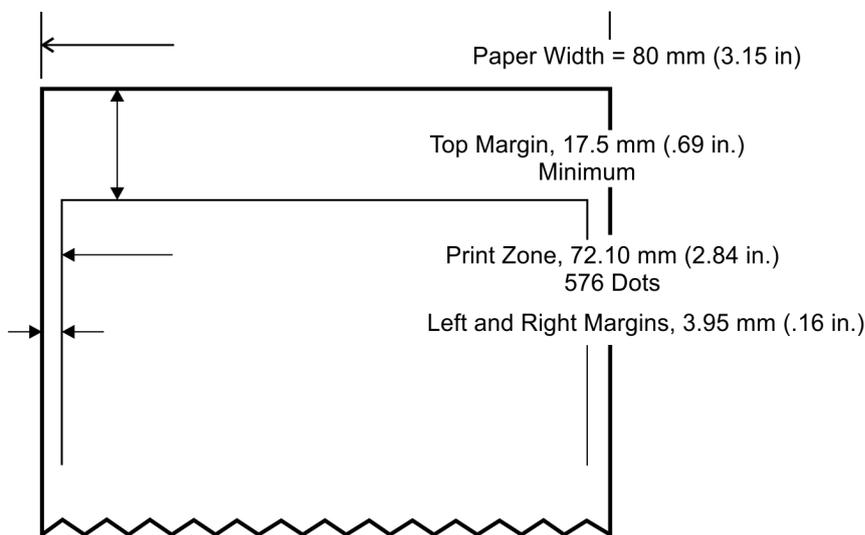
## Receipt station

### For 80-mm paper

The receipt station centers characters (standard pitch and compressed pitch) and graphics on a receipt with a width of 27 dots or **80 mm** (3.15 inches).

- Standard pitch: 13 x 24 dots in character cell, 44 characters (columns) per line
- Compressed pitch: 10 x 24 dots in character cell, 56 characters (columns) per line
- Double byte character: 24 x 24 dots in character cell, 24 characters (columns) per line
- Graphics: 576 addressable bits

The minimum print line height is 24 dots for characters and 24 dots for graphics. The standard print line height is 27 dots or **3.38 mm** (0.133 inches) for characters (with three extra dot rows). Refer to the illustration below (not to scale).



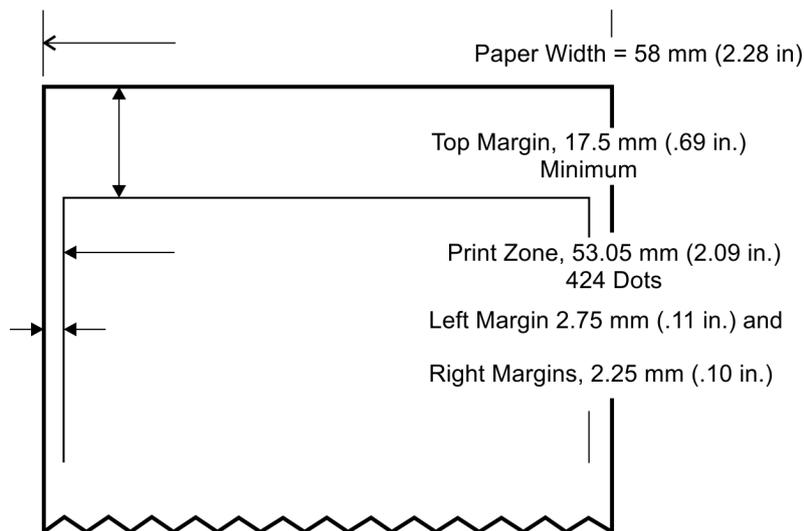
CCP-71054

## For 58-mm paper

The receipt station centers characters (standard pitch and compressed pitch) and graphics on a receipt with a width of **58 mm** (2.28 inches).

- Standard pitch: 13 x 24 dots in character cell, 32 characters (columns) per line
- Compressed pitch: 10 x 24 dots in character cell, 42 characters (columns) per line
- Double byte character: 24 x 24 dots in character cell, 17 characters (columns) per line
- Graphics: 424 addressable bits

The minimum print line height is 24 dots for characters and 24 dots for graphics. The standard print line height is 27 dots or **3.38 mm** (0.133 inches) for characters (with three extra dot rows). Refer to the illustration below (not to scale).



CCP-71053

# Character Sets

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The following pages show the character sets.

- For Series i and Series ii:
  - PC Code Page 437 (US English)
  - PC Code Page 737 (DOS Greek)
  - PC Code Page 850 (Multilingual)
  - PC Code Page 852 (Slavic)
  - PC Code Page 855 (IBM Cyrillic)
  - PC Code Page 858 (with Euro symbol)
  - PC Code Page 860 (DOS Portuguese)
  - PC Code Page 862 (Hebrew)
  - PC Code Page 863 (French Canadian)
  - PC Code Page 864 (Arabic)
  - PC Code Page 865 (Nordic)
  - PC Code Page 866 (Cyrillic)
  - PC Code Page 874 (Enhanced Thai)
  - PC Code Page 932 (Windows–31J)
  - PC Code Page 936 (Simplified Chinese)
  - PC Code Page 949 (Korean)
  - PC Code Page 950 (Traditional Chinese)
  - PC Code Page 1250 (Windows Eastern European)
  - PC Code Page 1251 (Windows Cyrillic)
  - PC Code Page 1252 (Windows Latin #1)
  - PC Code Page 1256 (Arabic) – Contextual
  - PC Code Page 1256 (Arabic) – Fixed

- PC Code Page Hungary
- PC Code Page Katakana
- PC Code Page Romania
- For Series ii only:
  - PC Code Page 1254 (Windows Turkish)
  - PC Code Page 1255 (Windows Hebrew)
  - PC Code Page 950 (HKSCS)

# Code Page 437, 850, 852, and 858

Code Page 437.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	Ç	É	á	...	L	...	α	≡	
01	!	1	A	Q	a	ç	é	í	...	l	...	β	±	
02	"	2	B	R	b	r	ê	ó	...	l	...	Γ	≥	
03	#	3	C	S	c	s	ä	ö	...	l	...	π	≤	
04	\$	4	D	T	d	t	å	õ	...	l	...	Σ	∫	
05	%	5	E	U	e	u	à	ò	...	l	...	o	∫	
06	&	6	F	V	f	v	â	ô	...	l	...	μ	+	
07	'	7	G	W	g	w	ç	ü	...	l	...	τ	=	
08	(	8	H	X	h	x	ê	ý	...	l	...	φ	°	
09	)	9	I	Y	i	y	ë	ö	...	l	...	θ	•	
0A	*	:	J	Z	j	z	è	ù	...	l	...	Ω	·	
0B	+	;	K	[	k	{	í	ú	...	l	...	δ	√	
0C	,	<	L	\	l		ï	û	...	l	...	ø	n	
0D	-	=	M	]	m	}	í	ü	...	l	...	φ	2	
0E	.	>	N	^	n	~	Ä	×	...	l	...	ε	■	
0F	/	?	0	o	o	o	À	ƒ	...	l	...	∞	■	

Code Page 850.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	Ç	É	á	...	L	...	ø	±	
01	!	1	A	Q	a	ç	é	í	...	l	...	ó	±	
02	"	2	B	R	b	r	ê	ó	...	l	...	É	ó	
03	#	3	C	S	c	s	ä	ö	...	l	...	É	ó	
04	\$	4	D	T	d	t	å	õ	...	l	...	É	ó	
05	%	5	E	U	e	u	à	ò	...	l	...	É	ó	
06	&	6	F	V	f	v	â	ô	...	l	...	É	ó	
07	'	7	G	W	g	w	ç	ü	...	l	...	É	ó	
08	(	8	H	X	h	x	ê	ý	...	l	...	É	ó	
09	)	9	I	Y	i	y	ë	ö	...	l	...	É	ó	
0A	*	:	J	Z	j	z	è	ù	...	l	...	É	ó	
0B	+	;	K	[	k	{	í	ú	...	l	...	É	ó	
0C	,	<	L	\	l		ï	û	...	l	...	É	ó	
0D	-	=	M	]	m	}	í	ü	...	l	...	É	ó	
0E	.	>	N	^	n	~	Ä	×	...	l	...	É	ó	
0F	/	?	0	o	o	o	À	ƒ	...	l	...	É	ó	

Code Page 852.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	Ç	É	á	...	L	...	d	o	-
01	!	1	A	Q	a	ç	é	í	...	l	...	ð	ó	-
02	"	2	B	R	b	r	ê	ó	...	l	...	ó	ó	-
03	#	3	C	S	c	s	ä	ö	...	l	...	É	ó	-
04	\$	4	D	T	d	t	å	õ	...	l	...	É	ó	-
05	%	5	E	U	e	u	à	ò	...	l	...	É	ó	-
06	&	6	F	V	f	v	â	ô	...	l	...	É	ó	-
07	'	7	G	W	g	w	ç	ü	...	l	...	É	ó	-
08	(	8	H	X	h	x	ê	ý	...	l	...	É	ó	-
09	)	9	I	Y	i	y	ë	ö	...	l	...	É	ó	-
0A	*	:	J	Z	j	z	è	ù	...	l	...	É	ó	-
0B	+	;	K	[	k	{	í	ú	...	l	...	É	ó	-
0C	,	<	L	\	l		ï	û	...	l	...	É	ó	-
0D	-	=	M	]	m	}	í	ü	...	l	...	É	ó	-
0E	.	>	N	^	n	~	Ä	×	...	l	...	É	ó	-
0F	/	?	0	o	o	o	À	ƒ	...	l	...	É	ó	-

Code Page 858.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	Ç	É	á	...	L	...	ø	±	
01	!	1	A	Q	a	ç	é	í	...	l	...	ó	±	
02	"	2	B	R	b	r	ê	ó	...	l	...	É	ó	
03	#	3	C	S	c	s	ä	ö	...	l	...	É	ó	
04	\$	4	D	T	d	t	å	õ	...	l	...	É	ó	
05	%	5	E	U	e	u	à	ò	...	l	...	É	ó	
06	&	6	F	V	f	v	â	ô	...	l	...	É	ó	
07	'	7	G	W	g	w	ç	ü	...	l	...	É	ó	
08	(	8	H	X	h	x	ê	ý	...	l	...	É	ó	
09	)	9	I	Y	i	y	ë	ö	...	l	...	É	ó	
0A	*	:	J	Z	j	z	è	ù	...	l	...	É	ó	
0B	+	;	K	[	k	{	í	ú	...	l	...	É	ó	
0C	,	<	L	\	l		ï	û	...	l	...	É	ó	
0D	-	=	M	]	m	}	í	ü	...	l	...	É	ó	
0E	.	>	N	^	n	~	Ä	×	...	l	...	É	ó	
0F	/	?	0	o	o	o	À	ƒ	...	l	...	É	ó	

# Code Page 860, 862, 863, and 864

Code Page 860.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	ç	É	á	...	L	ll	α	±	≡
01	!	1	A	Q	a	q	È	â	...	l	ll	β	±	≡
02	"	2	B	R	b	r	Ê	ã	...	l	ll	γ	±	≡
03	#	3	C	S	c	s	Ë	ä	...	l	ll	δ	±	≡
04	\$	4	D	T	d	t	Ì	å	...	l	ll	ε	±	≡
05	%	5	E	U	e	u	Í	æ	...	l	ll	ζ	±	≡
06	&	6	F	V	f	v	Ï	ç	...	l	ll	η	±	≡
07	'	7	G	W	g	w	Î	è	...	l	ll	θ	±	≡
08	(	8	H	X	h	x	Ï	é	...	l	ll	ι	±	≡
09	)	9	I	Y	i	y	Ï	ê	...	l	ll	κ	±	≡
0A	*	:	J	Z	j	z	Ï	ë	...	l	ll	λ	±	≡
0B	+	;	K	[	k	{	Ï	ì	...	l	ll	μ	±	≡
0C	,	<	L	\	l		Ï	í	...	l	ll	ν	±	≡
0D	-	=	M	]	m	}	Ï	î	...	l	ll	ξ	±	≡
0E	.	>	N	^	n	~	Ï	ï	...	l	ll	ο	±	≡
0F	/	?	O	_	o	α	Ï	ï	...	l	ll	π	±	≡

Code Page 862

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	κ	ι	á	...	L	ll	α	±	≡
01	!	1	A	Q	a	κ	ο	â	...	l	ll	β	±	≡
02	"	2	B	R	b	κ	υ	ã	...	l	ll	γ	±	≡
03	#	3	C	S	c	κ	ϕ	ä	...	l	ll	δ	±	≡
04	\$	4	D	T	d	κ	ψ	å	...	l	ll	ε	±	≡
05	%	5	E	U	e	κ	ω	æ	...	l	ll	ζ	±	≡
06	&	6	F	V	f	κ	ϰ	ç	...	l	ll	η	±	≡
07	'	7	G	W	g	κ	ρ	è	...	l	ll	θ	±	≡
08	(	8	H	X	h	κ	σ	é	...	l	ll	ι	±	≡
09	)	9	I	Y	i	κ	τ	ê	...	l	ll	κ	±	≡
0A	*	:	J	Z	j	κ	υ	ë	...	l	ll	λ	±	≡
0B	+	;	K	[	k	κ	φ	ì	...	l	ll	μ	±	≡
0C	,	<	L	\	l	κ	ψ	í	...	l	ll	ν	±	≡
0D	-	=	M	]	m	κ	ω	î	...	l	ll	ξ	±	≡
0E	.	>	N	^	n	κ	ϰ	ï	...	l	ll	ο	±	≡
0F	/	?	O	_	o	κ	ρ	ï	...	l	ll	π	±	≡

Code Page 863.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	ç	É	á	...	L	ll	α	±	≡
01	!	1	A	Q	a	q	È	â	...	l	ll	β	±	≡
02	"	2	B	R	b	r	Ê	ã	...	l	ll	γ	±	≡
03	#	3	C	S	c	s	Ë	ä	...	l	ll	δ	±	≡
04	\$	4	D	T	d	t	Ì	å	...	l	ll	ε	±	≡
05	%	5	E	U	e	u	Í	æ	...	l	ll	ζ	±	≡
06	&	6	F	V	f	v	Ï	ç	...	l	ll	η	±	≡
07	'	7	G	W	g	w	Î	è	...	l	ll	θ	±	≡
08	(	8	H	X	h	x	Ï	é	...	l	ll	ι	±	≡
09	)	9	I	Y	i	y	Ï	ê	...	l	ll	κ	±	≡
0A	*	:	J	Z	j	z	Ï	ë	...	l	ll	λ	±	≡
0B	+	;	K	[	k	{	Ï	ì	...	l	ll	μ	±	≡
0C	,	<	L	\	l		Ï	í	...	l	ll	ν	±	≡
0D	-	=	M	]	m	}	Ï	î	...	l	ll	ξ	±	≡
0E	.	>	N	^	n	~	Ï	ï	...	l	ll	ο	±	≡
0F	/	?	O	_	o	α	Ï	ï	...	l	ll	π	±	≡

Code Page 864

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	°	β	·	φ	ذ	-	·		
01	!	1	A	Q	a	q	·	∞	-	ل	ف	ر	·	
02	"	2	B	R	b	r	·	φ	ل	ز	ن	ف	ر	
03	#	3	C	S	c	s	√	±	ل	ك	·	ف	ر	
04	\$	4	D	T	d	t	±	±	ل	ك	·	ف	ر	
05	%	5	E	U	e	u	±	±	ل	ك	·	ف	ر	
06	&	6	F	V	f	v	±	±	ل	ك	·	ف	ر	
07	'	7	G	W	g	w	±	±	ل	ك	·	ف	ر	
08	(	8	H	X	h	x	±	±	ل	ك	·	ف	ر	
09	)	9	I	Y	i	y	±	±	ل	ك	·	ف	ر	
0A	*	:	J	Z	j	z	±	±	ل	ك	·	ف	ر	
0B	+	;	K	[	k	{	±	±	ل	ك	·	ف	ر	
0C	,	<	L	\	l		±	±	ل	ك	·	ف	ر	
0D	-	=	M	]	m	}	±	±	ل	ك	·	ف	ر	
0E	.	>	N	^	n	~	±	±	ل	ك	·	ف	ر	
0F	/	?	O	_	o	α	±	±	ل	ك	·	ف	ر	

# Code Page 865, 866, 874, and 1252

Code Page 865.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	ç	É	á	...	L	...	α	±	≡
01	!	1	A	Q	a	q	Û	æ	í	...	...	Β	±	≥
02	"	2	B	R	b	r	é	Æ	ó	...	...	Γ	±	≤
03	#	3	C	S	s	c	â	ò	ü	...	...	Π	±	≤
04	\$	4	D	T	d	t	ä	ö	ñ	...	...	Σ	±	≤
05	%	5	E	U	e	u	å	ø	ñ	...	...	σ	±	≤
06	&	6	F	V	f	v	ä	ö	ñ	...	...	μ	±	≤
07	'	7	G	W	g	w	ç	ù	°	...	...	τ	±	≤
08	(	8	H	X	h	x	è	ÿ	ö	...	...	φ	±	≤
09	)	9	I	Y	i	y	è	ÿ	ö	...	...	θ	±	≤
0A	*	:	J	Z	j	z	è	ÿ	ö	...	...	Ω	±	≤
0B	+	:	K	[	k	{	è	ÿ	ö	...	...	δ	±	≤
0C	,	<	L	\	l		è	ÿ	ö	...	...	ω	±	≤
0D	-	=	M	]	m	}	è	ÿ	ö	...	...	φ	±	≤
0E	.	>	N	^	n	~	è	ÿ	ö	...	...	φ	±	≤
0F	/	?	O	_	o	ó	à	f	...	...	π	±	≤	

Code Page 866.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	А	Р	а	...	L	...	α	±	≡
01	!	1	A	Q	a	q	Б	С	б	...	...	Β	±	≥
02	"	2	B	R	b	r	В	Т	в	...	...	Γ	±	≤
03	#	3	C	S	s	c	Г	У	г	...	...	Π	±	≤
04	\$	4	D	T	d	t	Д	Ф	д	...	...	Σ	±	≤
05	%	5	E	U	e	u	Е	Х	е	...	...	σ	±	≤
06	&	6	F	V	f	v	Ж	Ц	ж	...	...	μ	±	≤
07	'	7	G	W	g	w	З	У	з	...	...	τ	±	≤
08	(	8	H	X	h	x	И	Ш	и	...	...	φ	±	≤
09	)	9	I	Y	i	y	Й	Щ	й	...	...	θ	±	≤
0A	*	:	J	Z	j	z	К	Ъ	к	...	...	Ω	±	≤
0B	+	:	K	[	k	{	Л	Ы	л	...	...	δ	±	≤
0C	,	<	L	\	l		М	Ь	м	...	...	ω	±	≤
0D	-	=	M	]	m	}	Н	Э	н	...	...	φ	±	≤
0E	.	>	N	^	n	~	О	Ю	о	...	...	φ	±	≤
0F	/	?	O	_	o	ó	П	Я	п	...	...	π	±	≤

Code Page 874.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p				з	п	:	;	;	;
01	!	1	A	Q	a	q			н	ш	ш	ш	ш	ш
02	"	2	B	R	b	r			у	ш	ш	ш	ш	ш
03	#	3	C	S	s	c			ш	ш	ш	ш	ш	ш
04	\$	4	D	T	d	t			ш	ш	ш	ш	ш	ш
05	%	5	E	U	e	u			ш	ш	ш	ш	ш	ш
06	&	6	F	V	f	v			ш	ш	ш	ш	ш	ш
07	'	7	G	W	g	w			ш	ш	ш	ш	ш	ш
08	(	8	H	X	h	x			ш	ш	ш	ш	ш	ш
09	)	9	I	Y	i	y			ш	ш	ш	ш	ш	ш
0A	*	:	J	Z	j	z			ш	ш	ш	ш	ш	ш
0B	+	:	K	[	k	{			ш	ш	ш	ш	ш	ш
0C	,	<	L	\	l				ш	ш	ш	ш	ш	ш
0D	-	=	M	]	m	}			ш	ш	ш	ш	ш	ш
0E	.	>	N	^	n	~			ш	ш	ш	ш	ш	ш
0F	/	?	O	_	o	ó			ш	ш	ш	ш	ш	ш

Code Page 1252.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	'	p	€			°	А	Đ	à	đ	
01	!	1	A	Q	a	q			°	Á	Ñ	á	ñ	
02	"	2	B	R	b	r			°	À	Ń	à	ń	
03	#	3	C	S	s	c			°	Ā	Ń	ā	ñ	
04	\$	4	D	T	d	t			°	Ā	Ń	ā	ñ	
05	%	5	E	U	e	u			°	Ā	Ń	ā	ñ	
06	&	6	F	V	f	v			°	Ā	Ń	ā	ñ	
07	'	7	G	W	g	w			°	Ā	Ń	ā	ñ	
08	(	8	H	X	h	x			°	Ā	Ń	ā	ñ	
09	)	9	I	Y	i	y			°	Ā	Ń	ā	ñ	
0A	*	:	J	Z	j	z			°	Ā	Ń	ā	ñ	
0B	+	:	K	[	k	{			°	Ā	Ń	ā	ñ	
0C	,	<	L	\	l				°	Ā	Ń	ā	ñ	
0D	-	=	M	]	m	}			°	Ā	Ń	ā	ñ	
0E	.	>	N	^	n	~			°	Ā	Ń	ā	ñ	
0F	/	?	O	_	o	ó			°	Ā	Ń	ā	ñ	

# Code Page 1256 and Katakana

Code Page 1256

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	·	p	€	ك	°	-	ذ	à	'		
01	!	1	A	Q	a	q	ق	±	-	ز	â	'		
02	"	2	B	R	b	r	ق	±	-	ز	â	'		
03	#	3	C	S	c	s	ق	±	-	ز	â	'		
04	\$	4	D	T	d	t	ق	±	-	ز	â	'		
05	%	5	E	U	e	u	ق	±	-	ز	â	'		
06	&	6	F	V	f	v	ق	±	-	ز	â	'		
07	'	7	G	W	g	w	ق	±	-	ز	â	'		
08	(	8	H	X	h	x	ق	±	-	ز	â	'		
09	)	9	I	Y	i	y	ق	±	-	ز	â	'		
0A	*	:	J	Z	j	z	ق	±	-	ز	â	'		
0B	+	;	K	[	k	[	ق	±	-	ز	â	'		
0C	,	<	L	\	l		ق	±	-	ز	â	'		
0D	-	=	M	]	m	]	ق	±	-	ز	â	'		
0E	.	>	N	^	n	^	ق	±	-	ز	â	'		
0F	/	?	O	_	o	_	ق	±	-	ز	â	'		

Code Page KATAKANA.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	0	@	P	·	p	ト	ト	ト	ト	ト	ト	ト	ト	ト
01	!	1	A	Q	a	q	ト	ト	ト	ト	ト	ト	ト	ト
02	"	2	B	R	b	r	ト	ト	ト	ト	ト	ト	ト	ト
03	#	3	C	S	c	s	ト	ト	ト	ト	ト	ト	ト	ト
04	\$	4	D	T	d	t	ト	ト	ト	ト	ト	ト	ト	ト
05	%	5	E	U	e	u	ト	ト	ト	ト	ト	ト	ト	ト
06	&	6	F	V	f	v	ト	ト	ト	ト	ト	ト	ト	ト
07	'	7	G	W	g	w	ト	ト	ト	ト	ト	ト	ト	ト
08	(	8	H	X	h	x	ト	ト	ト	ト	ト	ト	ト	ト
09	)	9	I	Y	i	y	ト	ト	ト	ト	ト	ト	ト	ト
0A	*	:	J	Z	j	z	ト	ト	ト	ト	ト	ト	ト	ト
0B	+	;	K	[	k	[	ト	ト	ト	ト	ト	ト	ト	ト
0C	,	<	L	\	l		ト	ト	ト	ト	ト	ト	ト	ト
0D	-	=	M	]	m	]	ト	ト	ト	ト	ト	ト	ト	ト
0E	.	>	N	^	n	^	ト	ト	ト	ト	ト	ト	ト	ト
0F	/	?	O	_	o	_	ト	ト	ト	ト	ト	ト	ト	ト







# Code Page 932 Windows—31J (continuation)

## Code page 932-90

40 拭植殖燭織職色蝕食鉗辱尻伸信侵營  
 50 娠環審心慎振新晉森樓漫深申疹真神  
 60 奏紳臣苾薪親診身辛進針震人仁刃塵  
 70 壬尋莖尽腎訊迅陣勒筭覈須酢固厨  
 80 運吹垂帥推水炊睡粹翠衰遂醉錐鍾隨  
 90 瑞韃崇嵩數樞趨難据杉樞管頰雀樞澀  
 A0 擢寸世瀨欵是凜制駒姓征性成政駮星  
 B0 瞞樓栖正濟柱生盛構聖声製西誠營請  
 C0 逝醜膏靜齊稅臆蹇席惜戚斥昔析石積  
 D0 籍績脊實赤跡蹟碩切拙接撰折設窃節  
 E0 說雪絕舌蟬仙先干占宣專尖川戰扇撰  
 F0 枵枵泉淺洗染潛煎爛旋穿箭線

## Code page 932-91

40 織羨腺舛船鷹詮賤踐選選錢鉄閃群前  
 50 善漸然全禪繼膳糧嗜望咀措曾曾楚狙  
 60 疏疎礎祖租祖素組蘇訴阻溯鼠僧創双  
 70 囊倉費壯奏爽未履匝惣惣搜拂播播  
 80 操早曹巢植槽漚燥爭瘦相窓禮總綜聰  
 90 草莊葬蒼藻裝走送遺鐘羅羅像增憎識  
 A0 戴贈造促側則即息捉束測足速俗屬賊  
 B0 族繞卒袖其掬存孫孫損村遜他多太汰  
 C0 詔唾唾妥攢打枪舵構陀駄駮体堆对耐  
 D0 岱蒂待怠態戴替泰滯胎腿苔袋貸退遠  
 E0 隊黛觸代台大第醜醜團濶濶卓啄宅托  
 F0 折拓沃濯琢託鐸濁諾葦夙蛸只

## Code page 932-92

40 叩但遠辰奪脫巽豎汕棚谷狸鱉梅誰丹  
 50 單墮坦担探巨歎淡湛炭短端箴綻耽胆  
 60 蛋誕鍛囤墻彈斷暖棹段男談僮知地弛  
 70 恥習池衙稚置致踟遲馳葵奮竹筠奮  
 80 逐秩窳茶嬌釐中仲宙思抽屜柱注虫衷  
 90 註耐鑄駐樺瀨猪苧著貯丁兆涸曝羅帖  
 A0 帳疔弔張彰徵懲挑轉朝潮膠訂眺聽脈  
 B0 腸蝶譚謀超跳銚長頂鳥勳抄直朕沈珍  
 C0 賃鎮陳漳墜椎樞追鎚痛通塚樞摑規佃  
 D0 漬柘辻萬擬錫樺漬坪壺嫻袖爪吊鈞鑄  
 E0 亭低停偵剝貞呈堤定帝底庭廷弟悌抵  
 F0 挺提梯汀錠禎禎程締錠訂諦諦遇

## Code page 932-93

40 邸鄴釘鼎泥摘擗敵滴的笛遙鏡溯哲徹  
 50 撤轍迭鉄典墳天展店添纏甜貼軫顯点  
 60 佻殿淵田電兎吐堵塗妬屠徒斗杜渡登  
 70 莧賭途都鎡砥砾努度土奴怒倒党冬  
 80 凍刀唐塔塘套宕島嶋悼投搭東桃榜棟  
 90 盜洵湯燙灯燈当痘揆等答筒糖統到董  
 A0 蕩藤討糲豆踏逃透鑽陶頭騰關勸動同  
 B0 堂導懂撞洞贖童朋菊道銅吐鴉匿得德  
 C0 沈特誓禿篤獨詭詭極樞凸突橄届薦苦  
 D0 實酉潯囁屯惇敦沌豚運頓吞疊鈍奈那  
 E0 內乍屈雍謎灘捺鍋機馴縐瓊南楠軟難  
 F0 汝二尼忒迓勾賑肉虹廿日乳入

## Code page 932-94

40 如尿葦任妊忍認濡襍祿寧葱猫熱年念  
 50 捻擦燃粘乃適之莖囊惱濃納能腦膿農  
 60 覲蚤巴把播霸把波派髻破婆罵芭馬俳  
 70 癡排排敗杯盃牌背肺鬻配倍培媒梅  
 80 襍煤須賈壳賸陪這蟻秤矧萩伯剝博拍  
 90 柏泊白箔柏舶簿迫曝曝爆縛莫駁麥函  
 A0 箱裕箸馨箸植帽肌畑島八鉢澆發醜髮  
 B0 伐罰拔筏閏鳩嘶鳩給準判半反叛帆  
 C0 撥斑板汜汎版犯班畔繫般藩販範采煩  
 D0 瀆飯挽晚蕃盤盤蕃匪非否妃庇彼悲  
 E0 罪批披斐比泌疲皮碑秘緋罷肥被諷費  
 F0 避非飛馮馮備尾微批毘毘麗麗

## Code page 932-95

40 鼻柇稗匹疋髭彦膝萎肘弼必畢筆邇桎  
 50 姬媛紐百謬儀彪標水漂瓢票表評豹廟  
 60 描病秒苗錨鉅蒜蛭鱧品彬斌浜瀕資資  
 70 頻敏瓶不付埠夫婦富富布府怖扶敷  
 80 斧普浮父符腐膚芙鑽貴賦赴舉附侮撫  
 90 武舞葡葡部封樞風葦蕩伏副復幅服福  
 A0 腹覆覆淵弗弘沸仏物酌分吻噴墳憤扮  
 B0 焚富粉糞紛霧文聞丙併兵謂幣平弊柄  
 C0 並蔽閉陸米賈僻壁癖碧別譬獲銘偏奕  
 D0 片篤編迦返還便勉媧井鞞保鑄鋪團捕  
 E0 步甫補輔穗募慕慕戛暮母簿菩傲俾包  
 F0 杲報奉宝峰臺崩庖抱捧放方朋

# Code Page 932 Windows—31J (continuation)

Code page 932-96

40 法泡烹砲繸胞芳萌蓬蜂窠訪靈邦鐘飽  
50 鳳鵬乏亡傍剖坊妨幘忘忙房暴望某棒  
60 冒紡肪膨謀貌贊銜防吠頻北僕卜墨撲  
70 朴妝證穆卸勃沒殆堀幌奔本翻凡盆  
80 靡靡廢埋妹昧枚每哩襪幕膜枕絳絳  
90 錫樹亦僕又抹末沫迄促藹靡万慢瀉漫  
A0 蔓味未魅已箕岬密蜜湊糞稔脈炒耗民  
B0 眼務夢無牟矛霧鷄棕媼娘冥名命明盟  
C0 迷銘鳴姪牝滅免棉綿緬面麵撲撲茂妄  
D0 孟毛猛盲綱耗蕞微木默目奎勿餅尤戾  
E0 初質問閻絞門勾也冶夜爺耶野弥矢厄  
F0 役約翼訊躍靖柳藪鍾愉愈油癒

Code page 932-97

40 諭輸唯佑優勇友宥幽悠憂損有柚湧涌  
50 猶猷由祐裕誘遊邑郵雄融夕予余与譽  
60 與預備幼妖容鷹揚搖擲曜揚樣洋溶溶  
70 用蕪羊燿葉蓉嬰詭躑暹陽葵懿抑欲  
80 沃浴翌翼淀羅螺裸來萊賴雷洛絡落酪  
90 乱卵嵐擱濫藍蘭覽利吏履李梨理璃璃  
A0 裏裡里離陸律率立菴掠略劉流濯琉留  
B0 疏粒陸龍龍侶慮旅慮了亮儼而凌寮寮  
C0 梁涼獵療療稜稜良諒諒量陵傾力綠倫  
D0 塵林淋熾琳琳臨輪隣麟璣璣淚累類令  
E0 伶例冷勵嶺伶玲礼苓錦縈靈麗齡曆  
F0 歷列劣烈裂裂戀戀憤憤漣煉煉練練聯

Code page 932-98

40 蓮連鍊呂魯櫓炉賂路露勞囊廓弄朗樓  
50 榔浪瀉牢狼輦老髻蠟郎六驛祿肋錄論  
60 倭和話歪賄賄惑粹蠶互亘鮎詭蕘蕘梔  
70 灣碗腕  
80  
90 式  
A0 丐丕个卅、井丿乂乖乘亂丿豫寧舒式  
B0 于亞亞一亢京毫置从仍仄仆仇仗仞仞  
C0 仟价伏仗估佛佻佻佻佻佻佻佻佻佻  
D0 侑侑侑侑侑侑俛俛俛俛俛俛俛俛俛俛  
E0 倨倨倨倨倨倨倨倨倨倨倨倨倨倨倨  
F0 會借僂僂僂僂僂僂僂僂僂僂僂僂僂僂

Code page 932-99

40 倉僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂  
50 僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂  
60 僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂  
70 僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂  
80 僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂  
90 僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂  
A0 劬劬劬劬劬劬劬劬劬劬劬劬劬劬  
B0 勿勿勿勿勿勿勿勿勿勿勿勿勿勿  
C0 卅卅卅卅卅卅卅卅卅卅卅卅卅卅  
D0 廠厶參葛雙雙雙雙雙叮叭叭叭叭叭  
E0 叻叻叻叻叻叻叻叻叻叻叻叻叻叻  
F0 咀嘍咄咄咄咄咄咄咄咄咄咄咄咄

Code page 932-9A

40 咫晒咤咤咤咤咤咤咤咤咤咤咤咤  
50 哩啞啞啞啞啞啞啞啞啞啞啞啞啞啞  
60 啞啞啞啞啞啞啞啞啞啞啞啞啞啞  
70 噴噴噴噴噴噴噴噴噴噴噴噴噴噴  
80 噴噴噴噴噴噴噴噴噴噴噴噴噴噴  
90 噴噴噴噴噴噴噴噴噴噴噴噴噴噴  
A0 國國國國國國國國國國國國國國  
B0 垠垠垠垠垠垠垠垠垠垠垠垠垠垠  
C0 坵坵坵坵坵坵坵坵坵坵坵坵坵坵坵  
D0 墟墟墟墟墟墟墟墟墟墟墟墟墟墟墟墟  
E0 壘壘壘壘壘壘壘壘壘壘壘壘壘壘壘  
F0 奇夾奇奕奕奕奕奕奕奕奕奕奕奕奕

Code page 932-9B

40 奸妁妝倭倭倭倭倭倭倭倭倭倭倭倭  
50 娜媯媯媯媯媯媯媯媯媯媯媯媯媯媯  
60 媯媯媯媯媯媯媯媯媯媯媯媯媯媯  
70 媯媯子孕孕孕孕孩孩孩孩孩孩孩孩  
80 它宦宸宸宸宸宸宸宸宸宸宸宸宸宸  
90 實尅將專對尔勤尤尅尸尹屁屈屎屎屎  
A0 屏屏屏屏屏屏屏屏屏屏屏屏屏屏屏  
B0 岍岍岍岍岍岍岍岍岍岍岍岍岍岍岍  
C0 崑崑崑崑崑崑崑崑崑崑崑崑崑崑崑  
D0 嶼嶼嶼嶼嶼嶼嶼嶼嶼嶼嶼嶼嶼嶼嶼  
E0 厝厝厝厝厝厝厝厝厝厝厝厝厝厝  
F0 幫幫幵幵幵幵幵幵幵幵幵幵幵幵幵

# Code Page 932 Windows—31J (continuation)

## Code page 932-9C

40 慶廣廡廚屢廢廡察廡國廡廳廡孔 迪升  
50 弃莛彝彝弋弋弋弋弋弋弋弋弋  
60 象彗彗彗彗彗彗彗彗彗彗彗  
70 徘徊徃徃徃徃徃徃徃徃徃徃  
80 怙恂恂恂恂恂恂恂恂恂恂恂  
90 恹恆恆恆恆恆恆恆恆恆恆恆  
A0 悛悛悛悛悛悛悛悛悛悛悛悛悛  
B0 愜愜愜愜愜愜愜愜愜愜愜愜  
C0 愜愜愜愜愜愜愜愜愜愜愜愜  
D0 愜愜愜愜愜愜愜愜愜愜愜愜  
E0 愜愜愜愜愜愜愜愜愜愜愜愜  
F0 愜愜愜愜愜愜愜愜愜愜愜愜

## Code page 932-9D

40 憂戡戡戡戡戡戡戡戡戡戡戡  
50 抉抉抉抉抉抉抉抉抉抉抉抉抉  
60 拜拜拜拜拜拜拜拜拜拜拜拜拜  
70 挾挾挾挾挾挾挾挾挾挾挾挾  
80 振振振振振振振振振振振振振  
90 攝攝攝攝攝攝攝攝攝攝攝攝攝  
A0 擲擲擲擲擲擲擲擲擲擲擲擲擲  
B0 擲擲擲擲擲擲擲擲擲擲擲擲擲  
C0 攷攷攷攷攷攷攷攷攷攷攷攷  
D0 斷斷斷斷斷斷斷斷斷斷斷斷斷  
E0 查查查查查查查查查查查查查  
F0 晰晰晰晰晰晰晰晰晰晰晰晰晰

## Code page 932-9E

40 矚矚矚矚矚矚矚矚矚矚矚矚  
50 霸霸霸霸霸霸霸霸霸霸霸霸霸  
60 杼杼杼杼杼杼杼杼杼杼杼杼杼  
70 拆拆拆拆拆拆拆拆拆拆拆拆拆  
80 梳梳梳梳梳梳梳梳梳梳梳梳梳  
90 梵梵梵梵梵梵梵梵梵梵梵梵梵  
A0 棧棧棧棧棧棧棧棧棧棧棧棧棧  
B0 檣檣檣檣檣檣檣檣檣檣檣檣  
C0 檣檣檣檣檣檣檣檣檣檣檣檣  
D0 檣檣檣檣檣檣檣檣檣檣檣檣  
E0 檣檣檣檣檣檣檣檣檣檣檣檣  
F0 檣檣檣檣檣檣檣檣檣檣檣檣

## Code page 932-9F

40 槩槩槩槩槩槩槩槩槩槩槩槩槩  
50 藟藟藟藟藟藟藟藟藟藟藟藟  
60 戲戲戲戲戲戲戲戲戲戲戲戲戲  
70 彈彈彈彈彈彈彈彈彈彈彈彈彈  
80 虞虞虞虞虞虞虞虞虞虞虞虞虞  
90 汾汾汾汾汾汾汾汾汾汾汾汾汾  
A0 泛泛泛泛泛泛泛泛泛泛泛泛泛  
B0 涓涓涓涓涓涓涓涓涓涓涓涓涓涓  
C0 滂滂滂滂滂滂滂滂滂滂滂滂滂  
D0 澳澳澳澳澳澳澳澳澳澳澳澳澳  
E0 游游游游游游游游游游游游游  
F0 溟溟溟溟溟溟溟溟溟溟溟溟溟

## Code page 932-E0

40 漾漾漾漾漾漾漾漾漾漾漾漾漾  
50 瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟  
60 瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟  
70 瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟  
80 烙烙烙烙烙烙烙烙烙烙烙烙烙  
90 熨熨熨熨熨熨熨熨熨熨熨熨熨  
A0 熨熨熨熨熨熨熨熨熨熨熨熨熨  
B0 抵抵抵抵抵抵抵抵抵抵抵抵抵  
C0 貉貉貉貉貉貉貉貉貉貉貉貉貉  
D0 獎獎獎獎獎獎獎獎獎獎獎獎獎  
E0 珥珥珥珥珥珥珥珥珥珥珥珥珥  
F0 瑩瑩瑩瑩瑩瑩瑩瑩瑩瑩瑩瑩瑩

## Code page 932-E1

40 瓠瓠瓠瓠瓠瓠瓠瓠瓠瓠瓠瓠瓠  
50 甕甕甕甕甕甕甕甕甕甕甕甕甕  
60 畫畫畫畫畫畫畫畫畫畫畫畫畫  
70 疳疳疳疳疳疳疳疳疳疳疳疳  
80 痲痲痲痲痲痲痲痲痲痲痲痲痲  
90 痲痲痲痲痲痲痲痲痲痲痲痲痲  
A0 夬夬夬夬夬夬夬夬夬夬夬夬夬  
B0 斂斂斂斂斂斂斂斂斂斂斂斂斂  
C0 睨睨睨睨睨睨睨睨睨睨睨睨睨  
D0 矜矜矜矜矜矜矜矜矜矜矜矜矜  
F0 礪礪礪礪礪礪礪礪礪礪礪礪礪





# Code Page 932 Windows—31J (continuation)

Code page 932-FB

40 洳滢溟清滂淼洵澀滯漢澗澈漸瀆瀝瀆  
 50 瀨熒炫恣熹煜燬燿熾燻狃狃狃狃狃  
 60 珣珉珙珣珣珣珣珣珣珣珣珣珣珣珣  
 70 皂皤皤皤皤皤皤皤皤皤皤皤皤皤皤  
 80 祥禔福禔竝竝竝竝竝竝竝竝竝竝竝竝  
 90 鑄鑄羽茁萃葦菇蕈蕈蕈蕈蕈蕈蕈蕈蕈  
 A0 姓孺孺孺孺孺孺孺孺孺孺孺孺孺孺孺  
 B0 赶赶軌汲逸遠郎都鄉鄧鈞鈞鈞鈞鈞鈞  
 C0 鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔  
 D0 銅語鎡錚錚錚錚錚錚錚錚錚錚錚錚錚錚錚  
 E0 錚錚錚錚錚錚錚錚錚錚錚錚錚錚錚錚錚錚  
 F0 鐵鐵帶請請請請請請請請請請請請請

Code page 932-FC

40 翻粉粉粉粉粉粉粉粉粉粉粉粉粉粉  
 50  
 60  
 70  
 80  
 90  
 A0  
 B0  
 C0  
 D0  
 E0  
 F0





# Code Page 936 Simple Chinese (Continuation)

B040 - B0FF

40  
50  
60  
70  
80  
90  
A0 啊阿埃挨哎唉哀皑癌蒿矮艾碍爰隘  
B0 鞍氨安俺按按按按按按按按按按按按  
C0 袄傲奥澳澳澳澳澳澳澳澳澳澳澳澳  
D0 靶把靶坝坝坝坝坝坝坝坝坝坝坝坝  
E0 斑扳扳扳扳扳扳扳扳扳扳扳扳扳扳  
F0 梆榜榜榜榜榜榜榜榜榜榜榜榜榜榜

B140 - B1FF

40  
50  
60  
70  
80  
90  
A0 薄雹保堡堡堡堡堡堡堡堡堡堡堡堡  
B0 卑北辈背贝贝贝贝贝贝贝贝贝贝贝  
C0 崩绷绷绷绷绷绷绷绷绷绷绷绷绷绷  
D0 毙毙币庇庇庇庇庇庇庇庇庇庇庇庇  
E0 编贬扁便变下辨辨辨辨辨辨辨辨辨  
F0 别邳彬斌斌斌斌斌斌斌斌斌斌斌斌

B240 - B2FF

40  
50  
60  
70  
80  
90  
A0 病并玻菠播播播播播播播播播播播  
B0 舶膊膊膊泊泊泊泊泊泊泊泊泊泊泊  
C0 擦擦擦擦材材材材材材材材材材材  
D0 残惭惨灿灿灿灿灿灿灿灿灿灿灿  
E0 侧册测层层层层层层层层层层层层  
F0 拆柴豺搀搀搀搀搀搀搀搀搀搀搀

B340 - B3FF

40  
50  
60  
70  
80  
90  
A0 场尝常长尝肠厂敞畅唱倡超抄钞朝  
B0 嘲潮巢吵吵吵吵吵吵吵吵吵吵吵  
C0 忱沉陈趁趁趁趁趁趁趁趁趁趁趁  
D0 承逞骋秤吃痴持匙池迟弛耻齿侈尺  
E0 赤翅斥炽充冲虫崇葱抽酬畴稠愁筹  
F0 仇绸瞅丑臭初出厨厨厨厨厨厨厨

B440 - B4FF

40  
50  
60  
70  
80  
90  
A0 础储矗矗矗矗矗矗矗矗矗矗矗矗  
B0 窗幢床闯闯闯闯闯闯闯闯闯闯闯  
C0 蠢蠢蠢蠢蠢蠢蠢蠢蠢蠢蠢蠢蠢蠢  
D0 葱囱匆匆匆匆匆匆匆匆匆匆匆  
E0 脆粹粹粹粹粹粹粹粹粹粹粹粹  
F0 答瘩打大呆歹歹歹歹歹歹歹歹歹歹

B540 - B5FF

40  
50  
60  
70  
80  
90  
A0 怠耽担丹单鄂掸胆旦氖但悼诞诞  
B0 蛋当挡党档档档档档档档档档档  
C0 盗盗德得的蹬灯登等瞪凳邓堤低滴  
D0 敌笛狄狄狄狄狄狄狄狄狄狄狄  
E0 掂滇滇点典鞍垫垫垫垫垫垫垫垫  
F0 叮雕凋刁掉吊吊吊吊吊吊吊吊吊

B640 - B6FF

40  
50  
60  
70  
80  
90  
A0 丁叮叮叮顶顶顶顶顶顶顶顶顶顶  
B0 栋侗冻冻冻冻冻冻冻冻冻冻冻冻  
C0 独读堵睹睹睹睹睹睹睹睹睹睹睹  
D0 墩堆兑队对墩吨吨吨吨吨吨吨吨  
E0 多夺掇躲朵躲躲躲躲躲躲躲躲  
F0 娥恶厄扼扼扼扼扼扼扼扼扼扼扼

B740 - B7FF

40  
50  
60  
70  
80  
90  
A0 貳发罚筏伐乏阙法祛藩帆番翻樊  
B0 饥繁凡烦反返范贩犯饭泛坊芳方  
C0 防妨仿访妨放非非啡飞肥匪诽吠  
D0 沸费芬吩吩吩吩吩吩吩吩吩吩吩  
E0 粪丰封枫峰峰峰峰峰峰峰峰峰峰  
F0 佛否夫敷肤扶扶扶扶扶扶扶扶扶

# Code Page 936 Simple Chinese (Continuation)

B840 - B8FF

40  
50  
60  
70  
80  
90  
A0 浮浴播撤弗甫抚辅僧釜斧脯腑腐  
B0 赴副覆厥复傅付阜父腹负富仆附妇缚  
C0 咐喝嘎该改概钙钲涯干甘杆柑竿肝赶  
D0 感秆敢敢冈刚钢缸缸纲岗港杠篙拳蒿  
E0 膏羔糕搞稿告哥歌揭戈鸱疙疙割革  
F0 葛格始始隔隔个各给根跟耕更庚羹

B940 - B9FF

40  
50  
60  
70  
80  
90  
A0 埂耿梗工攻功恭龚供躬公宫弓巩汞  
B0 拱贯共钩勾沟苟枸垢构购够辜菇咕箍  
C0 估沽孤姑沽古古骨谷股故顾固雇刮瓜  
D0 刮寡挂褂乖拐怪怪关官冠冠管馆罐惯  
E0 灌贯光广逛逛瑰规圭圭归龟龟轨鬼诡癸  
F0 桂柜跪贵刽刽滚滚棍棍郭国果裹过哈

BA40 - BAFF

40  
50  
60  
70  
80  
90  
A0 骸孩海氦亥害骸骸骸骸骸骸骸骸骸  
B0 喊罕翰撼捍旱憾捍汗汗汗抗抗抗抗  
C0 豪毫郝好耗号浩呵喝荷荷核核核核  
D0 盒貉阖河涸赫赫赫赫赫赫赫赫赫赫  
E0 亨横衡恒轰哄哄虹虹洪宏弘红红红  
F0 吼厚候后呼乎忽壶壶葫葫葫葫葫葫

BB40 - BBFF

40  
50  
60  
70  
80  
90  
A0 弧虎唬护互沪户花哗华猾滑画划化  
B0 话槐徊怀淮坏坏环环还还缓缓患患患  
C0 涣涣宦幻荒慌黄磺磺磺磺磺磺磺磺  
D0 恍恍恢挥挥恢恢恢恢恢恢恢恢恢恢  
E0 秽会绘汇讳绘绘绘绘绘绘绘绘绘绘  
F0 火获惑惑惑惑货货击击基基基基基基

BC40 - BCFF

40  
50  
60  
70  
80  
90  
A0 肌饥迹激讥鸡姬绩缉吉极犊犊犊犊  
B0 及急疾汲即嫉级挤几脊己薊技冀季伎  
C0 祭剂悸济寄寂计记既忌际妓继纪嘉伽  
D0 夹佳家加荚颊贾甲甲甲甲甲甲甲甲  
E0 监坚尖箋间煎兼肩艰奸碱茧检柬碱硷  
F0 拣捡简俭剪减荐槛鉴践贱见健健健

BD40 - BDFF

40  
50  
60  
70  
80  
90  
A0 健舰剑剑渐渐润润建建建建建建建建  
B0 浆浆讲匠警降蕉椒礁礁礁礁礁礁礁礁  
C0 嚼嚼较较较较较较较较较较较较较较  
D0 叫客揭接管秸街阶截劫节桔杰捷捷捷  
E0 洁结解姐戒藉芥界借介疥疥疥疥疥  
F0 金今津津津津津津津津津津津津津

BE40 - BEFF

40  
50  
60  
70  
80  
90  
A0 尽劲荆兢茎茎茎茎茎茎茎茎茎茎茎茎  
B0 景颈静境敬径径径径径径径径径径  
C0 纠玖韭灸灸灸灸灸灸灸灸灸灸灸灸  
D0 拘狙疽屠驹菊局咀咀咀咀咀咀咀咀  
E0 距踞据俱句俱俱俱俱俱俱俱俱俱俱  
F0 攫抉据据据据据据据据据据据据据据

BF40 - BFFF

40  
50  
60  
70  
80  
90  
A0 俊竣浚郡駁喀咖卡喀开开开开开开  
B0 堪勘坎砍砍砍砍砍砍砍砍砍砍砍砍  
C0 珂苛柯棵磕颗科壳壳壳壳壳壳壳壳  
D0 啃垦垦坑坑坑坑坑坑坑坑坑坑坑坑  
E0 苦酷库库夸夸夸夸夸夸夸夸夸夸夸  
F0 筐筐筐筐筐筐筐筐筐筐筐筐筐筐筐

# Code Page 936 Simple Chinese (Continuation)

C040 - C0FF

40  
50  
60  
70  
80  
90  
A0 懊愧溃坤昆捆困括扩廓阔拉拉喇蜡  
B0 腊辣啦莱来赖蓝婪栏拦蓝兰澜调拽  
C0 览懒纒烂烂琅榔狼郎朗浪捞劳牢老  
D0 佬佬酪酪酪勒乐雷雷雷磊累酒全撞肋  
E0 类泪棱楞冷厘梨犁犁离理离理李里  
F0 鲤礼莉嘉吏栗丽厉励辱历利例例例

C140 - C1FF

40  
50  
60  
70  
80  
90  
A0 痢立粒沥隶力璃哩俩联连连缠缠怜  
B0 链帘敛脸恋炼练凉凉凉良良辆辆量  
C0 嘹亮凉凉聊聊疗疗僚僚辽辽了了撩撩廖料  
D0 列裂烈劣猎淋林淋霖临邻淋淋凛凛吝吝吝  
E0 拎玲菱零零龄龄伶伶伶伶伶伶伶伶伶伶伶  
F0 琉榴琉溜溜刘刘流流柳柳六六六六六六六

C240 - C2FF

40  
50  
60  
70  
80  
90  
A0 窿垄拢陇愣愣委委委委委委委委委委委  
B0 搨卤虏鲁麓碌露露露露露露露露露露露  
C0 吕侣侣旅旅履履履履履履履履履履履履履  
D0 滦卵乱乱略略略略略略略略略略略略略  
E0 萝萝萝萝萝萝萝萝萝萝萝萝萝萝萝萝萝  
F0 吗埋买买买买买买买买买买买买买买买买

C340 - C3FF

40  
50  
60  
70  
80  
90  
A0 漫芒茫盲氓忙莽猫茅猫毛矛柳卯茂  
B0 冒帽藐么么么么么么么么么么么么么  
C0 美味寐妹媚们们们们们们们们们们们  
D0 眯髓靡糜迷迷迷迷迷迷迷迷迷迷迷迷  
E0 绵冕免冕冕冕冕冕冕冕冕冕冕冕冕冕冕  
F0 灭民报血敏悯悯悯悯悯悯悯悯悯悯悯

C440 - C4FF

40  
50  
60  
70  
80  
90  
A0 摹摹模模模模模模模末末末末末末末  
B0 陌谋牟某拇牡亩姆母慕慕慕慕慕慕慕  
C0 睦牧穆拿哪呐纳那那那那那那那那那  
D0 男难囊挠挠挠挠挠挠挠挠挠挠挠挠挠  
E0 泥尼拟你匿匿逆逆逆逆逆逆逆逆逆逆逆  
F0 麒鸟尿捏聂孽啮嚼嚼嚼嚼嚼嚼嚼嚼嚼嚼

C540 - C5FF

40  
50  
60  
70  
80  
90  
A0 拧拧牛扭扭扭扭扭扭扭扭扭扭扭扭扭  
B0 虐疟那挪挪挪挪挪挪挪挪挪挪挪挪挪  
C0 爬怕怕琶拍排牌排排排排排排排排排  
D0 判叛乓庞旁胖胖胖胖胖胖胖胖胖胖胖  
E0 培裴陪陪陪陪陪陪陪陪陪陪陪陪陪  
F0 碰蓬彭朋朋朋朋朋朋朋朋朋朋朋朋朋

C640 - C6FF

40  
50  
60  
70  
80  
90  
A0 啤脾疲皮匹痞僻屁譬篇篇篇篇篇篇篇  
B0 瓢票撇瞥拼拼拼拼拼拼拼拼拼拼拼拼拼  
C0 评屏坡泼泼泼泼泼泼泼泼泼泼泼泼泼  
D0 菩葡埔朴圃圃圃圃圃圃圃圃圃圃圃圃  
E0 凄凄柒柒柒柒柒柒柒柒柒柒柒柒柒柒  
F0 起岂乞企启契契契契契契契契契契契

C740 - C7FF

40  
50  
60  
70  
80  
90  
A0 怡洽率扞扞扞扞扞扞扞扞扞扞扞扞  
B0 前潜遣浅浅浅浅浅浅浅欠欠欠欠欠欠欠  
C0 抢抢抢抢抢抢抢抢抢抢抢抢抢抢抢抢抢  
D0 切茄且怯怯怯怯怯怯怯怯怯怯怯怯怯  
E0 青轻氢倾倾倾倾倾倾倾倾倾倾倾倾倾  
F0 丘邱球求囚囚囚囚囚囚囚囚囚囚囚囚

# Code Page 936 Simple Chinese (Continuation)

C840 - C8FF

40  
50  
60  
70  
80  
90  
A0 取娶请趣去圈颞权暨泉全痊拳大寿  
B0 劝缺快痼却鹁撞碗雀裙群然燃冉染氩  
C0 壤壤嚷让饶扰烧惹热壬仁人忍韧任认  
D0 刃妊纫扔仍日戎茸蓉荣融熔溶容绒冗  
E0 揉柔肉茹茹蠕蠕濡如辱乳汝入褥软阮蕊  
F0 瑞锐闰润若弱撒洒萨颞颞蹇蹇三叁

C940 - C9FF

40  
50  
60  
70  
80  
90  
A0 伞散桑嗓丧搔搔扫嫂瑟色涩森僧莎  
B0 砂杀刹沙抄抄傻啥煞熟晒晒苦杉山删煽  
C0 衫闪陕擅擅膳膳善汕扇扇墙伤商赏响上  
D0 尚裳梢稍稍烧芍勺韶少哨部绍奢除蛇  
E0 舌舍赦赦射慑涉社设呻申呻伸身深娠  
F0 坤神沈审审婢基肾慎渗声生甥牲升绳

CA40 - CAFF

40  
50  
60  
70  
80  
90  
A0 省盛剩胜圣师失狮施湿诗尸虱十石  
B0 拾时什食蚀实识史矢使屎驶始式示士  
C0 世柿事拭誓逝势是嗜嗜适仕侍释饰氏  
D0 市恃室视试收手首守寿授售受瘦善蔬  
E0 枢梳殊抒输叔舒蔬书蔬书蔬蔬蔬蔬蔬  
F0 薯薯黍鼠鼠属术述柯束皮竖竖竖竖竖

CB40 - CBFF

40  
50  
60  
70  
80  
90  
A0 恕刷耍摔衰甩帅拴拴撞撞双爽谁水睡  
B0 税吮顺顺舜说硕朔烁烁撕嘶思私司丝  
C0 死肆寺嗣四伺何似伺已松耸丛项迷宋讼  
D0 涌涌腹腹嫩嫩苏酥俗俗速速亵亵涸涸涸  
E0 肱肱蒜蒜算算算算算算算算算算算算算  
F0 损笋蓑梭梭梭梭梭梭梭梭梭梭梭梭梭

CC40 - CCFF

40  
50  
60  
70  
80  
90  
A0 缴扯踉踏胎苔拍台泰猷太太汰男摊  
B0 贪瘁滩坛撞痰潭潭谈坦毯袒探叹炭  
C0 汤塘塘堂棠堂唐糖倘精淘趟淘掏涛滔  
D0 绦萄桃逃淘陶讨套特藤腾疼疼疼疼疼  
E0 佛提题蹄啼体替嚏惕惕惕惕惕惕惕惕  
F0 甜恬舔舔舔挑条迢迢迢迢迢迢迢迢迢

CD40 - CDFF

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A0 汀廷停亭庭挺艇遁桐桐桐同铜彤童  
B0 桶捅筒统统偷投头透凸秃突突途途途  
C0 屠土吐兔湍团推颓腿腿腿腿腿腿腿腿  
D0 托脱陀陀陀陀陀陀陀陀陀陀陀陀陀  
E0 袜歪外跪跪跪跪玩玩玩玩玩玩玩玩玩  
F0 冤冤万腕汪王亡枉网网网网网网网网

CE40 - CEFF

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A0 巍微危韦违槐围唯惟为潍推苇萎委  
B0 伟伪尾纬未蔚味畏胃喂魏位渭慰慰慰  
C0 卫瘟温蚊文闻纹吻吻吻吻吻吻吻吻吻  
D0 涡窝我鞣鞣鞣沃沃沃沃沃沃沃沃沃沃  
E0 梧梧梧梧梧梧梧梧梧梧梧梧梧梧梧  
F0 勿勿勿勿勿勿勿勿勿勿勿勿勿勿勿勿

CF40 - CFFF

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90  
A0 稀息希悉膝夕惜熄熄熄熄熄熄熄熄熄  
B0 刁媯嘉洗洗洗洗洗洗洗洗洗洗洗洗洗  
C0 侠侠下厦吓吓吓吓吓吓吓吓吓吓吓吓  
D0 闲涎弦嫌显显显显显显显显显显显显  
E0 相相相相相相相相相相相相相相相相  
F0 嫌嫌向象象象象象象象象象象象象象

# Code Page 936 Simple Chinese (Continuation)

## D040 - D0FF

40  
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90  
A0 小孝校肖啸笑效楔些歇馐鞋协扶携  
B0 邪斜助谱写械卸蟹懈泄泻谢屑薪芯铎  
C0 欣辛新忻心信衅星猩猩猩兴刑型形邢  
D0 行醒幸杏性姓兄凶胸匈油雄熊休修羞  
E0 朽嗅诱秀袖诱透戌需虚嘘须徐许蓄酗  
F0 叙旭序畜恤絮婿续纤嘘宣悉旋玄

## D140 - D1FF

40  
50  
60  
70  
80  
90  
A0 选癣眩绚靴薛学穴雪血勋薰循旬询  
B0 寻驯巡殉讯训讯迅压押鸭鸭呀丫芽  
C0 牙呀崖衙涯雅亚讶焉咽咽烟淹盐严  
D0 研巛岩延言颢罔炎沿奄掩眼演艳堰  
E0 燕厌视雁唁彦焰宴彦谗殃央鸯秧扬  
F0 佯恙羊洋阳氧仰痒痒痒漾漾腰妖妖

## D240 - D2FF

40  
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60  
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90  
A0 撬尧遥窑滔姚咬吕药要耀椰唯耶爷  
B0 野冶也页掖业叶曳掖液液一壹医携袂  
C0 依伊衣颐夷遗移仪赜疑沂宜姨彝椅蛟  
D0 倚已乙矣以艺抑易邑屹亿役逸肄疫  
E0 亦裔意毅忆义益溢诣议道译异翼翌绎  
F0 茵荫因殷音阴姻吟银淫寅饮尹引隄

## D340 - D3FF

40  
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60  
70  
80  
90  
A0 印英樱婴糜糜糜糜糜糜糜糜糜糜  
B0 影颖硬映哟拥佣雍雍雍雍雍雍雍雍  
C0 水惠勇用幽悠悠悠悠悠悠悠悠悠悠  
D0 有友右佑柚诱又幼迂淤于孟榆虞愚舆  
E0 余俞逾鱼愉渝渔隅于娱雨与屿禹宇语  
F0 羽玉域芋郢吁遇喻峪御愈欲欲欲欲

## D440 - D4FF

40  
50  
60  
70  
80  
90  
A0 浴寓裕预豫叙鸳渊冤元垣袁原援楹  
B0 园员圆猿源缘远苑愿怨院曰灼越跃钥  
C0 岳粤月悦阅耘云郑匀陨允运蕴酝晕酌  
D0 孕匝匪杂栽栽灾宰载再在咱攒赞贻  
E0 脏葬遭槽茵藻枣早澡蚤蚤蚤蚤蚤蚤蚤蚤蚤蚤  
F0 贲择则泽贼怎增憎曾赠扎嘘渣札轧

## D540 - D5FF

40  
50  
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70  
80  
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A0 剽闹眨拙榨乍炸炸炸炸炸炸炸炸炸  
B0 贻毡詹粘沾遮斩辘辘展龇栈占战站湛  
C0 绽樟章彰漳张掌涨杖丈帐胀仗胀瘵  
D0 招昭找沼赵照罩兆肇召遮折哲誓誓者  
E0 赅赅这浙斟斟真甄砾砾贞针慎枕疹  
F0 震振镇阵蒸挣挣挣挣挣挣挣挣挣挣

## D640 - D6FF

40  
50  
60  
70  
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90  
A0 锁症郑证芝枝支吱蜘知肢脂汁之织  
B0 职直殖殖执值侄址指止趾只旨纸志挚  
C0 掷至致置识峙峙制智秩稚质炙痔滞治窒  
D0 中盅忠钟衷终种肿重仲众舟周州洲迨  
E0 粥轴肘肘兕兕兕兕兕兕兕兕兕兕兕  
F0 逐竹烛煮注瞩瞩瞩主薯薯薯薯薯薯薯薯

## D740 - D7FF

40  
50  
60  
70  
80  
90  
A0 住注祝驻驻抓爪拽专砖转转撰撰撰撰  
B0 装妆撞壮状椎锥锥追赘坠缀淳准捉拙卓  
C0 桌琢茁酌啄曹灼油兹咨咨咨咨咨咨咨  
D0 仔籽滓子自渍字辵踪踪踪踪踪踪踪踪  
E0 赛赛租租足卒族祖阻阻阻阻阻阻阻阻  
F0 尊遵昨左佐作做作坐座

# Code Page 936 Simple Chinese (Continuation)

D840 - D8FF

40  
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80  
90  
A0 子丁兀丐丐廿卅丕亘丞禹吞蠶 1 萬 J  
B0 匕七夭艾厄氏凶胤墟執舉蕪、丞蠶 乜  
C0 乱元半李書緞仄厝厝摩厥斯屬廣 仁 亘  
D0 廳廳廳廳卦 卣 卣 卣 卣 卣 卣 卣 卣  
E0 剗剗剗剗剗剗剗剗剗剗剗剗剗剗剗剗剗  
F0 切伃仇伃仇伃仇伃仇伃仇伃仇伃仇

DC40 - DCFF

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50  
60  
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A0 堀塊塿塿塿塿塿塿塿塿塿塿塿塿  
B0 薯薯薯薯薯薯薯薯薯薯薯薯薯薯薯薯  
C0 蒂芰芰芰芰芰芰芰芰芰芰芰芰芰芰芰芰  
D0 芋芋芋芋芋芋芋芋芋芋芋芋芋芋芋芋  
E0 葛葛葛葛葛葛葛葛葛葛葛葛葛葛葛葛  
F0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪

D940 - D9FF

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50  
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A0 佟侗侗侗侗侗侗侗侗侗侗侗侗侗  
B0 侗侗侗侗侗侗侗侗侗侗侗侗侗侗  
C0 侗侗侗侗侗侗侗侗侗侗侗侗侗侗  
D0 侗侗侗侗侗侗侗侗侗侗侗侗侗侗  
E0 侗侗侗侗侗侗侗侗侗侗侗侗侗侗  
F0 充充充充充充充充充充充充充充充充

DD40 - DDFF

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50  
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A0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
B0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
C0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
D0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
E0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
F0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪

DA40 - DAFF

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A0 淞一家冥 1 汗江汕返詎讷诘河诘诘  
B0 诘诘诘诘诘诘诘诘诘诘诘诘诘诘  
C0 诘诘诘诘诘诘诘诘诘诘诘诘诘诘  
D0 诘诘诘诘诘诘诘诘诘诘诘诘诘诘  
E0 诘诘诘诘诘诘诘诘诘诘诘诘诘诘  
F0 啤啤啤啤啤啤啤啤啤啤啤啤啤啤啤啤

DE40 - DEFF

40  
50  
60  
70  
80  
90  
A0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
B0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
C0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
D0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
E0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪  
F0 蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪蕪

DB40 - DBFF

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A0 邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸  
B0 邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸  
C0 邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸  
D0 邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸  
E0 邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸  
F0 邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸邸

DF40 - DFFF

40  
50  
60  
70  
80  
90  
A0 摺摺摺摺摺摺摺摺摺摺摺摺摺摺摺  
B0 试试试试试试试试试试试试试试试试  
C0 呢呢呢呢呢呢呢呢呢呢呢呢呢呢呢呢  
D0 咄咄咄咄咄咄咄咄咄咄咄咄咄咄咄  
E0 咄咄咄咄咄咄咄咄咄咄咄咄咄咄咄  
F0 咄咄咄咄咄咄咄咄咄咄咄咄咄咄咄

# Code Page 936 Simple Chinese (Continuation)

E040 - E0FF

40  
50  
60  
70  
80  
90  
A0 噴噴噴噴噴噴噴噴噴噴噴噴  
B0 噴噴噴噴噴噴噴噴噴噴噴噴  
C0 噴噴噴噴噴噴噴噴噴噴噴噴  
D0 噴噴噴噴噴噴噴噴噴噴噴噴  
E0 噴噴噴噴噴噴噴噴噴噴噴噴  
F0 噴噴噴噴噴噴噴噴噴噴噴噴

E440 - E4FF

40  
50  
60  
70  
80  
90  
A0 涇涇涇涇涇涇涇涇涇涇涇涇  
B0 涇涇涇涇涇涇涇涇涇涇涇涇  
C0 涇涇涇涇涇涇涇涇涇涇涇涇  
D0 涇涇涇涇涇涇涇涇涇涇涇涇  
E0 涇涇涇涇涇涇涇涇涇涇涇涇  
F0 涇涇涇涇涇涇涇涇涇涇涇涇

E140 - E1FF

40  
50  
60  
70  
80  
90  
A0 惟惟惟惟惟惟惟惟惟惟惟惟  
B0 惟惟惟惟惟惟惟惟惟惟惟惟  
C0 惟惟惟惟惟惟惟惟惟惟惟惟  
D0 惟惟惟惟惟惟惟惟惟惟惟惟  
E0 惟惟惟惟惟惟惟惟惟惟惟惟  
F0 惟惟惟惟惟惟惟惟惟惟惟惟

E540 - E5FF

40  
50  
60  
70  
80  
90  
A0 維維維維維維維維維維維維  
B0 維維維維維維維維維維維維  
C0 維維維維維維維維維維維維  
D0 維維維維維維維維維維維維  
E0 維維維維維維維維維維維維  
F0 維維維維維維維維維維維維

E240 - E2FF

40  
50  
60  
70  
80  
90  
A0 狻狻狻狻狻狻狻狻狻狻狻狻  
B0 狻狻狻狻狻狻狻狻狻狻狻狻  
C0 狻狻狻狻狻狻狻狻狻狻狻狻  
D0 狻狻狻狻狻狻狻狻狻狻狻狻  
E0 狻狻狻狻狻狻狻狻狻狻狻狻  
F0 狻狻狻狻狻狻狻狻狻狻狻狻

E640 - E6FF

40  
50  
60  
70  
80  
90  
A0 姘姘姘姘姘姘姘姘姘姘姘姘  
B0 姘姘姘姘姘姘姘姘姘姘姘姘姘  
C0 姘姘姘姘姘姘姘姘姘姘姘姘姘  
D0 姘姘姘姘姘姘姘姘姘姘姘姘姘  
E0 姘姘姘姘姘姘姘姘姘姘姘姘姘  
F0 姘姘姘姘姘姘姘姘姘姘姘姘姘

E340 - E3FF

40  
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60  
70  
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A0 格格格格格格格格格格格格格  
B0 格格格格格格格格格格格格格格  
C0 格格格格格格格格格格格格格格  
D0 格格格格格格格格格格格格格格  
E0 格格格格格格格格格格格格格格  
F0 格格格格格格格格格格格格格格

E740 - E7FF

40  
50  
60  
70  
80  
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A0 絃絃絃絃絃絃絃絃絃絃絃絃  
B0 絃絃絃絃絃絃絃絃絃絃絃絃  
C0 絃絃絃絃絃絃絃絃絃絃絃絃  
D0 絃絃絃絃絃絃絃絃絃絃絃絃  
E0 絃絃絃絃絃絃絃絃絃絃絃絃  
F0 絃絃絃絃絃絃絃絃絃絃絃絃

# Code Page 936 Simple Chinese (Continuation)

## E840 - E8FF

40  
50  
60  
70  
80  
90  
A0 琿瑯瑯瑯瑯瑯瑯瑯瑯瑯瑯  
B0 瑯瑯瑯瑯瑯瑯瑯瑯瑯瑯瑯  
C0 枳枇枳枇枳枇枳枇枳枇枳枇  
D0 枳枇枳枇枳枇枳枇枳枇枳枇  
E0 枳枇枳枇枳枇枳枇枳枇枳枇  
F0 枳枇枳枇枳枇枳枇枳枇枳枇

## EC40 - ECFF

40  
50  
60  
70  
80  
90  
A0 戛戛戛戛戛戛戛戛戛戛戛  
B0 戛戛戛戛戛戛戛戛戛戛戛  
C0 戛戛戛戛戛戛戛戛戛戛戛  
D0 戛戛戛戛戛戛戛戛戛戛戛  
E0 戛戛戛戛戛戛戛戛戛戛戛  
F0 戛戛戛戛戛戛戛戛戛戛戛

## E940 - E9FF

40  
50  
60  
70  
80  
90  
A0 椏椏椏椏椏椏椏椏椏椏椏  
B0 椏椏椏椏椏椏椏椏椏椏椏椏  
C0 椏椏椏椏椏椏椏椏椏椏椏椏  
D0 椏椏椏椏椏椏椏椏椏椏椏椏  
E0 椏椏椏椏椏椏椏椏椏椏椏椏  
F0 椏椏椏椏椏椏椏椏椏椏椏椏

## ED40 - EDFF

40  
50  
60  
70  
80  
90  
A0 戛戛戛戛戛戛戛戛戛戛戛  
B0 戛戛戛戛戛戛戛戛戛戛戛  
C0 戛戛戛戛戛戛戛戛戛戛戛  
D0 戛戛戛戛戛戛戛戛戛戛戛  
E0 戛戛戛戛戛戛戛戛戛戛戛  
F0 戛戛戛戛戛戛戛戛戛戛戛

## EA40 - EAFF

40  
50  
60  
70  
80  
90  
A0 椏椏椏椏椏椏椏椏椏椏椏  
B0 椏椏椏椏椏椏椏椏椏椏椏椏  
C0 椏椏椏椏椏椏椏椏椏椏椏椏  
D0 椏椏椏椏椏椏椏椏椏椏椏椏  
E0 椏椏椏椏椏椏椏椏椏椏椏椏  
F0 椏椏椏椏椏椏椏椏椏椏椏椏

## EE40 - EEFF

40  
50  
60  
70  
80  
90  
A0 椏椏椏椏椏椏椏椏椏椏椏  
B0 椏椏椏椏椏椏椏椏椏椏椏椏  
C0 椏椏椏椏椏椏椏椏椏椏椏椏  
D0 椏椏椏椏椏椏椏椏椏椏椏椏  
E0 椏椏椏椏椏椏椏椏椏椏椏椏  
F0 椏椏椏椏椏椏椏椏椏椏椏椏

## EB40 - EBFF

40  
50  
60  
70  
80  
90  
A0 椏椏椏椏椏椏椏椏椏椏椏  
B0 椏椏椏椏椏椏椏椏椏椏椏椏  
C0 椏椏椏椏椏椏椏椏椏椏椏椏  
D0 椏椏椏椏椏椏椏椏椏椏椏椏  
E0 椏椏椏椏椏椏椏椏椏椏椏椏  
F0 椏椏椏椏椏椏椏椏椏椏椏椏

## EF40 - EFFF

40  
50  
60  
70  
80  
90  
A0 椏椏椏椏椏椏椏椏椏椏椏  
B0 椏椏椏椏椏椏椏椏椏椏椏椏  
C0 椏椏椏椏椏椏椏椏椏椏椏椏  
D0 椏椏椏椏椏椏椏椏椏椏椏椏  
E0 椏椏椏椏椏椏椏椏椏椏椏椏  
F0 椏椏椏椏椏椏椏椏椏椏椏椏



# Code Page 936 Simple Chinese (Continuation)

F840 - F8FF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

FC40 - FCFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

F940 - F9FF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

FD40 - FDFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

FA40 - FAFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

FE40 - FEFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

FB40 - FBFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

FF40 - FFFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0



# Code Page 949 Korean – Series i (Continuation)

## A640 - A6FF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

## A740 - A7FF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

μℓmℓdℓ ℓ kℓccmℓcℓrℓkℓrℓfℓmℓmℓmmℓcm  
kmmℓcℓrℓrℓkℓrℓhℓuℓgℓkℓkℓcℓkℓdℓB<sup>ℓ</sup>ℓ<sup>ℓ</sup>ℓ<sup>ℓ</sup>ps  
nsℓsℓmsℓpℓvℓvℓvℓkℓvℓMℓVℓpℓAℓnℓAℓμℓAℓkℓAℓpℓWℓWℓ  
ℓWℓMℓkℓWℓMℓHℓzℓkℓHℓMℓzℓGℓzℓTℓz ℓ kℓΩℓMℓQℓpℓfℓnℓFℓμℓFℓmℓ  
cdℓrℓd<sup>ℓ</sup>ℓ<sup>ℓ</sup>ℓ<sup>ℓ</sup>ℓ<sup>ℓ</sup>sr ℓPℓkℓPℓℓPℓGℓPℓWℓℓm ℓx ℓBℓqℓyℓSℓvℓ<sup>ℓ</sup>ℓ<sup>ℓ</sup>ℓ<sup>ℓ</sup>

## A840 - A8FF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

Æ Ð Æ Η Ι J L · 7 Ø Œ Ω ϐ ƒ ʘ  
ㄴ ㄷ ㄹ ㅁ ㅂ ㅅ ㅈ ㅊ ㅋ ㆁ ㆁ ㆁ ㆁ ㆁ ㆁ ㆁ ㆁ  
d e f g h i j k l m n o p q r s  
t u v w x y z 1 2 3 4 5 6 7 8 9  
10 11 12 13 14 15 1/2 1/3 2/3 1/4 3/4 1/8 3/8 5/8 7/8

## A940 - A9FF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

æ ð æ η ι j k l · 7 ø œ ω ϐ f ʘ  
n (ㄴ)(ㄷ)(ㄹ)(ㅁ)(ㅂ)(ㅅ)(ㅈ)(ㅊ)(ㅋ)(ㆁ)(ㆁ)(ㆁ)(ㆁ)(ㆁ)(ㆁ)(ㆁ)(ㆁ)  
(L)(C)(R)(A)(B)(S)(A)(Z)(C)(K)(T)(P)(H)(A)(B)(C)  
(d)(e)(f)(g)(h)(i)(j)(k)(l)(m)(n)(o)(p)(q)(r)(s)  
(t)(u)(v)(w)(x)(y)(z)(1)(2)(3)(4)(5)(6)(7)(8)(9)  
(10)(11)(12)(13)(14)(15) ' 1 2 3 4 n , . : ;

## AA40 - AAFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

あ あ い う え え お お が き ぎ く  
ぐ げ げ こ ぎ さ ざ し じ す ず せ ぜ そ ぞ た  
だ ち ち っ つ づ て で と ど な に ぬ ね の は  
ば ば ひ び び ふ ぶ ぶ へ べ べ ほ ぼ ま み  
む め も や や ゆ ゅ よ よ ら り る れ ろ わ わ  
ゐ ゑ き ん

## AB40 - ABFF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

ア ア イ ウ エ エ オ オ ガ ガ キ キ ク  
グ ケ ケ コ ゴ サ ザ シ ジ ス ズ セ ゼ ソ ゾ タ  
ダ チ チ ヅ ツ テ デ ト ナ ニ ヌ ネ ノ ハ  
バ バ ヒ ビ ビ フ ブ ヘ ベ ベ ホ ボ マ ミ  
ム メ モ ヤ ヤ ユ ユ ヨ ヨ ラ リ ル レ ロ ヲ ヲ  
キ エ ラ ン ヅ カ ケ



# Code Page 949 Korean – Series i (Continuation)

B240 - B2FF

40	
50	
60	
70	
80	
90	
A0	갹
B0	갹
C0	갹
D0	갹
E0	갹
F0	갹

B340 - B3FF

40	
50	
60	
70	
80	
90	
A0	갹
B0	갹
C0	갹
D0	갹
E0	갹
F0	갹

B440 - B4FF

40	
50	
60	
70	
80	
90	
A0	갹
B0	갹
C0	갹
D0	갹
E0	갹
F0	갹

B540 - B5FF

40	
50	
60	
70	
80	
90	
A0	갹
B0	갹
C0	갹
D0	갹
E0	갹
F0	갹

B640 - B6FF

40	
50	
60	
70	
80	
90	
A0	갹
B0	갹
C0	갹
D0	갹
E0	갹
F0	갹

B740 - B7FF

40	
50	
60	
70	
80	
90	
A0	갹
B0	갹
C0	갹
D0	갹
E0	갹
F0	갹





# Code Page 949 Korean – Series i (Continuation)

## C440 - C4FF

40	
50	
60	
70	
80	
90	
A0	치
B0	치
C0	치
D0	치
E0	치
F0	치

## C540 - C5FF

40	
50	
60	
70	
80	
90	
A0	킵
B0	킵
C0	킵
D0	킵
E0	킵
F0	킵

## C640 - C6FF

40	
50	
60	
70	
80	
90	
A0	취
B0	취
C0	취
D0	취
E0	취
F0	취

## C740 - C7FF

40	
50	
60	
70	
80	
90	
A0	괴
B0	괴
C0	괴
D0	괴
E0	괴
F0	괴

## C840 - C8FF

40	
50	
60	
70	
80	
90	
A0	회
B0	회
C0	회
D0	회
E0	회
F0	회

## C940 - C9FF

40	
50	
60	
70	
80	
90	
A0	환
B0	환
C0	환
D0	환
E0	환
F0	환

# Code Page 949 Korean – Series i and Series ii

## CA40 - CAFF

40  
50  
60  
70  
80  
90  
A0 伽佳假價加可呵哥嘉嫁家暇架枷柯  
B0 歌珂痲稼苛茄街袈訶賈劬訶迦鷄刻却  
C0 各恪慤殼珏脚覺角闊侃刊鑿奸森干幹  
D0 懇揆杆柬禪澗瘡瘡礪稗竿簡肝良嚴諫  
E0 聞芻鳴葛渴碼竭葛補緝鞠勸坎堪嵌感  
F0 憶戲敢柑橄滅甘疳監敵紺邯鑑鑿齧

## CB40 - CBFF

40  
50  
60  
70  
80  
90  
A0 匣岬甲胛鉀閻剛塢姜岡崗康強彊慷  
B0 江薑疆纒絳綱羌腔缸薑襁講綱陸鱗介  
C0 价個凱增愷慨改概溉疥皆兼箇芥薑  
D0 豈錯關喀客坑更梗夔醜倨去厓巨拒據  
E0 據舉讓炬祛距踞車遽鉅蠅乾件健巾建  
F0 恣機隨虞瘞穢壽乞傑杰桀儉劍劍檢

## CC40 - CCFF

40  
50  
60  
70  
80  
90  
A0 險鈐齡劫怯怯僂懸擗擊格檄激隔覘  
B0 隔監牽犬甄綉綉膚兒髓遺購抉決潔結  
C0 缺缺兼懶箝鎌鉗鎌京徑倭傾徹勁勁腳  
D0 坳境廣徑慶憤擊敬景曠更梗涇炁烟環  
E0 璣瓊瘡瘡瘡寬競綉綉耕耿脛璽響鏗運  
F0 鏡頃頸驚鯨係啓塹契季屆悖戒桂械

## CD40 - CDF

40  
50  
60  
70  
80  
90  
A0 磬溪界癸穉穉系繫繼計誠谿階鷄古  
B0 叩告呱圍姑孤尻廬擗攷攷攷枯構沽  
C0 瘰瘰參穉蕪考股膏苦苾菰蕪蠱袴誦賈  
D0 辜錮履履高鼓哭斛曲楷穀谷饋困坤崑  
E0 昆樞樞滾琨衰鱗汨滑骨供公共功孔工  
F0 恐恭拱控攻珙空蚣貢鞏申寡戈果瓜

## CE40 - CEFF

40  
50  
60  
70  
80  
90  
A0 科菓誇課跨過錫穎廓擗靈郭串冠官  
B0 寬憤棺款灌琯琯管鐘管觀貫關館刮劓  
C0 括適侑光匡擴廣曠洗吹狂珙儻胱饋卦  
D0 掛鄴乖傀塊壞怪愧拐槐魁宏絃肱轟交  
E0 備咬齧嬌嶠巧攪教校橋狡皎矯絞翹膠  
F0 齧蚊較鏢郊較驕較丘久九仇俱具勾

## CF40 - CFFF

40  
50  
60  
70  
80  
90  
A0 區口句咎囁坵垢寇嶮廐懼拘救枸樞  
B0 構歐酸毳求溝灸狗玖球鑿矩究綵耑臼  
C0 舅舊苟匍匍購縵逖邱鈎鈎鈎驅鳩龜龜  
D0 國局菊鞠鞠趨君審群裙辜郡堀屈掘窟  
E0 富弓寫窮苟躬倦券勸卷團拳捲權捲眷  
F0 厥厥厥厥厥機樞澳隴軌饋句晏歸貴

# Code Page 949 Korean – Series i and Series ii (Continuation)

## D040 - D0FF

40  
50  
60  
70  
80  
90  
A0 鬼龜叫圭奎揆槻珪硅窺窳糾葵規起  
B0 遠闊勻均均筠筠園鈞龜橋克剋劇戰較極  
C0 隙僅肋勳勳斤根權瑾筋芹董觀謹近謹  
D0 契今矜擠吟橋琴葵高岑衾衿襟金錦級  
E0 及急扱扱扱給亘競矜肯企伎其冀嗜器  
F0 圻基琦變奇妓寄岐崎己幾忌技旗旣

## D140 - D1FF

40  
50  
60  
70  
80  
90  
A0 菁期杞棋棄機欺氣汽沂淇玳琦琪璣  
B0 璣琦饒基礎那祗祈祺冀紀綺羈營機肌  
C0 記機豈起綺棋飢機騎駢駢駢緊信吉拮  
D0 桔金喫備喇奈娜懶懶擊拿攬羅羅蠟裸  
E0 邇那樂洛烙珞落諾酪駱亂卵暖欄煖爛  
F0 蘭離鸞捺捺南嵐柶楠滿濫男藍藍拉

## D240 - D2FF

40  
50  
60  
70  
80  
90  
A0 納臘蠟衲囊娘廊朗浪狼郎乃來內奈  
B0 奈耐冷女年撚季念恬拈捻寧寧勞勞奴  
C0 鷲怒捕捕爐爐瑞盧老盧虜路露鷲鷲鷲  
D0 綠綠茶錄錄塵論塵弄濃難雙雙農惱牢聶  
E0 腦腦雷尿疊疊樓淚瀉累纒陋嫩駒扭紐  
F0 勒肋凜凜稜稜能夔夔尼泥匿溺多茶

## D340 - D3FF

40  
50  
60  
70  
80  
90  
A0 丹單但單團壇彖斷且權段淵短端單  
B0 緞蛋袒鄴緞捷捷瀟瀟瘡瘡啖瘡瘡瘡淡  
C0 湛潭瀟疲腩膾專單談譚談奮奮答答選  
D0 唐堂塘糖糖糖糖糖糖糖糖糖糖糖糖糖糖  
E0 岱帶待戴戴戴戴戴戴戴戴戴戴戴戴戴戴  
F0 到圍墻塗導屠屠屠屠屠屠屠屠屠屠屠

## D440 - D4FF

40  
50  
60  
70  
80  
90  
A0 棹權淘濶滔濶濶濶濶濶濶濶濶濶濶  
B0 蹈逃途途都鍍陶鎔濶濶濶濶濶濶濶濶  
C0 羅羅墩墩敦敦敦敦敦敦敦敦敦敦敦敦  
D0 演動同懂東桐棟洞潼涇孺孺孺孺孺孺  
E0 斗杜抖痘痘痘痘痘痘痘痘痘痘痘痘痘  
F0 得燈燈燈燈燈燈燈燈燈燈燈燈燈燈燈

## D540 - D5FF

40  
50  
60  
70  
80  
90  
A0 羅蠟裸邇樂洛烙珞珞珞珞珞珞珞丹亂  
B0 卵欄欄欄欄欄欄欄欄欄欄欄欄欄欄欄  
C0 藍藍藍藍藍藍藍藍藍藍藍藍藍藍藍藍藍  
D0 徠萊冷掠略亮備兩涼梁樑樑樑樑樑樑  
E0 綱量侶侶侶侶侶侶侶侶侶侶侶侶侶侶  
F0 羅羅羅羅羅羅羅羅羅羅羅羅羅羅羅羅

# Code Page 949 Korean – Series i and Series ii (Continuation)

D640 - D6FF

40  
50  
60  
70  
80  
90  
A0 煉璉練聯蓮聾連鍊冽列劣冽烈裂廉  
B0 斂殄瀆贖獵令伶囡寧岑嶺伶玲苓鈴翎  
C0 聆遜鈴零靈領齡例濃權醴隸勞怒撈攆  
D0 樓潏瀟爐盧老蘆虞路絡露書蠶齒碌綠  
E0 綠萊鍊鹿麓論嬰弄麗瀾璉籠嬰備瀨牟  
F0 磊賂賈賴賈了儗寮廖料煉療瞭聊藜

D740 - D7FF

40  
50  
60  
70  
80  
90  
A0 遶聞龍疊婁屢樓淚漏獲累縷婁樓縷  
B0 陋劉旒柳榴流溜瀏琉瓠留瘤硫膠瓠六  
C0 戮陸侖倫嵩滄繪繪律慄栗率隆勒助瀆  
D0 凌榜稜稜菱陵僅利厘吏喇雁俐李梨涅  
E0 裂狸理瑣異狷離權羸利裏裡里蟹離鯉  
F0 吝消焯瑣蘭瀾闕鱗鱗林淋琳臨霖位

D840 - D8FF

40  
50  
60  
70  
80  
90  
A0 立笠粒摩瑪麻碼磨馬魔麻真幕漠膜  
B0 莫邁万巳媿密鬱慢挽晚曼滿漫灣瞞萬  
C0 蔓蠻饒饒饒詭抹末沫萊襪鞋亡妄忘忙  
D0 望網罔芒茫莽綱邛埋妹媒寐昧枚梅每  
E0 煤罵賈賈邁魅脈陌麥麥孟氓猛盲盟  
F0 萌幕覓免冕勉棉沔謁眠綿緬面麵滅

D940 - D9FF

40  
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60  
70  
80  
90  
A0 蕙冥名命明暝檢溟血冥茗蕙螟酪酪  
B0 鳴袂備冒暮姆帽慕摶暮暮某模母毛牟  
C0 牡瓊眸矛耗毫茅謀讓貌木沐牧目諍穆  
D0 驚致沒夢騰蒙卯墓妙廟描昂沓渺貓妙  
E0 苗錯務巫懣懣戊拇撫无楸武毋無瓠歛  
F0 繆舞茂蕪誣貿霧鷓墨默們勿吻聞文

DA40 - DAFF

40  
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60  
70  
80  
90  
A0 汶紊紋聞蚊門雯勿沕物味媚尾媚彌  
B0 微不至檣漢濯眉米美薇謎迷靡微岷悶  
C0 愨愨敏曼旻民泯玳珉縉閏密蜜鹽刺博  
D0 拍搏撲朴樸泊珀璞箔粕縛膊舶薄迫電  
E0 駁伴半反叛拌撥擲玳玳泮潘班畔痲盤  
F0 盼譬璠璠絆般蠟返饋飯勃拔撥渤潑

DB40 - DBFF

40  
50  
60  
70  
80  
90  
A0 發跋躑鉢髮魃傲傍坊妨尪幫仿虜放  
B0 方旁昉枋榜滂磅紡紡勝舫芳薈蚌訪勝  
C0 邦防龐倍俳北培俳拜排杯淋焙盃背胚  
D0 裴裴禡陪輩配陪伯佰卑柏栢白百魄魄  
E0 樊煩燻番幡繁蕃藩翻伐筏罰闕凡帆梵  
F0 汜汎泛犯範范法珉僻劈躄躄躄躄躄

# Code Page 949 Korean – Series i and Series ii (Continuation)

## DC40 - DCFG

40  
50  
60  
70  
80  
90  
A0 碧巖關露便下弁變辨辯邊別警驚電  
B0 丙併兵屏井晒曷柄棟炳瓶病乘竝耕餅  
C0 駢保堡報賈普步狀深潛珞兩菩補裨譜  
D0 輔伏僕加卜宓復服福腹茯荀覆覆賴賴  
E0 竊竊本恩偉奉封峯峰捧捧烽燧璫璫蓮  
F0 蜂遙鋒鳳不付俯傅副副否咐埠夫婦

## DD40 - DDFF

40  
50  
60  
70  
80  
90  
A0 孚野富府復扶敷斧浮溥父符簿缶腐  
B0 腑膚綉芙萃卦貞賦賻赴趺部釜阜附附  
C0 曷北分吩噴墳奔竄忿憤扮份份焚盆粉  
D0 糞紛芬實霧不佛弗拂拂崩朋棚棚繡繡  
E0 丕備匕匪卑妃婢庇悲憊罷批斐批樞比  
F0 慙毗毘沸泌髒痺砒碑秕秘粃緋緋肥

## DE40 - DEFF

40  
50  
60  
70  
80  
90  
A0 脾臂菲藍裨菲警費邴非飛鳳嶺嶺彬  
B0 埽橫殞浜濱瀕北玼貧實頻憑冰聘聘乍  
C0 專些仕伺似使俟儻史司叟嗣四土書裝  
D0 寫寺射巳師徒思捨糾斯梧查梭死沙泗  
E0 渣瀉瀉砂杜杞綉私篩紗絲肆舍莎賽蛇  
F0 裝詐詞謝賜赦辭邪飼駟駟削數朔樂

## DF40 - DFFF

40  
50  
60  
70  
80  
90  
A0 傘刪山散汕珊產疝算蒜酸霰送撒殺  
B0 簾薩三參杉森滲苳蓂杉插遊級媿上傷  
C0 傳償商喪營燭尙岫常床庠廟想桑樓湘  
D0 爽牀狀相祥籍翔裝臚詳象貫霏塞靈賽  
E0 疊塞種索色牲生甥省筌豎墳嶼序庶徐  
F0 愬抒摟絞暑囁書栖樓犀瑞筮架緒薯

## E040 - E0FF

40  
50  
60  
70  
80  
90  
A0 胥舒薯西誓逝鋤黍鼠夕爽席惜昔皙  
B0 析汐浙渴石碩糜釋錫仙傳先善輝宣扇  
C0 敷旋瀆燭琺瓊瓊瓊瓊禪縑縑縑縑縑  
D0 竊蟬眈眈選銑銑銑鮮高屑楔泄洩喋舌  
E0 薛衰設說霽習剗暹穢繼蟻贖閃陝攝涉  
F0 變葉城姓宓性懼成星晟猩城盛省晟

## E140 - E1FF

40  
50  
60  
70  
80  
90  
A0 聖雙臚誠醒世勢歲洗稅笹細說賈召  
B0 嘯望宵小少巢所掃掃昭梳沼消溯瀟炤  
C0 燒駭疏疎瘞笑篠蕭素紹蔬蕭蘇訴道遡  
D0 邵鎬韶驢俗屬束凍粟續讓贖速孫翼損  
E0 竊遜滾率宋悚松淞訟誦送頌剛殺瀾碎  
F0 鎖衰劍修受嗽囚垂壽媿守岫岫帥愁

# Code Page 949 Korean – Series i and Series ii (Continuation)

## E240 - E2FF

40  
50  
60  
70  
80  
90  
A0 戌手授搜收數樹殊水洙漱燧狩獸琇  
B0 璠瘦臨秀穗豎粹綬綉繡蓋倚茱萸蔞蔽  
C0 袖誰擊輪遠運酬銖綉隋隨雖爾須首  
D0 體饋叔塾夙孰宿淑瀟熟瑒璠齋政巡徇  
E0 循物旬拘擗擗拘洵溥璠盾瞬菊純霄舜  
F0 荀寡難詢諄諄諄順馴戌術述毓樂崧

## E340 - E3FF

40  
50  
60  
70  
80  
90  
A0 嵩瑟膝蠶濕拾習褶襲丞乘僧勝升承  
B0 昇纒蠅陸侍匙嘶始媿尸屨屨市弒侍施  
C0 是時神柴猶矢示翅蔣審視試詩諶冢紂  
D0 墮塞式息拭植殖湜熄策蝕識賦食飾伸  
E0 佚信呻嫵宸慎新展爐申神紳賢臣萃薪  
F0 薑贗訊身辛辰迅失室實悉審尋心沁

## E440 - E4FF

40  
50  
60  
70  
80  
90  
A0 沈深潛甚苾譜什十拾雙氏亞俄兒啞  
B0 娥娥我牙芽莪蛾衙阿雅饒鴉鴉嶽岳  
C0 拮蠟惡悞擗樂灑鄂鏗頰鱗鱗安岸按晏  
D0 窠眼雁鞍頰鯨鯨鯨軋關噉岩磨庵暗痞  
E0 菴聞壓押狎鴨仰央央央殃殃黨厓裏埃  
F0 崖爰爰漚漚艾隘隘厄扼掖液繼腋腋

## E540 - E5FF

40  
50  
60  
70  
80  
90  
A0 櫻鷺鷺鷺也郁冶夜惹椰椰爺耶若野  
B0 翮掠略約若葯蕪藥躍亮佯兩涼壤壤恙  
C0 擗擗駁鳴梁楊樑洋漢燭瘁癩癩癩癩羊  
D0 良襄諒諒諒諒量養園御於漁恣癩語駁  
E0 魚語億憶抑槐槐僂堰彥焉言諱諱諱  
F0 儼嚴奄掩淹巖巖巖兀予余勵呂女如廬

## E640 - E6FF

40  
50  
60  
70  
80  
90  
A0 旅歎汝瀟瑣瑣瑣與絲茹與壘閻餘曠  
B0 麗黎亦力域役易曆歷疫繹譚譚逆聯聯  
C0 壞妍媾宴年延機戀搗搗搗檣沈沿凝涓  
D0 淵瀆澗烟然煙煉熾燕燻研硯罕筵緣緣  
E0 續聯衍歎釐蓮蓮鉛鍊黨列劣咽悅涅烈  
F0 熱裂說聞厭厭念捷染殮炎焰琰鮑再

## E740 - E7FF

40  
50  
60  
70  
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A0 釐聞鷺鷺鳴獵場葉令固壘寧嶺嶺影  
B0 伶映瑛檣榮永泳漢穎濶濶濶熒熒瑯玲  
C0 瑛瑛瑛盈穎穎聆聆英詠迎鈴鏗零翼翼  
D0 領又倪例刈數曳汨濺猊嗜穉苻藝藝禮  
E0 商詣譽豫醜醜醜銳隸覽預五伍伍傲午吾吳  
F0 囑塙塙奧塙窟悟惡悞悞悞悞悞悞悞

# Code Page 949 Korean – Series i and Series ii (Continuation)

## E840 - E8FF

40  
50  
60  
70  
80  
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A0 烏然葵美蜈誤驚窟屋沃獄玉鈺溫瑤  
B0 瘧種縉縉兀壹擗叁雙癩翁巖雍嬰渦瓦  
C0 窩窪臥蛙蝸訖婉宛宛惋惋浣玩琬琬琯  
D0 纒馱院院莞踟阮頑曰往旺枉汪王倭娃  
E0 歪壞外寬覷撰畏了儻儻凹堯夭妖姚寧  
F0 漿原嶼拗搖挽攪料囉樂桃煉燻瑤療

## E940 - E9FF

40  
50  
60  
70  
80  
90  
A0 窈窕緜繞燿腰孽蟻要謠遙遼邀繞愨  
B0 欲浴縛縛尋備備冗勇埔埔容膺憑榕涌  
C0 湧濼熔瓊用兩變葦蕈踊鎔鑄龍于佑偶  
D0 優又友右宇寓尤愚憂吁牛玕瑪孟粘構  
E0 禹紆羽芋竊虞迂遇郵舒隅雨鴛勳噉旭  
F0 昱栲煜補郁瑣云暈禮殞濼熾軫莖莖

## EA40 - EAFF

40  
50  
60  
70  
80  
90  
A0 運隕雲韻蔚鬱朽熊雄元原員圓園垣  
B0 嫵嫵寬怨愿援沅迨漫源爰猿環苑袁轅  
C0 遠阮院願鸞月越鉞位偉僞危圍委威尉  
D0 慰贖濟爲瑋縵胃萎葦葦蕪衛禱饋遠韋  
E0 髓乳侑備俞劉唯噉孺宥幼幽庖悠惟愈  
F0 愉掄攸有杻柔柚柳檣檣油清流游溜

## EB40 - EBFF

40  
50  
60  
70  
80  
90  
A0 漚猶猷琉瓠由留德硃紐維與莢裕誘  
B0 誤踰踰踰遊逾遺酉釉鎗類六堵戮駭肉  
C0 齊陸倫允竊尹嵩滄濶玢胤質輸訖閻律  
D0 慄粟率韋戎澗絨駭隆垠恩愨股閻銀隱  
E0 乙吟淫薩陰音飲揆泣邑凝應膺厲依倚  
F0 備宜意騶擬椅毅疑矣蕪蕪蕪蕪衣釐

## EC40 - ECFE

40  
50  
60  
70  
80  
90  
A0 讓醫二以伊利吏莫嫺履已弛彝怡曷  
B0 李梨泥爾瑛理異瘳痢移權而耳肆苾蕪  
C0 裏裡貽貳還里離飴餌匯瀨益翊翌翼  
D0 隘人仁刃印吝咽因姻實引忍溼熾瑣細  
E0 茵蘭鈞認隘鞞鞞鱗鱗一佚份臺曰溢遠  
F0 鎰駟任壬妊姪恁林淋稔臨莅賃入什

## ED40 - EDFF

40  
50  
60  
70  
80  
90  
A0 立笠粒仍剩孕苻仔刺咨姊姿子字孜  
B0 恣慈滋炙熾茲瓷疵磁紫者自茨蔞蕪諮  
C0 資雌作勻嚼斫昨灼炸爵緯芍酌雀鷓厲  
D0 棧殘湧塵岑暫潛箴警麗雜丈仗匠場墻  
E0 壯獎將帳庄張掌擘杖樟櫛櫛漿滂狀獐  
F0 瓊韋粧腸麗滅莊葬蔣蓄窳裝臟儲長

# Code Page 949 Korean – Series i and Series ii (Continuation)

## EE40 - EEFF

40  
50  
60  
70  
80  
90  
A0 障再載在宰才材裁梓濺澤災緯裁財  
B0 載齋齋爭籌諍諍佇低儲咀姐底抵杵楮  
C0 樽沮渚狙猪疽著紉苧著藎阻貯躡遠  
D0 邸雖雖勛吊嫡寂敵滴狄炙的積笛籍  
E0 績響戮躡賊赤跡蹟迨迹遞鑄佃佻傳全  
F0 典前剪頃場奠專展廛悛戰痊殿氈灑

## EF40 - EFFF

40  
50  
60  
70  
80  
90  
A0 煎瑛田甸畑癩釜羹箭篆繡詮緞轉鈿  
B0 銓錄鑄電順順鏡切截折浙齧竊節絕占  
C0 站店漸点粘霰黏貼接搗蝶丁井亭停偵  
D0 呈姪定幘庭廷征情挺政整旌晶蟲椹楨  
E0 欄正汀淀淨淨漬潯烜玳斑町購錠積程  
F0 穿精緹緹訂聘貞鄭訂釘鉦鉦錠靈靖

## F040 - F0FF

40  
50  
60  
70  
80  
90  
A0 靜頂鼎制劑啼堤帝弟悌提梯濟祭第  
B0 臍齋製諸蹄醍除際霽題齊俎兆濁助喇  
C0 弔彫描操早晁曹曹朝條藥槽漕潮照燥  
D0 爪瓊跳祖祚租穉究粗糴組縲華蕪蠶韶  
E0 調趙趙進遠釣阻雕烏族蕪足蠟存尋卒  
F0 拙猝倏宗從悚慄棕涼琮種終綜縱腫

## F140 - F1FF

40  
50  
60  
70  
80  
90  
A0 踪躡鍾鍾佐坐左座挫罪主住侏倣姝  
B0 胄呪罔噉糞宙州廚蠶朱柱株注洲湊澍  
C0 炷珠購壽紂紉綢舟蛛註誅走躡躡週耐  
D0 酒鑄駐竹粥俊儂准竣嵩峻峻樽浚準潯  
E0 煖峻峻蠶遠遠駕驥茁中仲衆重卽柳樺  
F0 汁薑增憎曾拯蒸甄症縲蒸縲贈之只

## F240 - F2FF

40  
50  
60  
70  
80  
90  
A0 咫地址志持指擊支旨智枝枳止池址  
B0 漬知砥祉祗祗紙肢脂至芝芷蚰詭讎贊趾  
C0 遲直穉稷繼繼職咿噀塵振摺晉晉極極珍  
D0 漣瀦珍瓊瓊畛疹墨眞曠婁縵縵縵縵縵  
E0 診賑軫辰遠鎮陣陳嬰侄叱姪嫉快極瓊  
F0 疾秩窟腫蛭質跌迭駟朕什軟瀟縵縵

## F340 - F3FF

40  
50  
60  
70  
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A0 鑣集徽徽澄且侘借叉嗟嗟差次此礎  
B0 箭茶躡車遞捉擗擗罕錯鑿駭撰潔燦燦  
C0 瓊寘基墓祭縵縵贊贊鑿鑿鑿鑿刺察擦札紫  
D0 僂參斲慘慙慙斬站鑿鑿倉傷創喘喘廠  
E0 彰槍敵曩昃暢槍滄滄滄滄瘡瘡瘡瘡瘡  
F0 價採棗棗彩採碧綵菜棗採銀冊柵策

# Code Page 949 Korean – Series i and Series ii (Continuation)

F440 - F4FF

40  
50  
60  
70  
80  
90  
A0 賣淒妻樓處個刺剔尺憾戚拓擲斥濼  
B0 瘠腎跋涉雙仟千喘天川擲泉淺圳穿舛  
C0 蕙賤踐選釧闌阡韃凸哲詰徹撒澈綴綴  
D0 鞣鐵貪尖沾添恬膽簽籤詹諂堞妾帖捷  
E0 牒疊躑躅貼軋騰晴清聽菁請青鯖切刺  
F0 替涕潯締締遠遞體初劑哨懼抄招梢

F540 - F5FF

40  
50  
60  
70  
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90  
A0 椒楚樵炒焦硝礁礎秒稍肖艸苕草蕪  
B0 韶超詐醋醜促囈燭轟蜀觸寸付村邨叢  
C0 塚竈愚惚摠總聰聰蕙統攝備雀聳墜抽推  
D0 椎楸樞湫皺秋菊菽蕞趨遠鄒齒醜錐錘  
E0 鏈難驕嫩丑奢祝竺筑築縮薯愛蹴軸逐  
F0 春椿璿出朮黜充忠沖蟲衝衷悴薛萃

F640 - F6FF

40  
50  
60  
70  
80  
90  
A0 贊取吹嘴娶就炊翠翠脆奧趣醉驟驟  
B0 側仄厠惻測層侈值嗑峙懶駙樞治淄熾  
C0 痔痲癢稚穉縉緻置致嶺輻雉馳齒則勅  
D0 飭親七柒漆倭癭枕沈浸琛玷針鍼鑿秤  
E0 稱快他咤唾墮妥愜打掩采槽舵陀駝駝  
F0 俸卓喙垢度托拓擲暉柝濁濯琢琿託

F740 - F7FF

40  
50  
60  
70  
80  
90  
A0 鑪吞嚙坦彈憚歎灘炭綻誕奪脫探耽  
B0 耽貪塔搗構宕帑滂滂兌台太怠戇殆  
C0 汰泰答胎苔跽郤駘宅擇澤擇搗兎吐土  
D0 討懶桶洞痛簡統通堆槌腿腿退類偷委  
E0 妬投透闕惠特闕坡婆巴把播擲杷波派  
F0 爬髻破霸芭跛頗判坂板版瓣販辦飯

F840 - F8FF

40  
50  
60  
70  
80  
90  
A0 阪八叭捌俶唄恃敗沛涓牌猥稗羈貝  
B0 彭澎烹膨悞便偏扁片篇緇駟遍鞭驅貶  
C0 坪平枰萍評吠髒弊廢弊斃肺蔽閉陞佈  
D0 包匍匍咆嘯團布佈拋抱捕暴泡滿疱砲  
E0 胞腩苞葡蒲袍麥邁鋪飽鮑曠暴曝瀑爆  
F0 輻倭剝彪標杓標漂飄票表豹驕驕驕

F940 - F9FF

40  
50  
60  
70  
80  
90  
A0 品翼楓楓豐風馮彼披疲皮被避跛匹  
B0 弼必泌秘畢疋筆苾秘乏逼下何履夏履  
C0 豐河瓊荷蝦蟹選露蠟學虛謔鶴寒恨  
D0 憚卑汗瀉潑潑罕翰閑閑限轄割轄函含  
E0 威啣噉樞涵緘艦銜陷鹹合哈盒蛤閤閤  
F0 陝亢伉媿媿巷恒抗杭桁沆港缸缸航

# Code Page 949 Korean – Series i and Series ii (Continuation)

## FA40 - FAFF

40  
50  
60  
70  
80  
90  
A0 行陸項亥借咳埃奚孩害憐楷海澀蟹  
B0 解該諧選駭駭勁核倖杏苻行享向嚮  
C0 瑯鄉響銷響香噫墟虛許憲權獻軒歡險  
D0 馳奕嶸赫革偃峴弦懸曉玆炫玄玆現眩  
E0 覲絃絢縣絃街見賢鉉顯子穴血貢嫌俠  
F0 協夾峽挾決狹脅脇莢鉞頰亨兄刑型

## FB40 - FBFF

40  
50  
60  
70  
80  
90  
A0 形洞榮瀼瀼炯焚珩鑿荊鑿衡迥邢鑿  
B0 馨兮馨惠慧噤蹇蹇蹇蹇蹇蹇蹇蹇蹇  
C0 姑孤戶履吳皓臺浩漢湖滸滸滸滸滸  
D0 琉璃瓠皓皓糊縞胡葫蒿蒿虎號蠅護豪  
E0 鎬鑪顛惑惑惑婚昏混渾渾魂忽惚笏哄  
F0 弘丞泓洪烘紅虹虹鴻化和燂樺火靈

## FC40 - FCFF

40  
50  
60  
70  
80  
90  
A0 禍禾花華話譚貨靴駟擴攪確確確丸  
B0 喚喚雷幻愚換歡皖袒渙煥環紈還驪驪  
C0 活滑猾齡關鳳規規恍惶愧慌晃晃晃况  
D0 滯滯漢煇瑤璽璽璽荒蠓遠隴黃躡回迴  
E0 個慨悔懷晦會檣淮漕灰猶繪繪箇箇箇  
F0 賄劃獲弘橫橫橫嗶嗶嗶孝效駁曉鳥薄薄

## FD40 - FDFF

40  
50  
60  
70  
80  
90  
A0 爻肴醇驕侯侯厚后吼喉嗅候後朽煦  
B0 翊運勛勛墳墳燻燻燻燻燻燻燻燻燻  
C0 壹卉噉毀龔龔揮揮輝輝輝輝輝輝輝  
D0 虧恤誦誦兇凶匈匈胸胸黑昕欣忻嶺吃屹  
E0 訖訖欠欵欵吸恰洽禽與僂僂僂僂僂  
F0 謹希憲憲戲戲嗜嗜照照燻燻燻燻燻燻





# Code Page 949 Extended Korean – Series ii (Continuation)

8040 - 80FF	8440 - 84FF
40 50 60 70 80 90 A0 B0 C0 D0 E0 F0	40 50 60 70 80 90 A0 B0 C0 D0 E0 F0
<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>	<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>
8140 - 81FF	8540 - 85FF
40 50 60 70 80 90 A0 B0 C0 D0 E0 F0	40 50 60 70 80 90 A0 B0 C0 D0 E0 F0
<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>	<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>
8240 - 82FF	8640 - 86FF
40 50 60 70 80 90 A0 B0 C0 D0 E0 F0	40 50 60 70 80 90 A0 B0 C0 D0 E0 F0
<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>	<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>
8340 - 83FF	8740 - 87FF
40 50 60 70 80 90 A0 B0 C0 D0 E0 F0	40 50 60 70 80 90 A0 B0 C0 D0 E0 F0
<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>	<p>                     40 50 60 70 80 90 A0 B0 C0 D0 E0 F0                 </p>







# Code Page 950 Traditional Chinese (Continuation)

## A840 - A8FF

40 杓案步每求录沙沁沈沉沉汪泱泱汰  
50 沌汩冲浚汽沃汲汾汴沈汶沔沔泔泔  
60 灼灸炎牟牡地狄狄狂玖甬甬男甸魁叮矣  
70 私秀壳壳系翠育育背肝肘肛肚背良芒  
80  
90  
A0 芋苟覓角曹谷豆豕豕赤走走身車辛  
B0 辰迂迤迤迤迤巡邑邢邪邪那酉采里防阮  
C0 阱阪阮並乖乳事些亞享京伴依侍佳使  
D0 倦供例來侃侃併修佩桃倫併侏侏免  
E0 兒兒爾異其典冽函刻券刷刺到刮制刷  
F0 劬勤卒協卓卓卦卷卸卸取叔受味呵

## A940 - A9FF

40 咖吓咕咀呻呻咄咄兜兜呼咐呱呱和吟呢  
50 周咋命谷固坵坵坪坵坵坡坵坵坵夜華奇  
60 奈奄奔妾妻妻妹妮妮姑姆姐媼姓姊姊  
70 妳似姘孟孤季宗定官宜宙宛宛尙屈屈  
80  
90  
A0 屈岷岡岸岩岫岳岳宿帶粘帕帛帛幸  
B0 庚店府底底延弦孤驚往征徬徬忝忠怨  
C0 念忿快征怯怙怙怪怕怕性悒悒恒或戕  
D0 房戾所承拉拚拚拚搥搥拚拚搥拚拚拚拚  
E0 拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈  
F0 拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈拈

## AA40 - AAFF

40 昇服朋枋枋枕東果杏杷枇枝林杯杰板  
50 枉松析杵杵杵杵杵杵杵杵杵杵杵杵杵  
60 注泳沱泌泥河沽沽沾沾波沫沫法泓沸泄油  
70 況沮泗泗浹浹浹浹浹浹浹浹浹浹浹浹  
80  
90  
A0 炕炎炒炊灸爬爭巷版牧物狀狎狙狗  
B0 狐玩玃玃玃玃玃玃玃玃玃玃玃玃玃玃玃  
C0 社祀那囊秘空霄竺糾罔光羊者肺肥肢  
D0 肱股肱肱肱肱肱肱肱肱肱肱肱肱肱肱肱  
E0 芹花芬芥苾苾苾苾苾苾苾苾苾苾苾苾  
F0 返近部邸邸邸邸采金長門卑陀阿阻附

## AB40 - ABFF

40 跛佳兩膏非壺亭亮信僕僕僕僕僕僕僕僕  
50 促侶僕僕僕僕僕僕僕僕僕僕僕僕僕僕  
60 寶冠刺刺刺刺刺刺刺刺刺刺刺刺刺刺  
70 厚叛咬哀咨咬咬咬咬咬咬咬咬咬咬咬咬  
80  
90  
A0 哄哈咯咫咄咄咄咄咄咄咄咄咄咄咄咄  
B0 域域突突突突突突突突突突突突突突  
C0 姚姦威姦姦姦姦姦姦姦姦姦姦姦姦姦姦  
D0 嶠巷帝帝帝帝帝帝帝帝帝帝帝帝帝帝  
E0 徇徇徇徇徇徇徇徇徇徇徇徇徇徇徇徇徇  
F0 憫憫憫憫憫憫憫憫憫憫憫憫憫憫憫憫憫憫

## AC40 - ACFF

40 拯括拾控挑挂政故斫斫既春昭昭味是  
50 墨昨異昨異昨異昨異昨異昨異昨異昨異  
60 柄柑枹柚查杓杓杓杓杓杓杓杓杓杓杓  
70 殆段毒吐氣氣泉洋洲洪流津涇涇涇涇  
80  
90  
A0 活洽派淘溶泵涇涇涇涇涇涇涇涇涇涇涇  
B0 爲炳炬烟炭炸炮炮愛性粘抵狩狼狡玷  
C0 瑞玻玲珍珀玳基爾異界耿耿疫疫瘡瘡  
D0 疣癩皆皇飯盈盆盆盞省踴相層層層盼  
E0 眇矜矜矜矜矜矜矜矜矜矜矜矜矜矜矜  
F0 突芊芊籽紆紅紀初紆約紆紆紅美拜毫

## AD40 - ADFF

40 耐嬰尙耶辟辟辟辟辟辟辟辟辟辟辟辟  
50 致趾芋范茅苜苜苜苜苜苜苜苜苜苜苜苜  
60 苜苜苜苜苜苜苜苜苜苜苜苜苜苜苜苜苜  
70 計訂計實實赴赴赴赴赴赴赴赴赴赴赴赴  
80  
90  
A0 迭迨迨迨迨迨迨迨迨迨迨迨迨迨迨迨迨迨  
B0 降面革蠶非音真風飛食首香乘毫借借  
C0 做俯倦倦倦倦倦倦倦倦倦倦倦倦倦倦  
D0 僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂僂  
E0 冢凍凌准涇涇涇涇涇涇涇涇涇涇涇涇  
F0 唐嘈嘈嘈嘈嘈嘈嘈嘈嘈嘈嘈嘈嘈嘈嘈

## AE40 - AEFF

40 哦啣啣啣啣啣啣啣啣啣啣啣啣啣啣  
50 娑媯媯媯媯媯媯媯媯媯媯媯媯媯媯媯媯  
60 審家寰宮容容容容容容容容容容容容  
70 嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺嶺  
80  
90  
A0 恣恥恐恐恐恐恐恐恐恐恐恐恐恐恐恐  
B0 扇拳擊拿揜揜揜揜揜揜揜揜揜揜揜揜  
C0 揜揜揜揜揜揜揜揜揜揜揜揜揜揜揜揜揜  
D0 霏霏翮翮翮翮翮翮翮翮翮翮翮翮翮翮  
E0 桌桌桌桌桌桌桌桌桌桌桌桌桌桌桌桌  
F0 氣氣氣氣氣氣氣氣氣氣氣氣氣氣氣氣

## AF40 - AFFF

40 漚涉浮浚浴浴涌涌認認認認認認認認認  
50 烈烏參特換換換換換換換換換換換換換  
60 眸軟奮奮留留留留留留留留留留留留  
70 陶益盞盞盞盞盞盞盞盞盞盞盞盞盞盞盞  
80  
90  
A0 砥砥砥砥砥砥砥砥砥砥砥砥砥砥砥砥  
B0 殊殊殊殊殊殊殊殊殊殊殊殊殊殊殊殊  
C0 素素純純純純純純純純純純純純純純  
D0 耘耘耘耘耘耘耘耘耘耘耘耘耘耘耘耘  
E0 能能能能能能能能能能能能能能能能  
F0 荆荻荻荻荻荻荻荻荻荻荻荻荻荻荻荻荻

# Code Page 950 Traditional Chinese (Continuation)

## B040 - B0FF

40 度蚊蚪劍蚤蚱蚌蛭衰衰快枉祇記  
50 肝討紅缸託託訓訓肝誌豈封的財實起  
60 躬軒軋軋尋送送迷迷遇遇遇迷迷迷  
70 郡郡郡酒配酌的釘針劍蓋針閃院陣陸  
80  
90  
A0 陸陸除陣陸陸釘馬骨高門高東乾傳  
B0 備傳發儀佑做拿健儀儀儀儀側偷圖儀  
C0 儀儀宋墨墨剪剪勒勒務勤勤勤勤匙區區  
D0 區區參參帶帶啞啞啞啞啞啞啞啞啞啞  
E0 啤啤嘗嘗啞啞啞啞啞啞啞啞啞啞啞堆  
F0 埠埠基基堂堂培培培培培培培培培培培

## B140 - B1FF

40 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
50 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
60 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
70 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
80  
90  
A0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
B0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
C0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
D0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
E0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
F0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾

## B240 - B2FF

40 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
50 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
60 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
70 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
80  
90  
A0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
B0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
C0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
D0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
E0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
F0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙

## B340 - B3FF

40 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
50 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
60 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
70 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
80  
90  
A0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
B0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
C0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
D0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
E0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
F0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙

## B440 - B4FF

40 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
50 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
60 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
70 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
80  
90  
A0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
B0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
C0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
D0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
E0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾  
F0 媾媾媾媾媾媾媾媾媾媾媾媾媾媾媾

## B540 - B5FF

40 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
50 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
60 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
70 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
80  
90  
A0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
B0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
C0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
D0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
E0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
F0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙

## B640 - B6FF

40 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
50 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
60 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
70 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
80  
90  
A0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
B0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
C0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
D0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
E0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
F0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙

## B740 - B7FF

40 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
50 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
60 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
70 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
80  
90  
A0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
B0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
C0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
D0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
E0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙  
F0 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙

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## B840 - B8FF

40 暗羅踪睜睜睜睜碎碎碎碎碎碎碎碎  
50 確確確確確確確確確確確確確確  
60 節節節節節節節節節節節節節節  
70 著著著著著著著著著著著著著著  
80  
90  
A0 讓讓讓讓讓讓讓讓讓讓讓讓讓讓  
B0 專專專專專專專專專專專專專專  
C0 銳銳銳銳銳銳銳銳銳銳銳銳銳銳  
D0 規規規規規規規規規規規規規規  
E0 趁趁趁趁趁趁趁趁趁趁趁趁趁趁  
F0 敗敗敗敗敗敗敗敗敗敗敗敗敗敗

## BC40 - BCFF

40 劇劇劇劇劇劇劇劇劇劇劇劇劇劇  
50 嘖嘖嘖嘖嘖嘖嘖嘖嘖嘖嘖嘖嘖嘖  
60 揮揮揮揮揮揮揮揮揮揮揮揮揮揮  
70 對對對對對對對對對對對對對對  
80  
90  
A0 慫慫慫慫慫慫慫慫慫慫慫慫慫慫  
B0 擊擊擊擊擊擊擊擊擊擊擊擊擊擊  
C0 搗搗搗搗搗搗搗搗搗搗搗搗搗搗  
D0 標標標標標標標標標標標標標標  
E0 灌灌灌灌灌灌灌灌灌灌灌灌灌灌  
F0 潑潑潑潑潑潑潑潑潑潑潑潑潑潑

## B940 - B9FF

40 辟辟辟辟辟辟辟辟辟辟辟辟辟辟  
50 道道道道道道道道道道道道道道  
60 鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞  
70 雷雷雷雷雷雷雷雷雷雷雷雷雷雷  
80  
90  
A0 鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞鈞  
B0 僧僧僧僧僧僧僧僧僧僧僧僧僧僧  
C0 嘛嘛嘛嘛嘛嘛嘛嘛嘛嘛嘛嘛嘛嘛  
D0 噯噯噯噯噯噯噯噯噯噯噯噯噯噯  
E0 噯噯噯噯噯噯噯噯噯噯噯噯噯噯  
F0 噯噯噯噯噯噯噯噯噯噯噯噯噯噯

## BD40 - BDFF

40 瑾瑾瑾瑾瑾瑾瑾瑾瑾瑾瑾瑾瑾瑾  
50 瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛  
60 縹縹縹縹縹縹縹縹縹縹縹縹縹縹  
70 緘緘緘緘緘緘緘緘緘緘緘緘緘緘  
80  
90  
A0 翹翹翹翹翹翹翹翹翹翹翹翹翹翹  
B0 蕩蕩蕩蕩蕩蕩蕩蕩蕩蕩蕩蕩蕩蕩  
C0 追追追追追追追追追追追追追追  
D0 請請請請請請請請請請請請請請  
E0 賞賞賞賞賞賞賞賞賞賞賞賞賞賞  
F0 賜賜賜賜賜賜賜賜賜賜賜賜賜賜

## BA40 - BAFF

40 惡惡惡惡惡惡惡惡惡惡惡惡惡惡  
50 播播播播播播播播播播播播播播  
60 播播播播播播播播播播播播播播  
70 歡歡歡歡歡歡歡歡歡歡歡歡歡歡  
80  
90  
A0 滿滿滿滿滿滿滿滿滿滿滿滿滿滿  
B0 滿滿滿滿滿滿滿滿滿滿滿滿滿滿  
C0 瑰瑰瑰瑰瑰瑰瑰瑰瑰瑰瑰瑰瑰瑰  
D0 瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛  
E0 瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛  
F0 瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛瑛

## BE40 - BEFF

40 觀觀觀觀觀觀觀觀觀觀觀觀觀觀  
50 銷銷銷銷銷銷銷銷銷銷銷銷銷銷  
60 寫寫寫寫寫寫寫寫寫寫寫寫寫寫  
70 駝駝駝駝駝駝駝駝駝駝駝駝駝駝  
80  
90  
A0 駝駝駝駝駝駝駝駝駝駝駝駝駝駝  
B0 駝駝駝駝駝駝駝駝駝駝駝駝駝駝  
C0 駝駝駝駝駝駝駝駝駝駝駝駝駝駝  
D0 攪攪攪攪攪攪攪攪攪攪攪攪攪攪攪  
E0 攪攪攪攪攪攪攪攪攪攪攪攪攪攪攪  
F0 攪攪攪攪攪攪攪攪攪攪攪攪攪攪攪

## BB40 - BBFF

40 罰罰罰罰罰罰罰罰罰罰罰罰罰罰  
50 吳吳吳吳吳吳吳吳吳吳吳吳吳吳  
60 蒐蒐蒐蒐蒐蒐蒐蒐蒐蒐蒐蒐蒐蒐  
70 裝裝裝裝裝裝裝裝裝裝裝裝裝裝  
80  
90  
A0 說說說說說說說說說說說說說說  
B0 趕趕趕趕趕趕趕趕趕趕趕趕趕趕  
C0 鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧  
D0 鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗  
E0 鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗鉗  
F0 肅肅肅肅肅肅肅肅肅肅肅肅肅肅肅

## BF40 - BFFF

40 濃濃濃濃濃濃濃濃濃濃濃濃濃濃  
50 燕燕燕燕燕燕燕燕燕燕燕燕燕燕  
60 澄澄澄澄澄澄澄澄澄澄澄澄澄澄  
70 穆穆穆穆穆穆穆穆穆穆穆穆穆穆  
80  
90  
A0 續續續續續續續續續續續續續續  
B0 賦賦賦賦賦賦賦賦賦賦賦賦賦賦  
C0 甥甥甥甥甥甥甥甥甥甥甥甥甥甥  
D0 諱諱諱諱諱諱諱諱諱諱諱諱諱諱  
E0 穎穎穎穎穎穎穎穎穎穎穎穎穎穎  
F0 遷遷遷遷遷遷遷遷遷遷遷遷遷遷



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## C840 - C8FF

40  
50  
60  
70  
80  
90  
A0  
B0  
C0  
D0  
E0  
F0

## C940 - C9FF

40 乂乜凵匚厂万刀毛子口兀巾彳弓有与  
50 乳开仇仇仇仇仇仇仇仇仇仇仇仇仇仇  
60 毋气并非井仁仁仁仁仁仁仁仁仁仁仁  
70 兔旁宁宀余夙男余打厄仄切或劫气  
80  
90  
A0 承汎汎汎汎汎汎汎汎汎汎汎汎汎汎汎  
B0 伶伶伶伶伶伶伶伶伶伶伶伶伶伶伶伶  
C0 窃窃窃窃窃窃窃窃窃窃窃窃窃窃窃窃  
D0 妯妯妯妯妯妯妯妯妯妯妯妯妯妯妯妯  
E0 伙伙伙伙伙伙伙伙伙伙伙伙伙伙伙伙  
F0 机机机机机机机机机机机机机机机机

## CA40 - CAFF

40 刈切劫狂犷刃角乱穿网穿穿穿穿穿穿  
50 两邛邛邛邛邛邛邛邛邛邛邛邛邛邛邛  
60 还休休休休休休休休休休休休休休休  
70 劫劫劫劫劫劫劫劫劫劫劫劫劫劫劫劫  
80  
90  
A0 吡吡吡吡吡吡吡吡吡吡吡吡吡吡吡吡  
B0 彙彙彙彙彙彙彙彙彙彙彙彙彙彙彙彙  
C0 研研研研研研研研研研研研研研研研  
D0 痔痔痔痔痔痔痔痔痔痔痔痔痔痔痔痔  
E0 伙伙伙伙伙伙伙伙伙伙伙伙伙伙伙伙  
F0 抚抚抚抚抚抚抚抚抚抚抚抚抚抚抚抚

## CB40 - CBFF

40 杙杙杙杙杙杙杙杙杙杙杙杙杙杙杙杙杙  
50 劫劫劫劫劫劫劫劫劫劫劫劫劫劫劫劫  
60 劫劫劫劫劫劫劫劫劫劫劫劫劫劫劫劫  
70 疔疔疔疔疔疔疔疔疔疔疔疔疔疔疔  
80  
90  
A0 芊芊芊芊芊芊芊芊芊芊芊芊芊芊芊芊  
B0 阮阮阮阮阮阮阮阮阮阮阮阮阮阮阮阮  
C0 甸甸甸甸甸甸甸甸甸甸甸甸甸甸甸甸  
D0 刳刳刳刳刳刳刳刳刳刳刳刳刳刳刳  
E0 嘴嘴嘴嘴嘴嘴嘴嘴嘴嘴嘴嘴嘴嘴嘴嘴  
F0 囹囹囹囹囹囹囹囹囹囹囹囹囹囹囹

## CC40 - CCFF

40 地垠委弃姪姪姪姪姪姪姪姪姪姪姪姪  
50 姪姪姪姪姪姪姪姪姪姪姪姪姪姪姪姪  
60 姐岬岬岬岬岬岬岬岬岬岬岬岬岬岬岬  
70 弨弨弨弨弨弨弨弨弨弨弨弨弨弨弨弨  
80  
90  
A0 愆愆愆愆愆愆愆愆愆愆愆愆愆愆愆愆  
B0 伶凄凄抗抗抗抗抗抗抗抗抗抗抗抗抗抗  
C0 捉放折放助助助助助助助助助助助助  
D0 盼留阮阮阮阮阮阮阮阮阮阮阮阮阮阮  
E0 松松松松松松松松松松松松松松松松  
F0 泣泣泣泣泣泣泣泣泣泣泣泣泣泣泣泣

## CD40 - CDFE

40 派派派派派派派派派派派派派派派派  
50 快折臭抖抖抖抖抖抖抖抖抖抖抖抖抖抖  
60 结携携携携携携携携携携携携携携携携  
70 毗界留瘴症疴疴疴疴疴疴疴疴疴疴  
80  
90  
A0 研施的的的的的的的的的的的的的的  
B0 肺肺肺肺肺肺肺肺肺肺肺肺肺肺肺肺  
C0 茨茨茨茨茨茨茨茨茨茨茨茨茨茨茨茨  
D0 达达达达达达达达达达达达达达达达  
E0 偃偃偃偃偃偃偃偃偃偃偃偃偃偃偃偃  
F0 到到到到到到到到到到到到到到到到

## CE40 - CEFF

40 嗜嗜嗜嗜嗜嗜嗜嗜嗜嗜嗜嗜嗜嗜嗜嗜  
50 垠垠垠垠垠垠垠垠垠垠垠垠垠垠垠垠  
60 复复复复复复复复复复复复复复复复  
70 婢婢婢婢婢婢婢婢婢婢婢婢婢婢婢婢  
80  
90  
A0 卷卷卷卷卷卷卷卷卷卷卷卷卷卷卷卷  
B0 烘烘烘烘烘烘烘烘烘烘烘烘烘烘烘烘  
C0 德德德德德德德德德德德德德德德德  
D0 恫恫恫恫恫恫恫恫恫恫恫恫恫恫恫恫  
E0 振振振振振振振振振振振振振振振振  
F0 弄弄弄弄弄弄弄弄弄弄弄弄弄弄弄弄

## CF40 - CFFF

40 柜柜柜柜柜柜柜柜柜柜柜柜柜柜柜柜  
50 桡桡桡桡桡桡桡桡桡桡桡桡桡桡桡桡  
60 柎柎柎柎柎柎柎柎柎柎柎柎柎柎柎柎  
70 澳澳澳澳澳澳澳澳澳澳澳澳澳澳澳澳  
80  
90  
A0 洁洁洁洁洁洁洁洁洁洁洁洁洁洁洁洁  
B0 焮焮焮焮焮焮焮焮焮焮焮焮焮焮焮焮  
C0 猊猊猊猊猊猊猊猊猊猊猊猊猊猊猊  
D0 珺珺珺珺珺珺珺珺珺珺珺珺珺珺珺珺珺  
E0 耽耽耽耽耽耽耽耽耽耽耽耽耽耽耽耽  
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# Code Page 950 Traditional Chinese (Continuation)

## E840 - E8FF

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## E940 - E9FF

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## EA40 - EAFF

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## EB40 - EBFF

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## ED40 - EDFF

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## EF40 - EFFF

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<p>8040 - 80FF</p> <p>40 慶蚊糾糾蛋蛋蚌蚌好爽爽爽袂袂祇祇記 50 軒軒紅紅訊訊託託託託託託財財財財起 60 軒軒軒軒軒軒軒軒軒軒軒軒軒軒軒軒 70 軒軒軒軒軒軒軒軒軒軒軒軒軒軒軒軒 80 90 A0 陸陸陸陸陸陸陸陸陸陸陸陸陸陸陸陸 B0 偶偶偶偶偶偶偶偶偶偶偶偶偶偶偶偶 C0 依依依依依依依依依依依依依依依依 D0 瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟 E0 啤啤啤啤啤啤啤啤啤啤啤啤啤啤啤啤 F0 埠埠埠埠埠埠埠埠埠埠埠埠埠埠埠埠</p> <p>8140 - 81FF</p> <p>40 娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼 50 娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼 60 娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼 70 娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼娼 80 90 A0 情情情情情情情情情情情情情情情情 B0 掠掠掠掠掠掠掠掠掠掠掠掠掠掠掠掠 C0 推推推推推推推推推推推推推推推推 D0 教教教教教教教教教教教教教教教教 E0 唔唔唔唔唔唔唔唔唔唔唔唔唔唔唔唔 F0 櫻櫻櫻櫻櫻櫻櫻櫻櫻櫻櫻櫻櫻櫻櫻櫻</p> <p>8240 - 82FF</p> <p>40 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙 50 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙 60 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙 70 蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙蕙 80 90 A0 寤寤寤寤寤寤寤寤寤寤寤寤寤寤寤寤 B0 益益益益益益益益益益益益益益益益 C0 寤寤寤寤寤寤寤寤寤寤寤寤寤寤寤寤 D0 紹紹紹紹紹紹紹紹紹紹紹紹紹紹紹紹 E0 粗粗粗粗粗粗粗粗粗粗粗粗粗粗粗粗 F0 莞莞莞莞莞莞莞莞莞莞莞莞莞莞莞莞</p> <p>8340 - 83FF</p> <p>40 甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯 50 甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯 60 甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯 70 甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯甯 80 90 A0 鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧 B0 陸陸陸陸陸陸陸陸陸陸陸陸陸陸陸陸 C0 鹿鹿鹿鹿鹿鹿鹿鹿鹿鹿鹿鹿鹿鹿鹿鹿 D0 劇劇劇劇劇劇劇劇劇劇劇劇劇劇劇劇 E0 突突突突突突突突突突突突突突突突 F0 突突突突突突突突突突突突突突突突</p>	<p>8440 - 84FF</p> <p>40 啤啤啤啤啤啤啤啤啤啤啤啤啤啤啤啤 50 巖巖巖巖巖巖巖巖巖巖巖巖巖巖巖巖 60 循循循循循循循循循循循循循循循循 70 復復復復復復復復復復復復復復復復 80 90 A0 插插插插插插插插插插插插插插插插 B0 敦敦敦敦敦敦敦敦敦敦敦敦敦敦敦敦 C0 替替替替替替替替替替替替替替替替 D0 棟棟棟棟棟棟棟棟棟棟棟棟棟棟棟棟 E0 徑徑徑徑徑徑徑徑徑徑徑徑徑徑徑徑 F0 湘湘湘湘湘湘湘湘湘湘湘湘湘湘湘湘</p> <p>8540 - 85FF</p> <p>40 漑漑漑漑漑漑漑漑漑漑漑漑漑漑漑漑 50 牌牌牌牌牌牌牌牌牌牌牌牌牌牌牌牌 60 琛琛琛琛琛琛琛琛琛琛琛琛琛琛琛琛 70 皖皖皖皖皖皖皖皖皖皖皖皖皖皖皖皖 80 90 A0 窈窈窈窈窈窈窈窈窈窈窈窈窈窈窈窈窈 B0 綉綉綉綉綉綉綉綉綉綉綉綉綉綉綉綉 C0 壽壽壽壽壽壽壽壽壽壽壽壽壽壽壽壽 D0 蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊 E0 蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊蕊 F0 始始始始始始始始始始始始始始始始</p> <p>8640 - 86FF</p> <p>40 詔詔詔詔詔詔詔詔詔詔詔詔詔詔詔詔 50 實實實實實實實實實實實實實實實實 60 鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔 70 鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔鈔 80 90 A0 聞聞聞聞聞聞聞聞聞聞聞聞聞聞聞聞 B0 集集集集集集集集集集集集集集集集 C0 黃黃黃黃黃黃黃黃黃黃黃黃黃黃黃黃 D0 劇劇劇劇劇劇劇劇劇劇劇劇劇劇劇劇 E0 劇劇劇劇劇劇劇劇劇劇劇劇劇劇劇劇 F0 塔塔塔塔塔塔塔塔塔塔塔塔塔塔塔塔</p> <p>8740 - 87FF</p> <p>40 媳媳媳媳媳媳媳媳媳媳媳媳媳媳媳媳 50 感想感感感感感感感感感感感感感感感感 60 敢敢敢敢敢敢敢敢敢敢敢敢敢敢敢敢 70 構構構構構構構構構構構構構構構構 80 90 A0 楚楚楚楚楚楚楚楚楚楚楚楚楚楚楚楚 B0 榻榻榻榻榻榻榻榻榻榻榻榻榻榻榻榻 C0 滅滅滅滅滅滅滅滅滅滅滅滅滅滅滅滅 D0 煩煩煩煩煩煩煩煩煩煩煩煩煩煩煩煩 E0 鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧鄧 F0 疲疲疲疲疲疲疲疲疲疲疲疲疲疲疲疲</p>
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B0 撰撰撰撰撰撰撰撰撰撰撰撰撰撰撰撰	B0 灌灌灌灌灌灌灌灌灌灌灌灌灌灌灌灌
C0 撰撰撰撰撰撰撰撰撰撰撰撰撰撰撰撰	C0 潰潰潰潰潰潰潰潰潰潰潰潰潰潰潰潰
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F0 撰撰撰撰撰撰撰撰撰撰撰撰撰撰撰撰	F0 爐 灶 灶 灶 灶 灶 灶 灶 灶 灶 灶 灶 灶
FA40 - FAFF	FE40 - FEFF
40 有紳紳紳紳紳紳紳紳紳紳紳紳紳紳紳	40 鑪鑪鑪鑪鑪鑪鑪鑪鑪鑪鑪鑪鑪鑪鑪鑪
50 杆杆杆杆杆杆杆杆杆杆杆杆杆杆杆杆	50 瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟瀟
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70 不不不不不不不不不不不不不不不不	70 遞遞遞遞遞遞遞遞遞遞遞遞遞遞遞遞
80	80
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B0 刊刊刊刊刊刊刊刊刊刊刊刊刊刊刊刊	B0 鏘鏘鏘鏘鏘鏘鏘鏘鏘鏘鏘鏘鏘鏘鏘鏘
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D0 茹茹茹茹茹茹茹茹茹茹茹茹茹茹茹茹	D0 噴噴噴噴噴噴噴噴噴噴噴噴噴噴噴噴
E0 叻叻叻叻叻叻叻叻叻叻叻叻叻叻叻叻	E0 蒸蒸蒸蒸蒸蒸蒸蒸蒸蒸蒸蒸蒸蒸蒸蒸
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FB40 - FBFF	
40 鎔鎔鎔鎔鎔鎔鎔鎔鎔鎔鎔鎔鎔鎔鎔鎔	
50 應應應應應應應應應應應應應應應應	
60 坎坎坎坎坎坎坎坎坎坎坎坎坎坎坎坎	
70 截截截截截截截截截截截截截截截截	
80	
90	
A0 榮榮榮榮榮榮榮榮榮榮榮榮榮榮榮榮	
B0 婦婦婦婦婦婦婦婦婦婦婦婦婦婦婦婦	
C0 燻燻燻燻燻燻燻燻燻燻燻燻燻燻燻燻	
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E0 鳴鳴鳴鳴鳴鳴鳴鳴鳴鳴鳴鳴鳴鳴鳴鳴	
F0 柳柳柳柳柳柳柳柳柳柳柳柳柳柳柳柳	

# Thai Code Page Function

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## Outline

The printer supports Thai font (Code Page 874). It prints each character one by one according to the code number specified. However, Thai character basically consists of the combination of multiple characters.

The printer provides the functionality to automatically construct Thai character according to the order of specified Thai character.

To enable this functionality, the printer has to be configured to the following conditions:

- Code Page = 874
- Special Font = Mode 3 (Constructed 874) or Mode 7 (Constructed 874 Large Font or 874 LF)

Based on this setting, characters of code page 874 are constructed according to the character order sent.

# Validate Thai Code Page function

The Thai code page function is validated when the following conditions are selected.

- Online mode
- Asian Mode = OFF
- Code Page = 874

## Thai Character configuration

The character cell of Thai character is made up of a maximum 4 parts—Top level, Above level, Base line and Below level.)

- **Top Level**—places the Top level characters only. Top level character is placed on the Above characters.
- **Above Level**—places the Above level characters only. The Above level character is placed on the Base line characters.
- **Base Line**—places the Base level characters and Low code characters.
- **Below Level** —places the Below level characters. The Below level character is placed under the Base line character.



## Base line characters

- Base line characters are the characters encircled in red, purple, and pink.
- The characters encircled in purple will not have below level characters, but they are rarely used.
- The characters encircled in pink will not have top level and above level. Only the ฃ character is rarely used.
- Every character encircled in red and purple must have a top and below level.

## Top level/Above level characters

- Characters encircled in blue are Top level/Above level characters.
- Characters encircled in red and purple, and the ฃ character can be both top and above level.
- The characters encircled in blue on the fifth line can be top level when above level character exists. The fourth line characters encircled in blue can be above level only. The fifth line characters encircled in blue can be both top and above level.

## Below level characters

- Characters encircled in green are Below level characters. It is impossible that the top, above and below characters are in one character.

## Thai character data procedure

Thai character data string uses the following format:

Base character, <Below character >, <Above character>, <Top character>, Base character, .....

The printer checks whether the received character is the Base character. If the Top, Above, Below characters are sent before the Base character, these characters are ignored.

After receiving the Base character, the printer checks the next character until it receives the next Base character.

If next character is the Below character, the Above character or Top character, the NCR 7199 Series printer checks whether these Thai characters are valid for the current Base character. If

valid, the NCR 7199 Series printer merges the characters images on the Base character image. If invalid, the characters are ignored.

## Notes for this Function

This function supports standard pitch font and compressed pitch font. Thai character height is 34 dots. The below command functions change, and are different from other code pages.

SYN	<p>Add <math>n</math> Extra Dot Rows.</p> <p><b>Note</b> When CP874 is selected, the line Pitch is <math>34 + n</math> dot</p>
ESC 2	<p>Set Line Spacing to 1/6 inch.</p> <p><b>Note</b> When CP874 is selected, this command is ignored.</p>
ESC 3	<p>SetLine Spacing.</p> <p><b>Note</b> When CP874 is selected, valid parameter value is <math>\geq 34</math>.</p>

The line pitch is changed by below commands because the code page is changed.

ESC R	Select international character set.
ESC †	<p>Select character code table.</p> <p><b>Note</b> Same as ESC R.</p>
ESC %	Set/cancel the user–defined character set.
ESC L	Set page mode.
ESC S	Select standard mode.
FF	Form Feed in page mode.

## Limitation

The unicode command is ignored under the Thai code page function. When the Asian mode = *ON*, the Thai character image is not synthesized. Each character is printed separately.

# Arabic Font Support

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The printer supports the Arabic font (Code Page 1256). It prints each character one by one according to the code number specified. However, each individual Arabic character does not make sense as it changes its shape according to the context.

The printer provides the functionality to automatically transform Arabic character according to the context.

To enable this functionality, the printer has to be configured to the following conditions:

- Code Page = 1256
- Special Font = Mode 4 (Proportional Contextual 1256) or Mode 5 (Fixed Pitch Contextual 1256)

Based on this setting, following transformations are available for characters of code page 1256:

- Contextual forms
- Word ligatures
- Reverse the Arabic strings

These features can be achieved based on the proportional font and they are available according to the following conditions:

- Arabic Proportional font exist in DBCS font area.
- Asian Mode is disabled.
- Codepage 1256 is selected or Arabic characters (0600–06FF) are specified in Unicode mode.

If Arabic proportional font does not exist in the DBCS font area, the above—mentioned features are not available, and Codepage 1256 isolated characters are printed in fixed pitch.

## Contextual Forms

Arabic letters have contextual forms, depending on surrounding letters in the same word: a typical—three letter word will start with a letter in initial form, followed by a letter in medial form and, finally, by a letter in final form

Curly writing is a way to write a word with connection to all the characters in that word. This feature is supported in contextual forms.

## Word Ligatures

**Arabic Presentation Forms-A** has a few characters defined as *word ligatures* for terms frequently used in formulaic expressions in Arabic. By way of example, the common ampersand (&) represents the conjunctive word *and*. The ampersand symbol is a ligature.

## Reverse the Arabic Strings

Arabic writing is from right to left by aligning right margin. The data received by the printer will reverse the Arabic string and print as per the Arabic format, which is right to left.

# Proportional Font

The printer has the following resident proportional characters for Arabic functions (Unicode base).

Lower characters	0020–007F
Arabic (Basic)	0600–06FF, 225 characters
Arabic Supplement	0750–077F, 48 characters
Arabic Extended-A	08A0–08FF, 39 characters
Arabic Presentation Forms-A	FB50–FDFF, 535 characters
Arabic Presentation Forms-B	FE70–FEFF, 140 characters

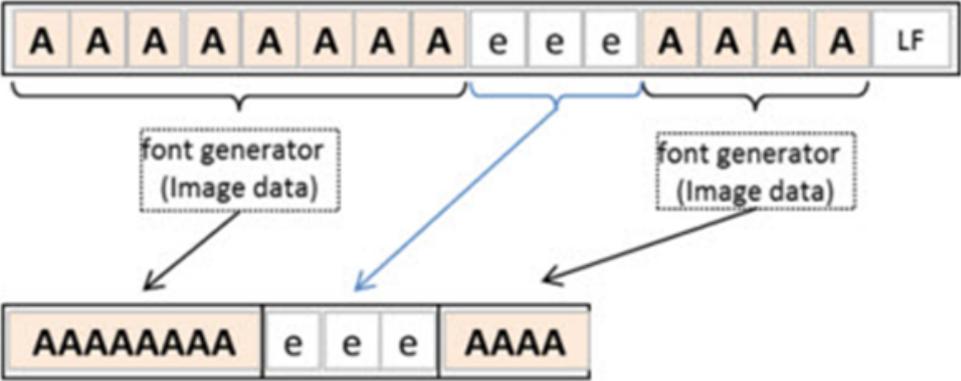
The characters of Codepage 1256 are covered by the above–mentioned characters.

# Proportional Font Conversion Handling of Arabic

Express a code as follows:

Proportional font code of Arabic (include Lower character)	A
Other codes	e
Select Unicode Mode (ESC +)	Uni IN
Cancel Unicode Mode (ESC +)	Uni OUT

Receiving data:



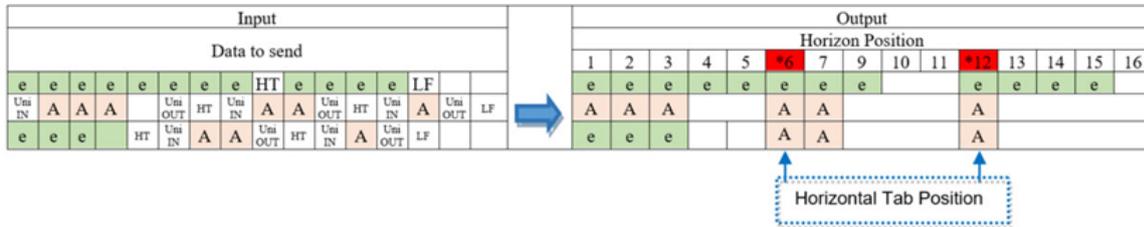
# Limitations

Due to the features of Arabic font, there are several limitations in terms of the character attributes. For more information on the command description, refer to the *NCR 7199 Series Thermal Receipt Station Printer Programmer's Guide (BCC5-0000-5170)*. Please see the command description of Print Characteristic Commands in detail.

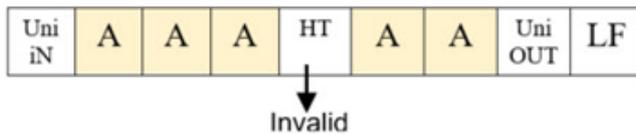
# Horizontal positioning commands

## Example

HT Horizontal Tab (6,12,18)



## Invalid case for Horizontal Tab



## Invalid command list

The following table contains a list of commands that are not available if a new Arabic character is used.

Command	Command name	Remarks
ESC DC2	Select 90 Degree Counter-Clockwise Rotated Print	
ESC SYSN	Select Pitch (Column Width)	
ESC SP	Set Character Right-Side Spacing	
ESC !	Select Print Modes	Bit0, Bit3 Invalid
ESC %	Select or Cancel User-Defined Character Set	
ESC & 3	Define User-Defined Characters	
ESC :	Copy Character Set from ROM to RAM	
ESC ?	Cancel User-Defined Characters	

Command	Command name	Remarks
ESC E	Select or Cancel Emphasized Mode	
ESC G	Select Double Strike	
ESC H	Cancel Double Strike	
ESC I	Select or Cancel Italic Print	
ESC V	Select or Cancel 90 Degrees Clockwise Rotated Print	
ESC {	Select or Cancel Upside Down Printing Mode	
US ENQ	Selects Superscript or Subscript Modes	

The following table contains a list of commands which are ignored if the command is sent in the middle of a line that includes an Arabic character.

Command	Command name	Remarks
DC2	Select Double-Wide Characters	
ESC -	Select or Cancel Underline Mode	
ESC r	Select Print Color	
GS !	Select Character Size	
GS B	Select or Cancel White/Black Reverse Printing Mode	
ESC !	Select Print Modes	Bit4, Bit5 Invalid

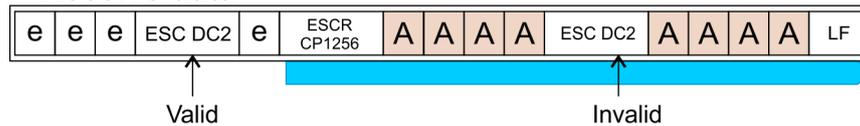
# Invalid command (example)

Below is the example to show the condition for invalid command.

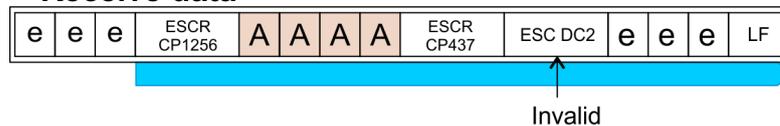
## Example

ESC DC2- Select 90 Degree Counter-Clockwise Rotated Print

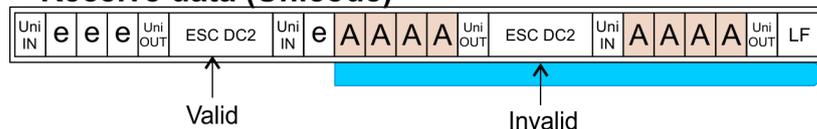
### CodePage CP437 + Receive data



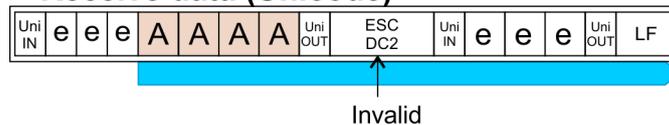
### CodePage CP437 + Receive data



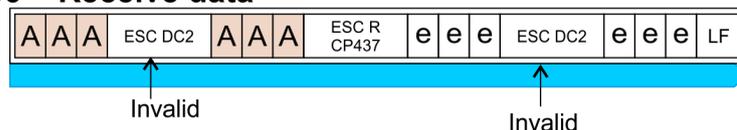
### CodePage CP437 + Receive data (Unicode)



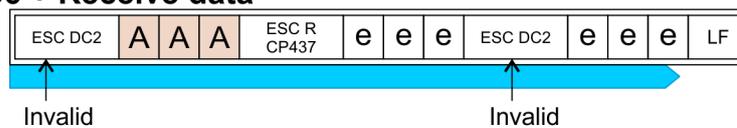
### CodePage CP437 + Receive data (Unicode)



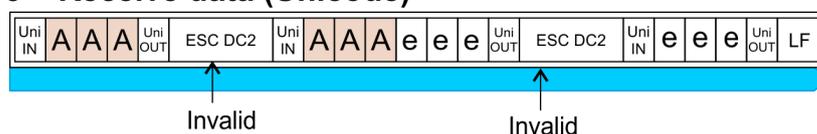
### CodePage CP1256 + Receive data



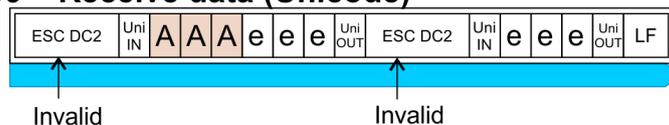
### CodePage CP1256 + Receive data



### CodePage CP1256 + Receive data (Unicode)



### CodePage CP1256 + Receive data (Unicode)



CCP-71060

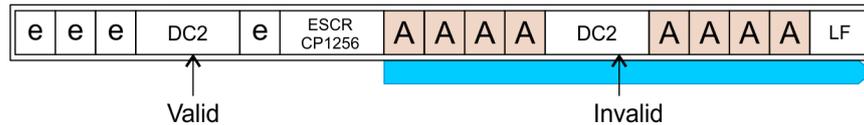
# Invalid command in middle of the line (example)

Below is the example to show the condition for invalid command in the middle of the line.

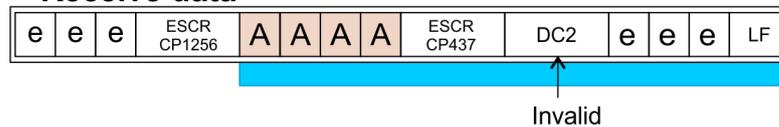
## Example

DC2 - Select Double-Wide Characters

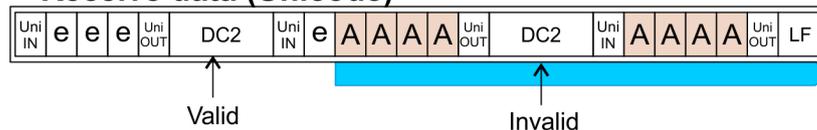
### CodePage CP437 + Receive data



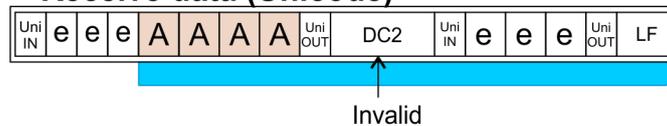
### CodePage CP437 + Receive data



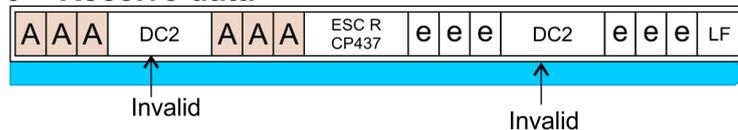
### CodePage CP437 + Receive data (Unicode)



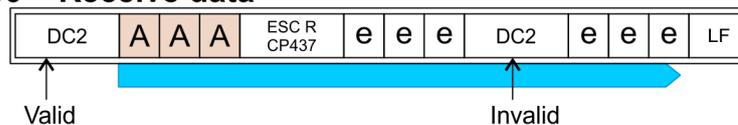
### CodePage CP437 + Receive data (Unicode)



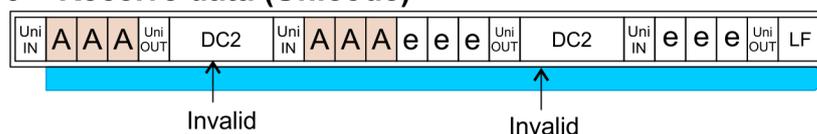
### CodePage CP1256 + Receive data



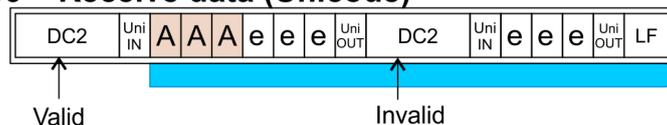
### CodePage CP1256 + Receive data



### CodePage CP1256 + Receive data (Unicode)



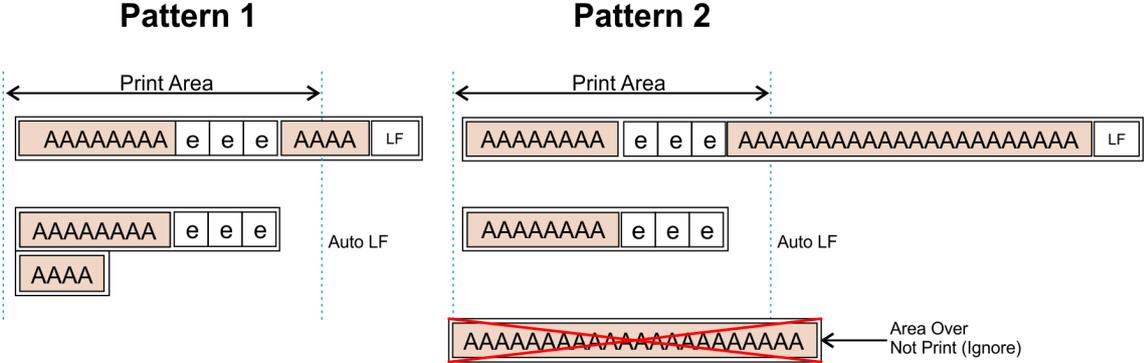
### CodePage CP1256 + Receive data (Unicode)



CCP-71061

# Printing layout (over the area)

If the Arabic character line exceeds printable area, it will be printed as below.



CCP-71062

# SBCS2, SBCS3 Font Support

There is the functionality to print the different size of SBCS font named SBCS2, SBCS3 for ESC/POS emulation.

To activate this functionality, SBCS2/SBCS3 font set has to be registered as the printer resident font. In addition to this, the printer has to be configured to SBCS2/SBCS3 font mode in Special Font setting. If SBCS2/SBCS3 font set are not registered in SBCS font data, SBCS2/SBCS3 font mode cannot be configured in Special Font setting.

Font cell size height is different between Font A and Font B in SBCS2, but it is the same in SBCS3.

## Note

48 Character Mode is not available when SBCS2, SBCS3 font is selected.

## SBCS1 Font Size

	Font Cell Size				Printable Area					
	Dots		mm		CPL		Dots		mm	
	W	H	W	H	80mm	58mm	80mm	58mm	80mm	58mm
SBCS Font A	13	24	1.63	3.00	44	32	572	416	71.57	52.05
SBCS Font B	10	24	1.25	3.00	56	42	560	420	70.07	52.55

## SBCS2 Font Size

	Font Cell Size				Printable Area					
	Dots		mm		CPL		Dots		mm	
	W	H	W	H	80mm	58mm	80mm	58mm	80mm	58mm
SBCS2 Font A	13	28	1.63	3.50	42	30	546	390	68.32	48.80
SBCS2 Font B	10	20	1.25	2.50	56	40	560	400	70.07	50.05

## SBCS3 Font Size

	Font Cell Size				Printable Area					
	Dots		mm		CPL		Dots		mm	
	W	H	W	H	80mm	58mm	80mm	58mm	80mm	58mm
SBCS3 Font A	13	28	1.63	3.50	42	30	546	390	68.32	48.80
SBCS3 Font B	10	28	1.25	3.50	56	40	560	400	70.07	50.05

# Paper End Detection

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To immediately detect paper end, the printer automatically switches to Sync. Mode 1. The printer is also set to send the batch command responses after the physical knife cut.

## Note

This feature is not related to the paper low detection condition setting. Regardless of the paper low detection setting (enabled or disabled), Sync Mode 1 switching will happen.

Sync Mode	Batch Commands Response vs Knife Cut	Sync Mode 1 Switching Internally at last 10 ft
Sync. Mode Disable	Batch command, which is coming after knife cut, are sent after the physical knife cut.  Other batch commands will reply immediately.	When the paper is at 10 ft, the printer automatically switches to Sync. Mode 1 to immediately detect paper end.
Sync. Mode Legacy	Batch commands will reply Immediately	N/A

# Paper Low Detection

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The Paper Low Sensor detects when the remaining paper length is only 40 ft. Depending on the diagnostic form setting, the firmware counts the paper length to report the Paper low warning status.

- **Paper low sensor status**—updated based on the paper low sensor detection when the remaining paper length is 40 ft.
- **Paper low warning status**—updated based on the “Paper Low Detection” setting in the Diagnostic form.

## *Series i*

Receipt Direction	Paper Low Detection (Remaining ft)	Firmware count (Sensor level – Diag setting)	Paper low warning update in Power Off/On state
Front Exit	40 ft	0	Immediate
	30 ft	10 ft	Not immediate
	20 ft	20 ft	Not immediate
	15 ft (default)	25 ft (40 to 15 ft)	Not immediate
Top Exit	40 ft	0	Not immediate
	30 ft	0	Not immediate
	20 ft	10 ft	Not immediate
	15 ft (default)	15 ft (30 to 15 ft)	Not immediate

## Series ii

Paper Low Detection (Remaining ft)	Firmware count (Sensor level – Diag setting)	Paper low warning update in Power Off/On state
40 ft	0	Immediate
30 ft	10 ft	Not immediate
20 ft	20 ft	Not immediate
15 ft (default)	25 ft (40 to 15 ft)	Not immediate

### Note

Receipt direction setting is not applicable for Series ii. Both receipt top exit and front exit are using common criteria as above table.

### Note

Take note of the following:

- When the printer is in power off/on or receipt cover open/close state and if the loaded paper does not cover the paper low sensor, the printer immediately detects paper low warning as it starts printing.
- For Series ii, printer does not support receipt direction setting. Refer to firmware count conditions of "Front Exit" only for horizontal or vertical mount.
- In the Top Exit receipt direction, the paper low sensor can detect when there is only 30 ft of paper remaining. This means that the paper low detection length is the same (at 30 ft) for both "Enable (Remaining 40ft)" and "Enable (Remaining 30ft)". After paper low sensor detection, the printer needs to print a minimum of 3 ft to detect the stable paper low. The same logic applies to printer power off and on condition that if a small paper roll is loaded and it does not cover the paper low sensor, the printer cannot immediately detect paper low warning. The printer need to print a minimum of 3 ft to detect paper low.

# Paper Low Detection Process

The following table provides the process of detecting paper low in different printer settings.

Step	Paper Low Detection Setting	
	Remaining 15ft (default), 20ft, 30ft	Remaining 40ft
1	<p>The user load a full paper roll in receipt station and starts printing.</p> <p><b>Note</b> The paper roll should cover the paper low sensor.</p>	<p>The user load a full paper roll in receipt station and starts printing.</p> <p><b>Note</b> The paper roll should cover the paper low sensor.</p>
2	<p>When the firmware detects paper low at 40 ft, the firmware saves this in the Flash ROM.</p>	<p>When the firmware detects paper low at 40 ft, the firmware saves this in the Flash ROM and the printer status is set as paper low.</p>
3	<p>The printer prints the receipt, and the firmware start to count the paper feed length.</p>	<p>The printer prints the receipt, and the firmware start to count the paper feed length.</p>
4	<p>When the paper feed reaches the next 5 ft (that is, remaining 35 ft, 30 ft, 25 ft, 20 ft, 15 ft), the firmware saves this in the Flash ROM.</p> <p><b>Note</b> If the printer is turned off and then on, the firmware does not retrieve the latest stored value. For example, if the printer is turned off after printing 2 ft of paper, the 2-ft count is lost after the printer is turned back on again.</p>	<p>When the paper feed reaches the next 5 ft (that is, remaining 35 ft, 30 ft, 25 ft, 20 ft, 15 ft), the firmware saves this in the Flash ROM.</p> <p><b>Note</b> If the printer is turned off and then on, the firmware does not retrieve the latest stored value. For example, if the printer is turned off after printing 2 ft of paper, the 2-ft count is lost after the printer is turned back on again.</p>
	<ul style="list-style-type: none"> <li>• Steps 3 and 4 continue until the configured paper low detection setting is reached.</li> <li>• At 15 ft remaining, the printer status is set as paper low.</li> <li>• At 10 ft remaining, the printer switches to Receipt Sync Mode 1 for effective paper end detection.</li> </ul>	<ul style="list-style-type: none"> <li>• Steps 3 and 4 continue until the remaining 10 ft is reached.</li> <li>• At 10 ft remaining, the printer switches to Receipt Sync Mode 1 for effective paper end detection.</li> </ul>

 **Note**

Receipt Sync Mode 1 is effective both in Paper low detection enable and disable. To check functionality related to paper low, use the larger paper roll that covers the paper roll sensor.