Owner's Manual

NCR 7169 Multifunction Printer

Release 1.0

BCC5-0000-5349
Issue I

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To maintain the quality of our publications, we need your comments on the accuracy, clarity, organization, and value of this book. Please use the link below to send your comments.

Email: FD230036@ncr.com

Preface

Audience

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

Safety Requirements

Important information to the user

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 (QQGQ), 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, 2.3 A. or 3.125 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 (QQGQ) Netzgerät der Klasse 2 mit SELV (Sekundärextraniederspannung), Nichtenergie Gefahrenausgang, begrenzter Energiequelle, einer Aufnahmeleistung von 100–240 VAC, 1.5/0.8 A und 50/60 Hz, und einer Leistungsabgabe von 24 VDC, 3.125 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, 输出为: 直流24伏, 2.3或3.125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,

안전주의사항

서비스

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퓨즈교체

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

한국 업무용(A급 기기) 방송통신기자재

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

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 immediately.

The NCR 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. 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.

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

Kommunikationskabel:

Dieses Gerät muß in Uebereinstimmung mit Kategorie A FCC Richtlinien mit einem abgeshirmten 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.

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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 7169 Multifunction Printer Service Manual* (BCC5-0000-5350)
- *NCR 7169 Multifunction Printer Parts Identification Manual* (BCC5-0000-5351)
- *NCR 7169 Multifunction Printer Migration Guide* (BCC5-0000-5353)
- *NCR 7169 Multifunction Printer Programmer's Guide* (BCC5-0000-5352)

Table of Contents

Revision Record

Issue	Date	Remarks
A	Jun 2019	First Issue

B	Oct 2019	• Updated the images on the following topics:
		  • Set MICR Dual Pass
		  • Set Buzzer Tone
		• Updated the steps on the following topics:
		  • Connecting the cables
		  • Software or hardware configuration
		• Removed "Limited Energy Source" phrase from the *Power Supply* safety information
		• Added the "Hazardous Moving Parts" caution
		• Added the "Cleaning the slip station" topic

C	Jan 2020	• Updated the "Replacing the Ribbon Cassette" procedures • Added the "Clearing Paper Jams" procedures
D	Jun 2020	Updated the *Selecting Thermal Receipt Papers* section
E	Sep 2020	Updated the Paper Low LED color from Amber to Green
F	Jan 2022	Added Koehler Blue4est® paper
G	Apr 2022	Updated instructions for resetting the printer
H	Oct 2022	• Updated the Printer Configuration Form • Updated the Software or hardware configuration Main Menu • Added CP855, CP1250, CP1251, and Unicode support (UTF-16) font configurations • Updated the *Radio Frequency Interference Statement* for China
I	Feb 2023	Added warnings in using and connecting the cash drawer

Chapter 1: NCR 7169 Multifunction Printer

General Description

The 7169 Multifunction printer is a fast, quiet, relatively small, and very reliable multiple–function printer. It prints receipts, validates and prints checks, and prints on a variety of single–part or multiple–part forms. There is no journal as it is kept electronically by the host computer.

The industry–standard USB communication interface allows the 7169 to be connected to any host computer that uses the USB communication interface. The printer is also available with an RS–232C or a LAN communication interface as option.

With thermal printing technology on the more frequently used receipt station, there is no ribbon cassette to change and paper loading is extremely simple. Printing on single–part or multiple–part forms, validating checks, and printing checks are also easy in the accommodating slip station. The 7169 features Magnetic Ink Character Recognition (MICR) check reader with parsing, which reads account numbers on checks for easy verification.

Features and Options

The NCR 7169 Multifunction Printer comes with several features and options.

Note: All models of the 7167-XXXX-YYYY, 7168-XXXX-YYYY, 7169-XXXX-YYYY, 7197, 7198-XXXX-YYYY and 7199-XXXX-YYYY have the same electrical ratings (24V⎓, 3.125A) and are in the same product family.

Receipt station

- Thermal printing
- Standard pitch (host selectable): 15.2 characters per inch, 44 columns
- Compressed pitch (host selectable): 19.0 characters per inch, 56 columns
- ECO feature
- Resident bar codes
  - Code 39
  - Code 93
  - Code 128
  - UPC-A
  - UPC-E
  - JAN8 (EAN)
  - JAN13 (EAN)
  - Interleaved 2 of 5
  - Codabar
  - PDF417
  - GS1 DataBar Omnidirectional
  - GS1 DataBar Truncated
  - GS1 DataBar Stacked
  - S1 DataBar Stacked Omnidirectional
  - GS1 DataBar Limited
  - GS1 DataBar Expanded
  - GS1 DataBar Expanded Stacked
  - QR Code
- Drop-in paper loading requiring no spindle or threading paper
- Paper low indicator
- Paper exhaust indicator

Slip station

- Bi-directional, impact printing
- Standard pitch (host selectable): 13.9 characters per inch, 45 columns
- Compressed pitch (host selectable): 17.1 characters per inch, 55 columns
- Printing of forms up to five plies
  - Front insertion of forms with forms stop
  - Side insertion of forms with override of forms stop
  - Automatic and manual insertion of forms
- Form alignment sensors and Slip In LED indicator
- Horizontal flat-bed slip table
- Snap-on ribbon cassette
- Resident bar codes
  - Code 39
  - Code 93
  - Code 128
  - UPC-A
  - UPC-E
  - JAN8 (EAN)
  - JAN13 (EAN)
  - Interleaved 2 of 5
  - Codabar

Receipt and Slip print stations

- Variety of print modes: double high (receipt station only), double strike (slip station only), double wide, upside down, and rotated
- 14 resident character language Code Pages:
  - PC Code Page 437 (US English)
  - PC Code Page 850 (Multilingual)
  - PC Code Page 852 (Slavic)
  - PC Code Page 858 (with Euro symbol)
  - PC Code Page 860 (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 (Thai)
  - PC Code Page 1252 (Windows Latin #1)
  - PC Code Page 1256
  - PC Code Page Katakana
  - CP932 (Japanese)
  - CP936 (Simplified Chinese)
  - CP949 (Korean)
  - CP950 (Traditional Chinese)
  - CP855 (IBM Cyrillic)
  - CP1250 (Windows Eastern European)
  - CP1251 (Windows Cyrillic)
  - Unicode support (UTF-16)

- Code Pages supported in Receipt Station only
  - Hungary
  - Romania
  - PC Code Page 737 (DOS Greek)
  - PC Code Page 928 (Greek)
  - PC Code Page 1255 (Hebrew)
  - HKSCS (Hong Kong Chinese)
- 64K Flash memory for downloaded character sets and 320K Flash memory for bit-mapped graphics (such as logos)

General features

- Knife
- Cover open sensors
- Industry standard USB communication interface
- One cash drawer connector (supports 2 cash drawers)
- History Flash ROM for custom settings
- Audible tone (controlled by application)

Note: The 7169 Printer does not have a paper journal. The journal is kept electronically by the host computer.

Options

- Industry standard RS-232C communication interface
- LAN communication interface
- Remote power supply

Impact print head

The bi-directional, impact print head is designed for a very long life, but it may be replaced if needed. Only a trained service technician may replace the impact print head. To determine if the print head needs to be replaced, refer to *Service Level Troubleshooting* on page 76.

Thermal print head

The 7169 Multifunction 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 nor require a scheduled maintenance. However, if it appears dirty, wipe it with cotton swabs and rubbing alcohol. If spotty or light print problems persist after cleaning the print head, refer to *Service Level Troubleshooting* on page 76.

If the recommended paper is used, the print head does not need to be regularly cleaned. If a non–recommended paper has been used for an extended period of time, cleaning the print head would not be of much benefit. For more information, refer to *Ordering Paper and Supplies* on page 57.

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. To determine if the print head needs to be replaced, refer to *Service Level Troubleshooting* on page 76.

Thermal head failure detection

The 7169 provides Thermal Head Failure Detection Function. This function detects the thermal head failure as earlier as possible and reports the failure dot count in the diagnostic form.

The following are two ways to enable this function:

- Power-on Detection—the printer must be configured through the 7169 resident firmware setup menu. Once configured, the printer executes the detection when it is turned on. The printer application needs to be modified to check the error status detected during the boot sequence.

Note: The printer application can get the result by either Real Time Status Transmission or Unsolicited Status Update.

- Manual Detection—the printer application can execute the thermal head failure detection by Execute Head Failure Detection command. The printer application needs to be modified to send the head failure detection command and check the error status.

What is in the Box

The following items are packed in the shipping box:

- Printer enclosed in a plastic bag and foam pack
- Ribbon cassette
- Thermal receipt paper roll
- Cardboard restraint for carriage (behind the Slip front cover)

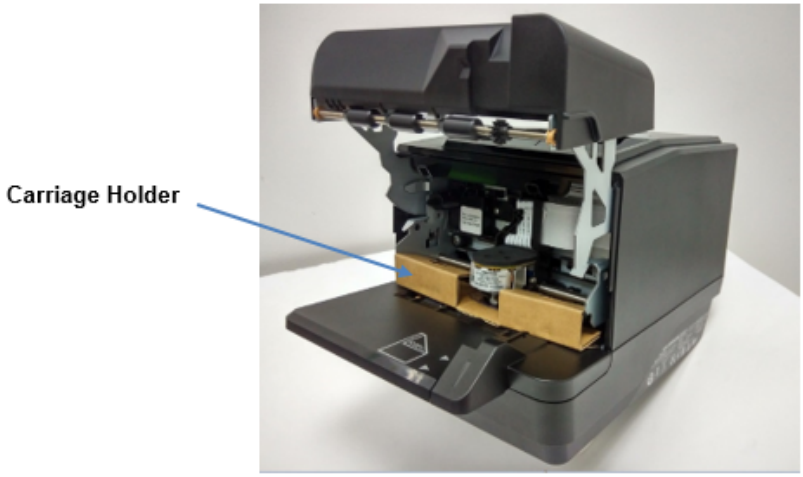
The following cables may be ordered from other equipment suppliers and are shipped separately. For more information, refer to *Ordering Paper and Supplies* on page 57.

- Communication cable (from host computer to printer)
- DC power cable
- Remote power supply
- USB plus power cables
- Cash drawer cables (may be ordered from other equipment suppliers)

Removing the packing material

To remove the packing material, follow these steps:

1. Remove the printer from the foam pack and plastic bag.
2. Open the front cover and remove the carriage holder.



3. Remove the ribbon cassette, receipt paper roll, and cables from the foam packing material.
4. Save all packing materials for future storing, moving, or shipping of the printer.

Caution: Remove the carriage holder before using the printer.

Caution: Do not pick up the printer using the slip table as a handle.

Repacking the printer

To repack the printer, follow these steps:

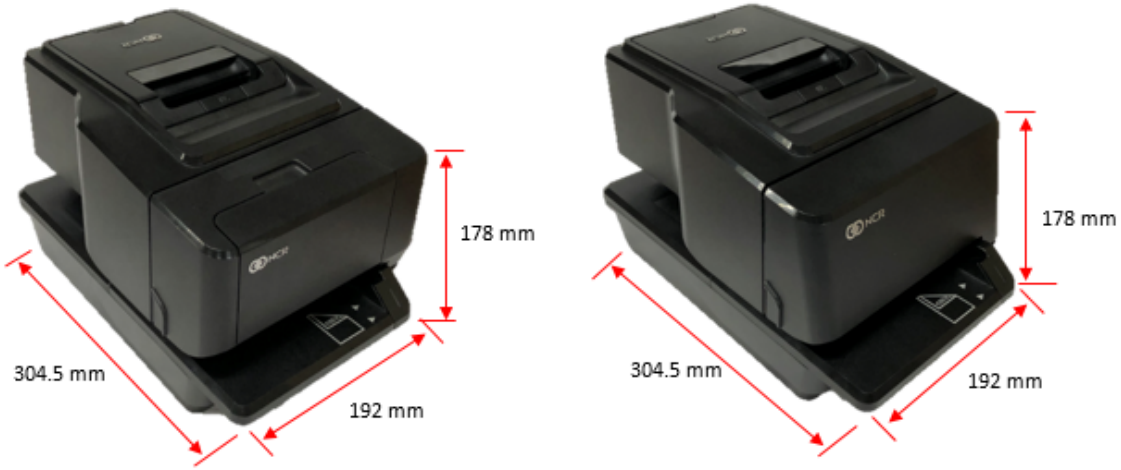
1. Place a receipt paper between the receipt cover and the print head for protection.
2. Remove the ribbon cassette, move the carriage to the corner, and place the cardboard restraint in the slip carriage area.
3. Place the cardboard support on the slip table.
4. Place the printer in the plastic bag and foam pack.
5. Place the packed printer in the box, and then secure the box with packing tape.

Note: If you are sending the printer to NCR for repair, call your NCR authorized service representative for instructions on where to send the printer. Be prepared to answer questions concerning shipping and billing.

Choosing a Location

The 7169 Multifunction 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, or to open the front cover to change the ribbon cassette. The following illustration shows the actual dimensions of the printer, but leave several inches around the printer for connecting and accessing the cables.

Note: The Magnetic Ink Character Recognition (MICR) check reader feature is designed to operate under a normal operating environment with a host computer. However, additional devices, such as CRT monitors, or large metal surfaces that are near the printer, can affect the printer's magnetic field and cause intermittent reading errors when the MICR check reader is in operation. Relocating these devices may be required to prevent this interference.



Connecting the Cables

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

- Power supply cable supplying power from the host POS terminal or from an external power supply
- Communication cable (RS-232, USB, or LAN) 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.

   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.

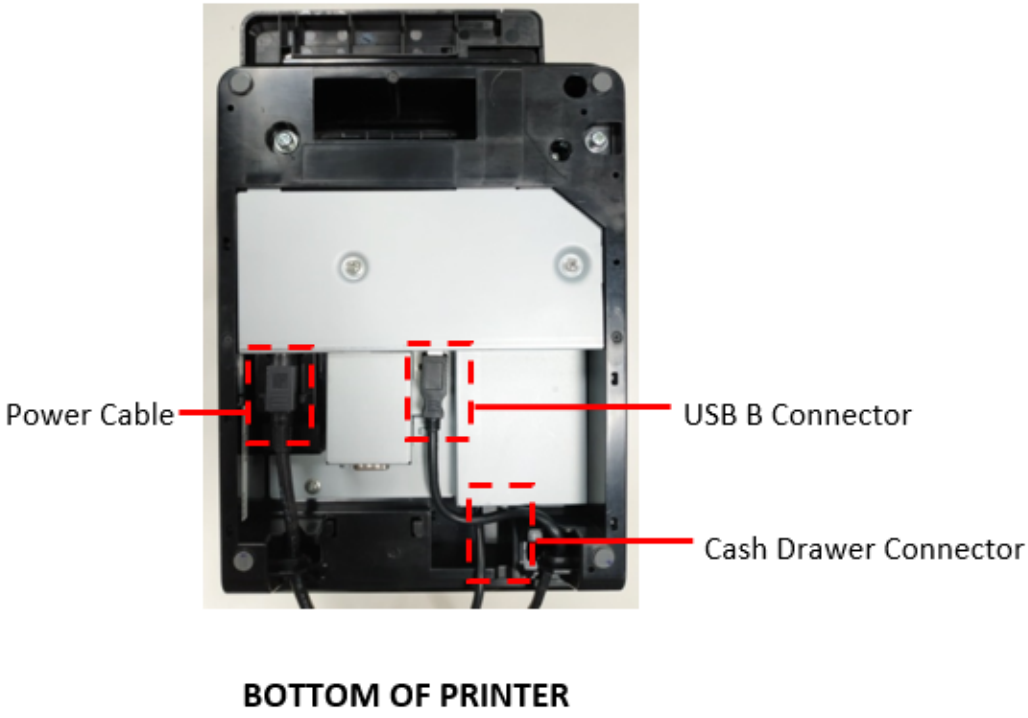
3. Connect the cash drawer cable to the printer and to the cash drawer.

   Note: The connector is a standard phone jack located at the rear of the printer.

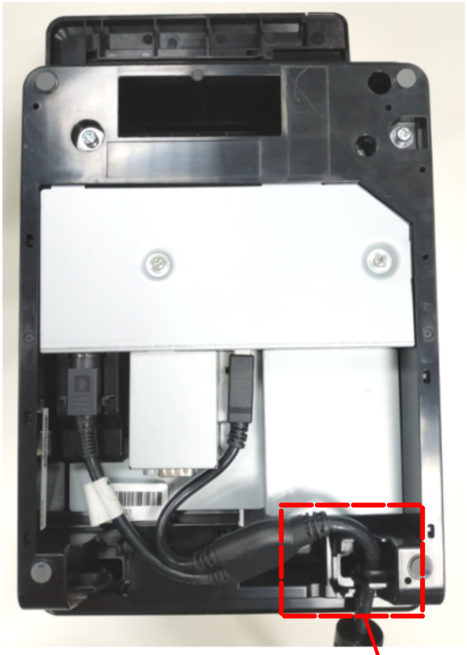
4. Connect the power cable to the printer.
5. Route the cables through the cable strain relief feature on the bottom of the printer and through the two slots in the cable access cover.
6. Reconnect the power cable to a power source.
   - For remote power supply installation, connect the power cable to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

Note: At this point, the printer receives power from its power source. If the Online LED (green) is on, the printer is online; otherwise, the printer is not receiving power. Check to ensure that the host terminal or the power supply is on.

USB cable connection

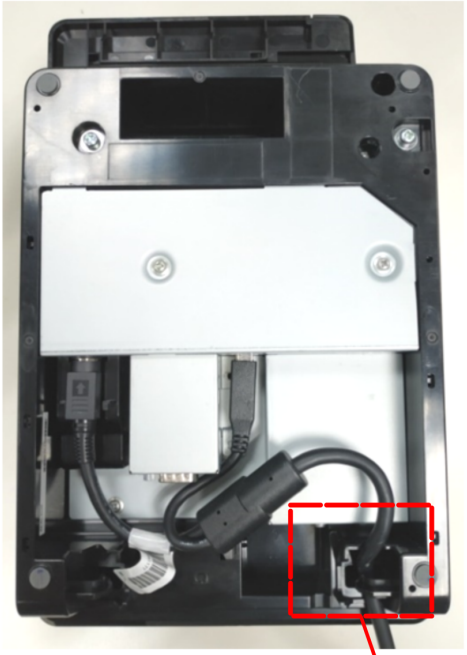


Different types of Y–cable routing method



Y-Cable Type B

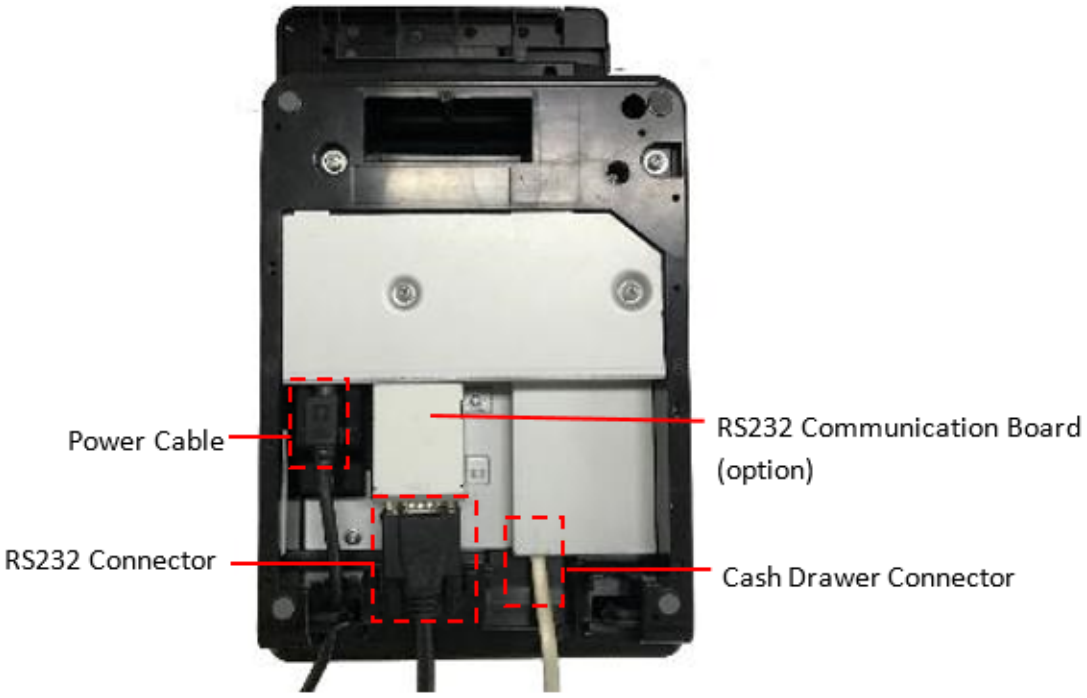
ID Numbers:
1416-C640-0010
1416-C713-0010
1416-C881-0010
1432-C086-0010
1432-C088-0010
1432-C328-0040
1432-C402-0040
1432-C403-0040
1432-C404-0040



Y-Cable Type C

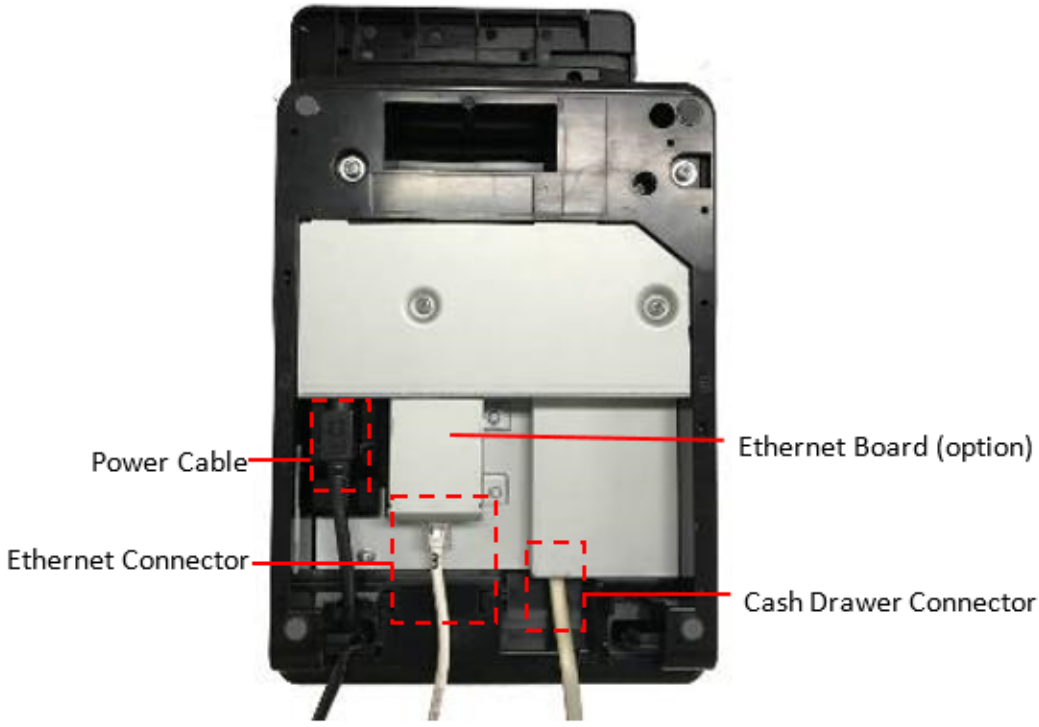
ID Numbers:
1416-C640-0010
1416-C713-0010
1416-C881-0010
1432-C086-0010
1432-C088-0010
1432-C328-0040
1432-C402-0040
1432-C403-0040
1432-C404-0040

RS–232 cable connection (Optional)



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

Ethernet cable connection (Optional)



BOTTOM OF PRINTER

About the Universal Serial Bus

The Universal Serial Bus (USB) is a peripheral bus for personal computers that was first released in January 1996. Since that time, virtually all Intel Architecture personal computers have the hardware to support USB, and a large number of computers exist that have both the hardware and software support required to interface with USB peripherals.

Advantages of USB connections

USB has a number of advantages over legacy connection schemes, for example, the serial RS-232. These advantages include:

- High speed: up to 12 MB/second for high-speed devices.
- Plug and play: Devices are automatically recognized and configured at installation.
- Hot plug: Bus supports installation and removal of devices with the power applied.
- Up to 127 devices: One host can support up to 127 devices with the use of hubs.
- "Free ports": Most PC architecture machines contain two USB ports in the base hardware.

These advantages have become attractive to the POS industry for a couple of reasons.

Additional POS devices

Some POS systems are required to host more peripherals than can be supported by two RS-232 ports typical in a platform. With the addition of one or two USB connectors, the platform can support the additional devices that had previously required a serial port expander card.

Higher bandwidths

New devices coming into use have bandwidth requirements that are higher than the bandwidth that can be supported on legacy interfaces. As the speed and capability of POS printers increases, the performance of the printer in an application can become limited by the speed of the communications interface. USB provides ample bandwidth to support current and future POS printer requirements.

Advantages of the NCR USB solution

NCR has eliminated any cost associated with porting applications to USB by implementing a USB solution that simulates standard serial communications in Windows 98 (SR2), NT 4.0 (Service Pack 3 or higher) and Windows 2000. Application developers need only redirect their software to the virtual serial ports created by the NCR USB solution to use the printer.

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 POSReady 2009 operating system natively supports plug–and–play USB with a built–in driver.

Note: You need an Internet access to download the USB drivers from the NCR Web site: *http://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. Select **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.

Configuring the Printer

Use the Configuration Menu to select functions or change various settings as indicated in the next sections. The Configuration Menu prints 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 any of the following:

- While opening and closing the slip cover door, press and hold the Paper Feed button.
- While disconnecting and reconnecting the power cable, press and hold the Paper Feed button.

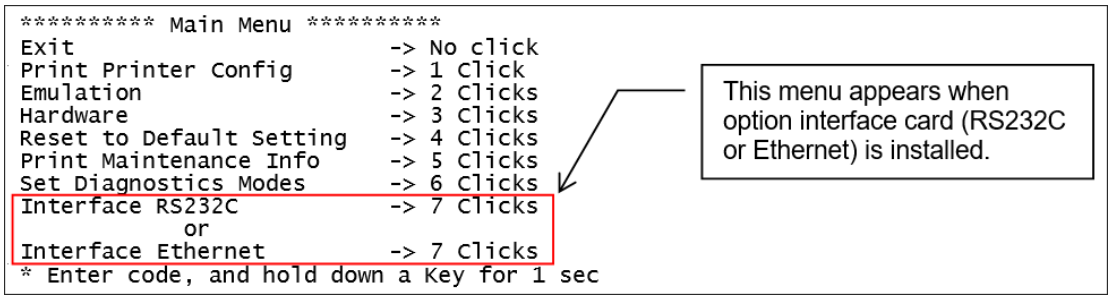
The printer prints a configuration menu that can be navigated with presses of the feed button.

Software or hardware configuration

To configure the software or hardware, follow these steps:

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

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.



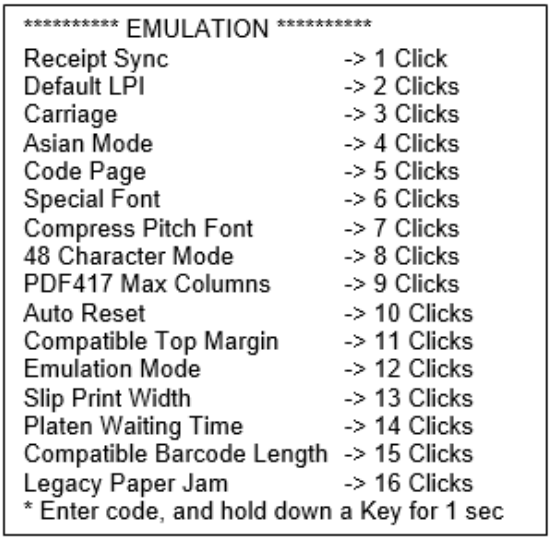
4. Press the paper feed button according to the number of clicks presented in the main menu, and then hold the button down for at least one second to validate.

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

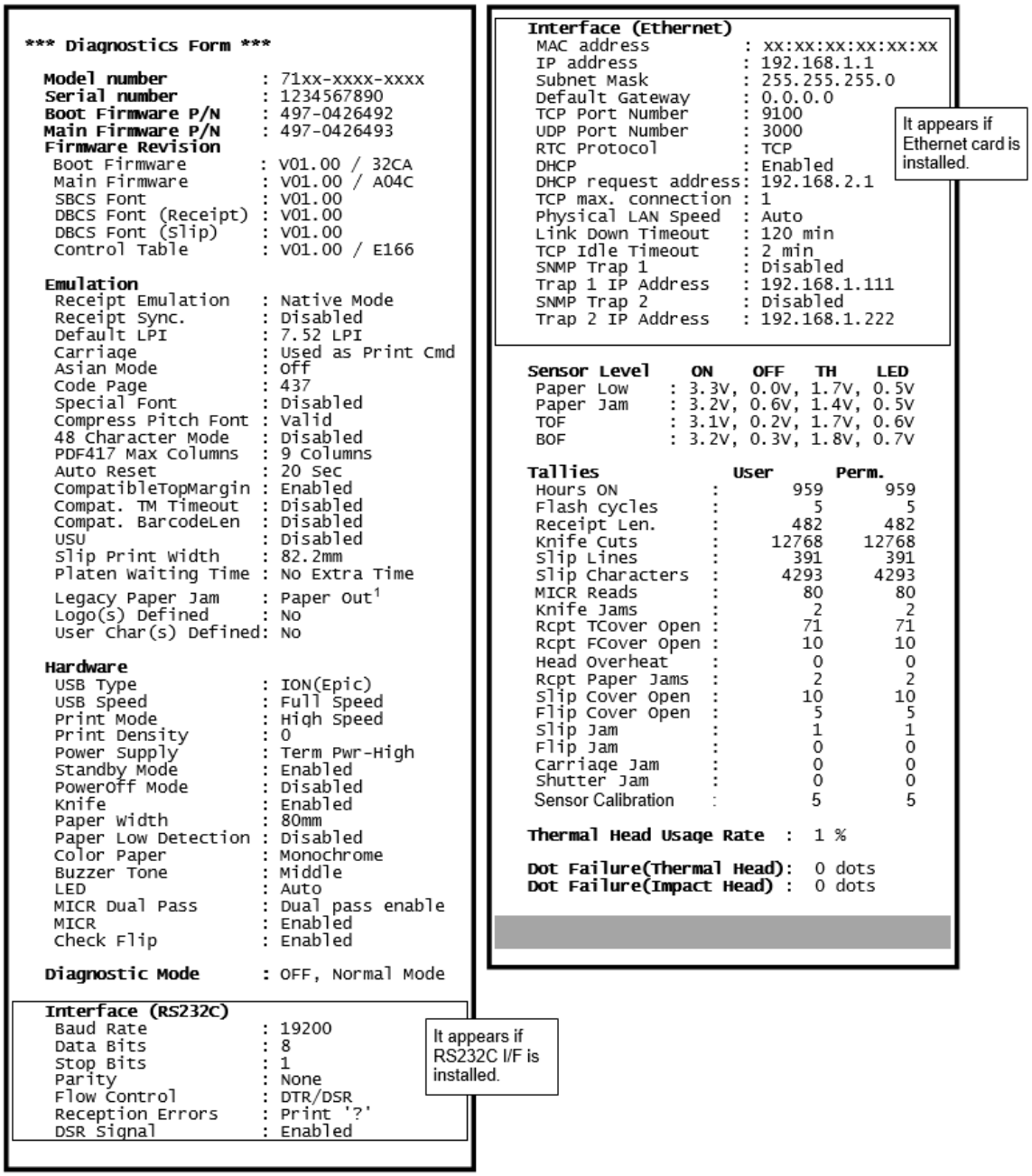
This option is to set Sync Mode, LPI, Carriage, Asian Mode, Code Page, Special Font, Compress Pitch Font, 48 Character Mode, PDF417 Max Columns, Auto Reset mode, Compatible Top Margin.

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 sub menu will appear as follows:



Printer Configuration form indicates the printer individual information and configurations.



```
*** 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 (Receipt)  : V01.00
   DBCS Font (Slip)     : V01.00
   Control Table        : V01.00 / E166

  Emulation
   Receipt Emulation    : Native Mode
   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
   Slip Print Width     : 82.2mm
   Platen Waiting Time  : No Extra Time
   Legacy Paper Jam     : Paper Out[1]
   Logo(s) Defined      : No
   User Char(s) Defined: No

  Hardware
   USB Type             : ION(Epic)
   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
   MICR Dual Pass       : Dual pass enable
   MICR                 : Enabled
   Check Flip           : Enabled

  Diagnostic Mode       : OFF, Normal Mode

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

It appears if RS232C I/F is installed.

```
  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
   TOF           : 3.1V, 0.2V, 1.7V, 0.6V
   BOF           : 3.2V, 0.3V, 1.8V, 0.7V

  Tallies                User       Perm.
   Hours ON          :        959        959
   Flash cycles      :          5          5
   Receipt Len.      :        482        482
   Knife Cuts        :      12768      12768
   Slip Lines        :        391        391
   Slip Characters   :       4293       4293
   MICR Reads        :         80         80
   Knife Jams        :          2          2
   Rcpt TCover Open  :         71         71
   Rcpt FCover Open  :         10         10
   Head Overheat     :          0          0
   Rcpt Paper Jams   :          2          2
   Slip Cover Open   :         10         10
   Flip Cover Open   :          5          5
   Slip Jam          :          1          1
   Flip Jam          :          0          0
   Carriage Jam      :          0          0
   Shutter Jam       :          0          0
   Sensor Calibration :         5          5

  Thermal Head Usage Rate  :  1 %

  Dot Failure(Thermal Head):  0 dots
  Dot Failure(Impact Head) :  0 dots
```

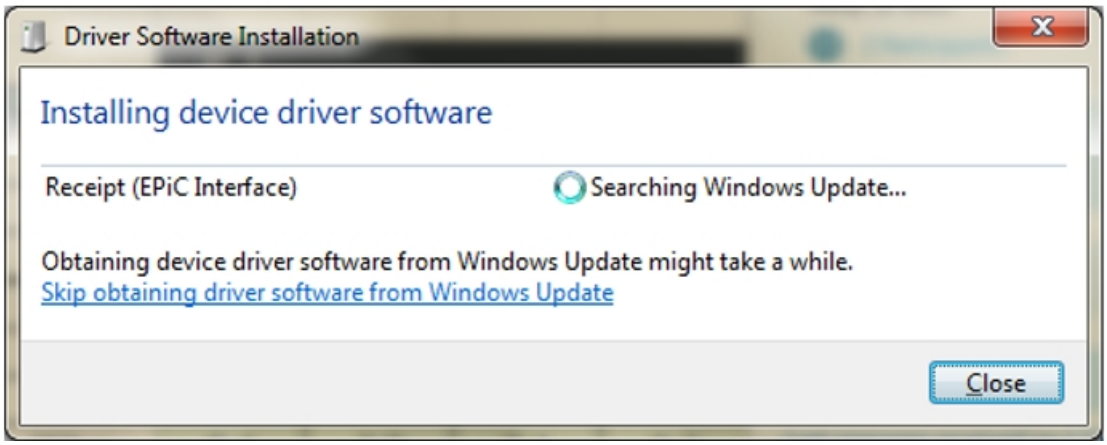
It appears if Ethernet card is installed.

Installing the USB Virtual COM port driver for printer

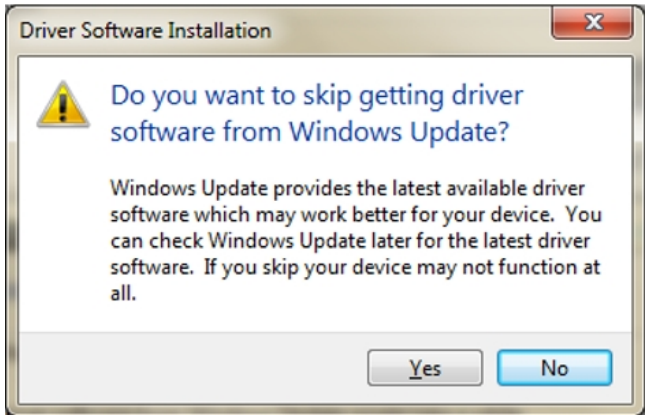
Windows POSReady 7

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

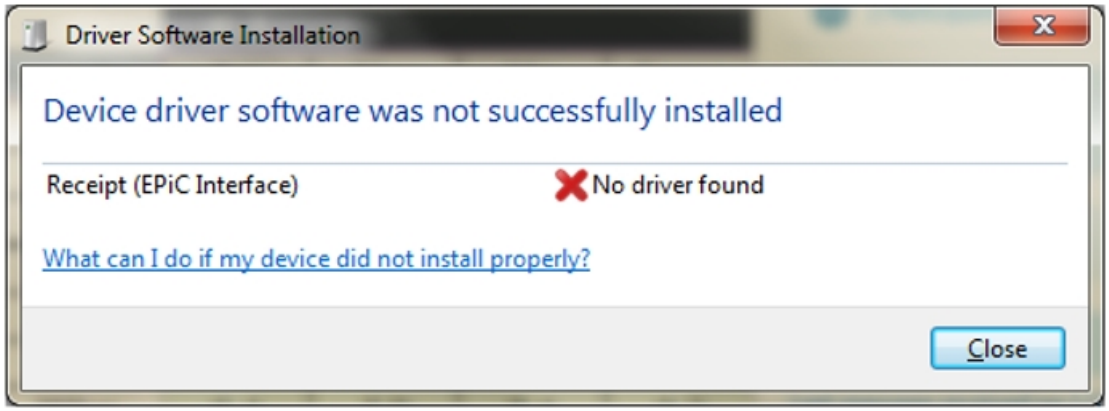
1. The printer beeps when it is plugged in to show the USB device is recognized. The Driver Software Installation window is displayed. Select **Skip obtaining driver software from Windows Update** to skip getting driver software from Window Update.



The following window is displayed.

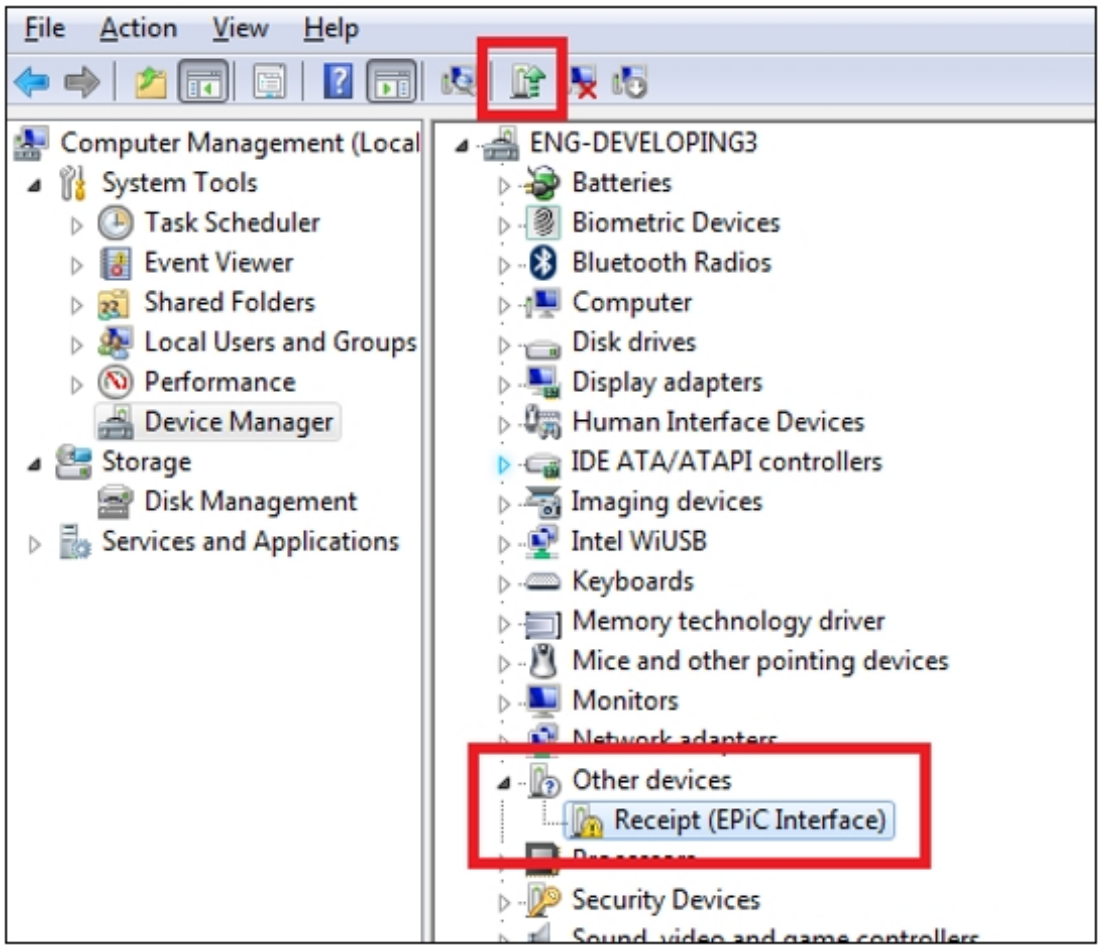


2. Select **Yes**. The following window is displayed.

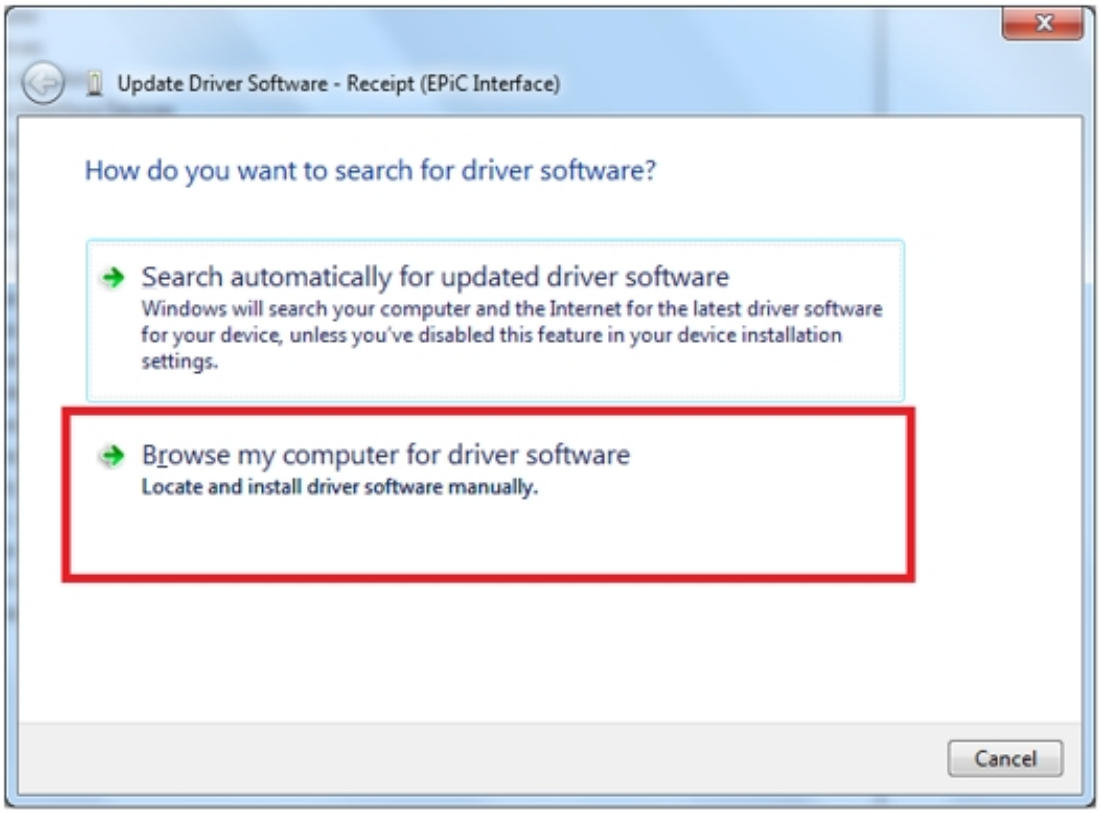


3. Open Device Manager, and then select **Receipt (EPiC Interface)**.

4. Select **Update Driver Software**.

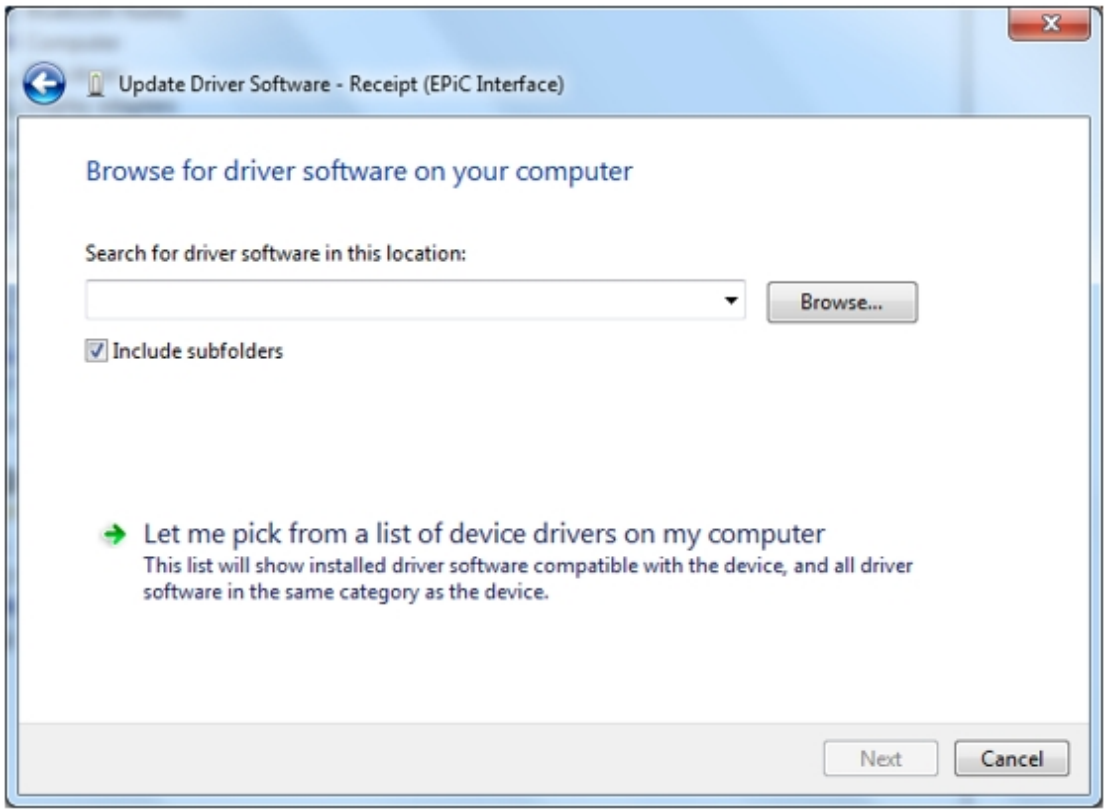


5. Select **Browse my computer for driver software**.

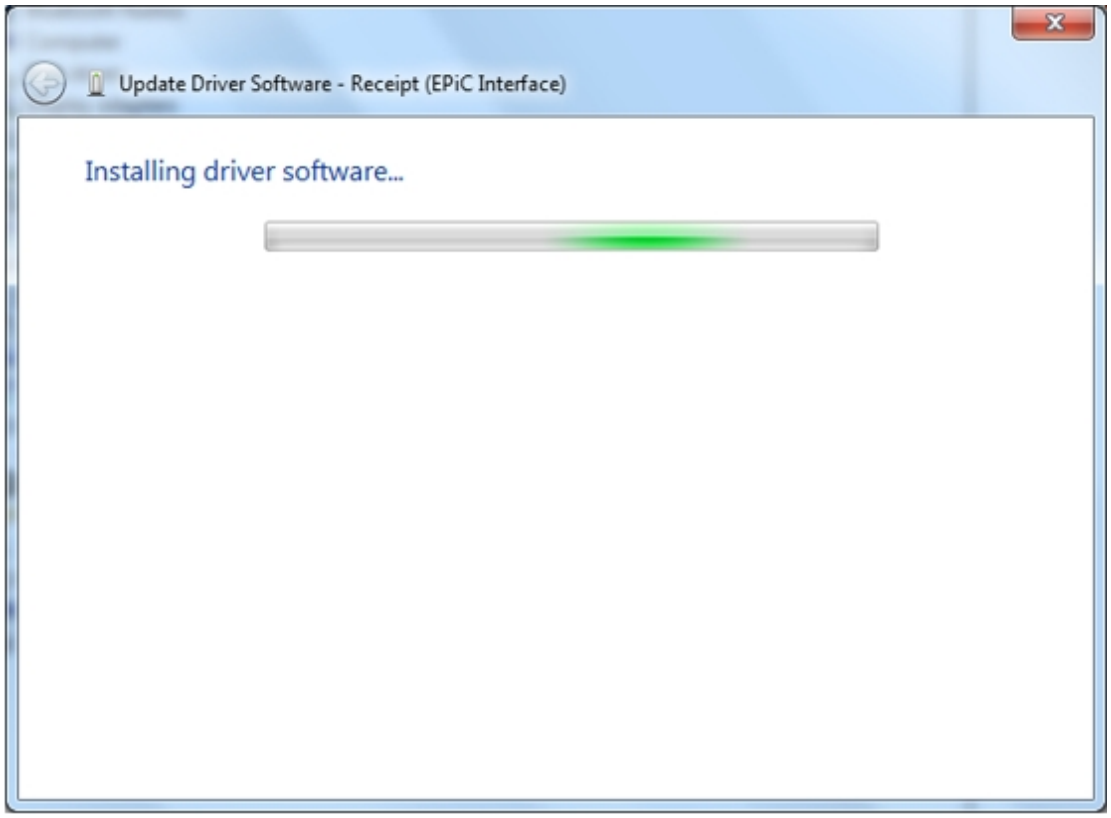


6. Select **Browse**, and then select the Edgeport Driver folder.

7. Select **Next**.



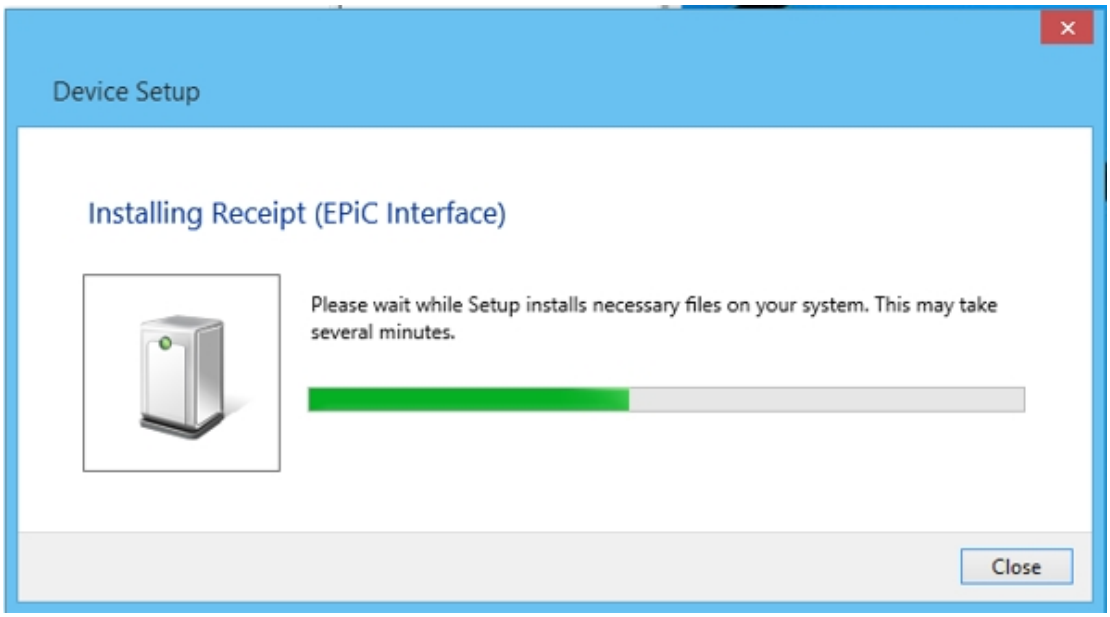
The system starts installing the printer driver.



Windows 8

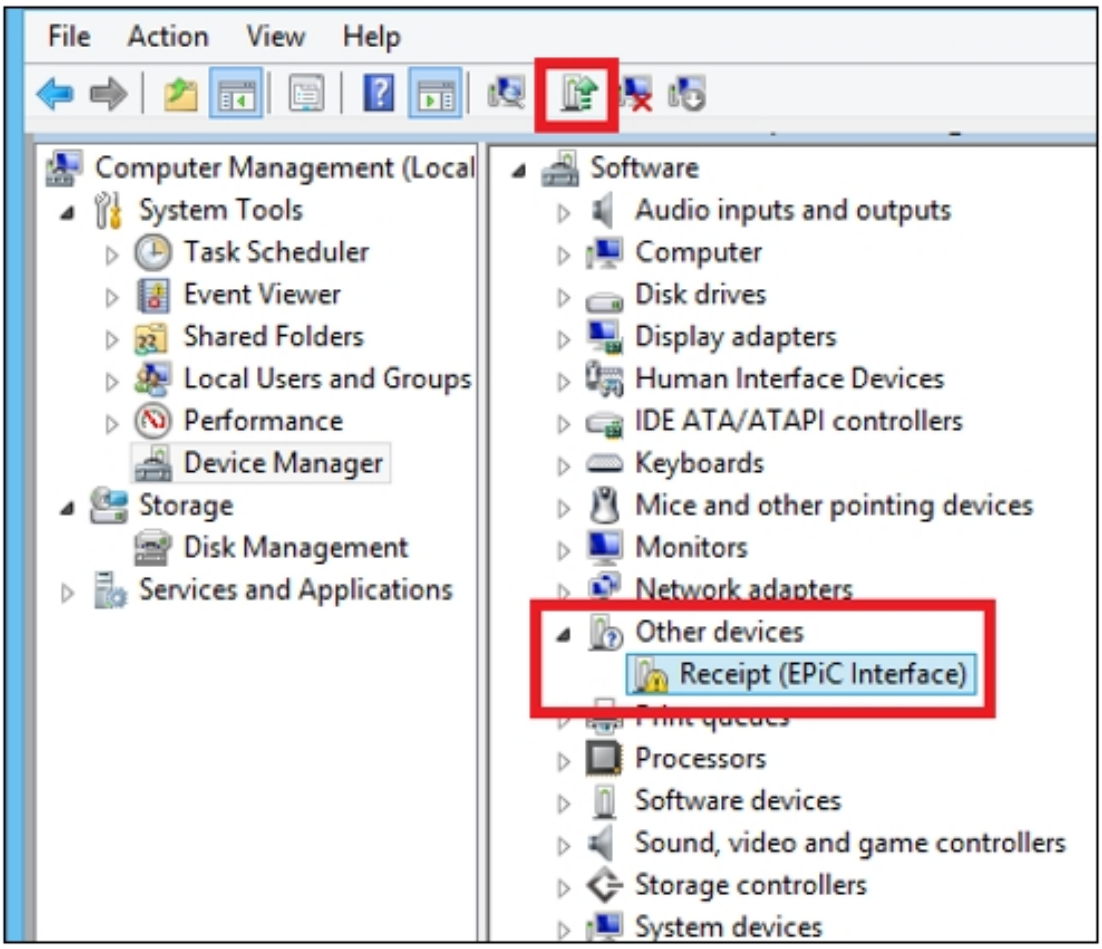
To install the USB Virtual COM port driver for printers on a Windows 8 system, follow these steps:

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.

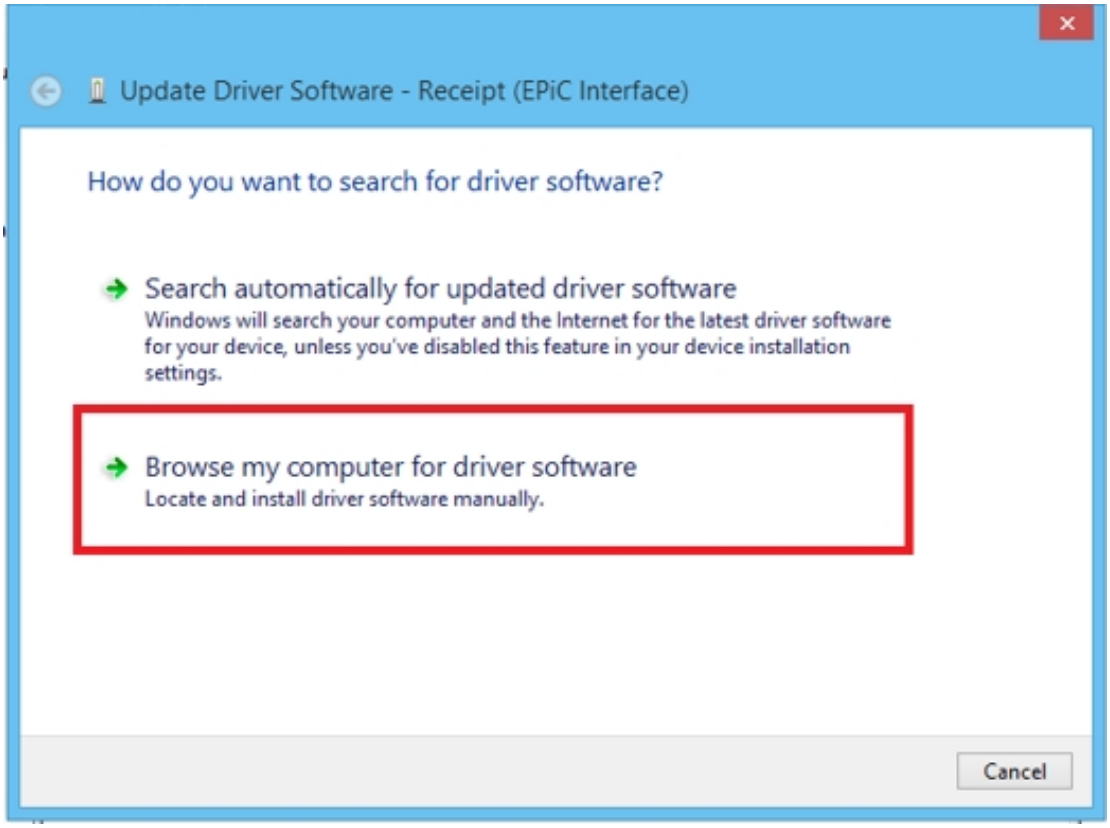


2. Open the Device Manager, and then select **Receipt (EPiC interface)**.

3. Select **Update Driver Software**.

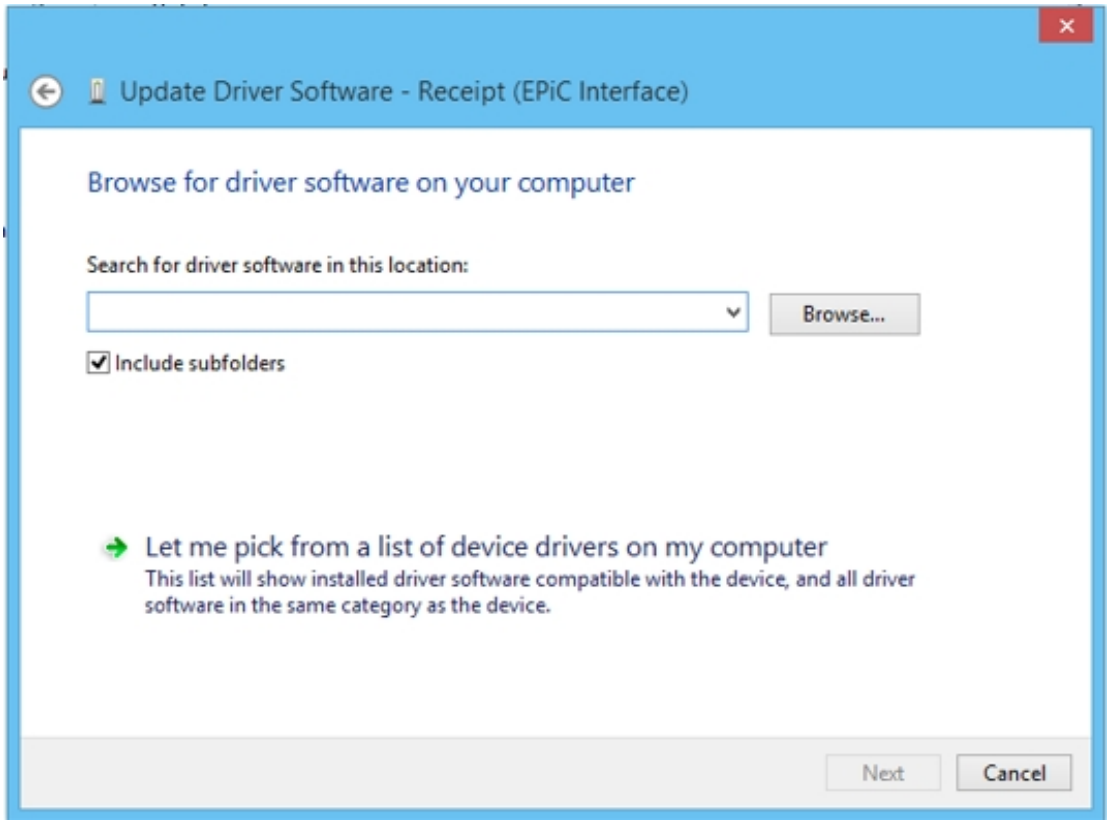


4. Select **Browse my computer for driver software**.

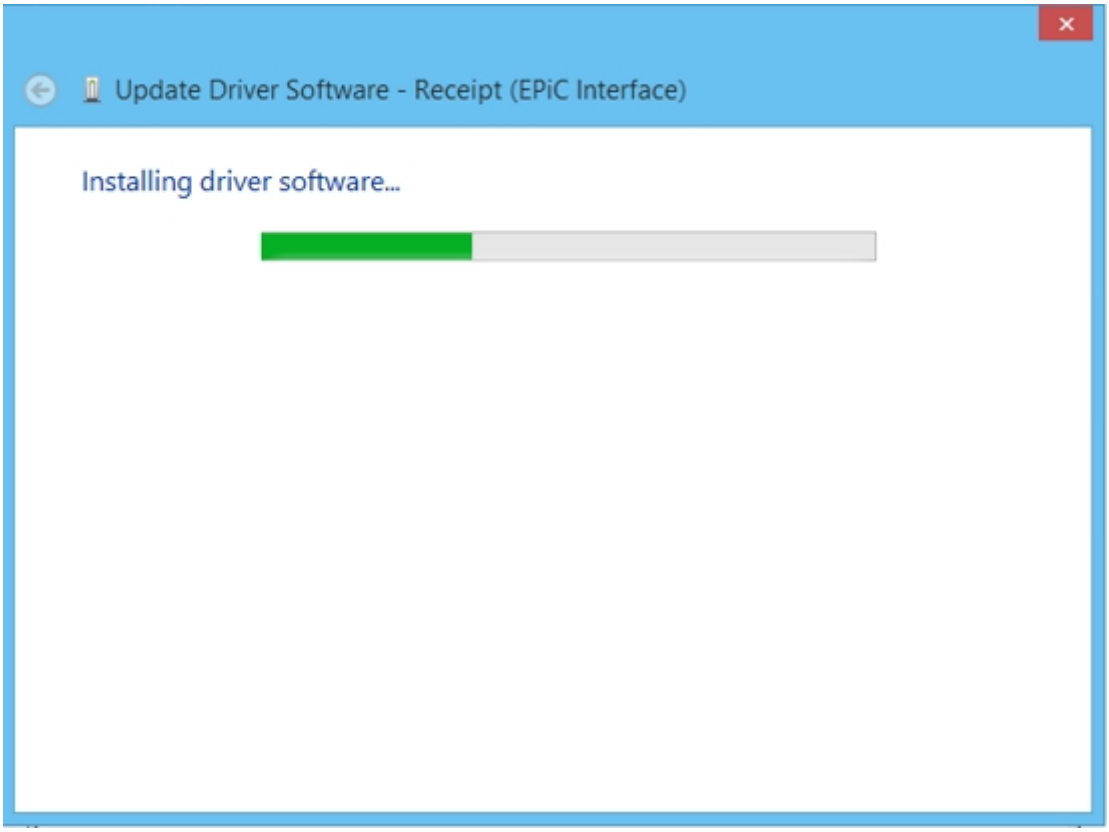


5. Select **Browse**, and then select the **Edgeport Driver** folder.

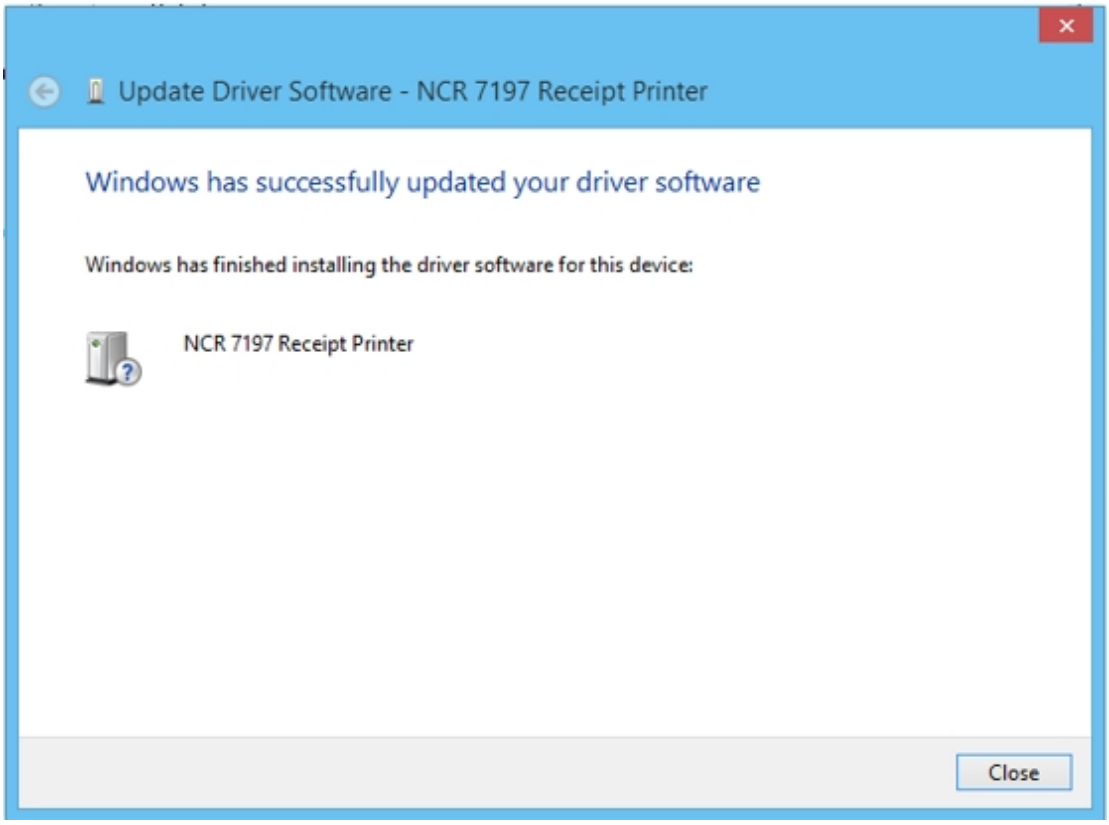
6. Select **Next**.



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



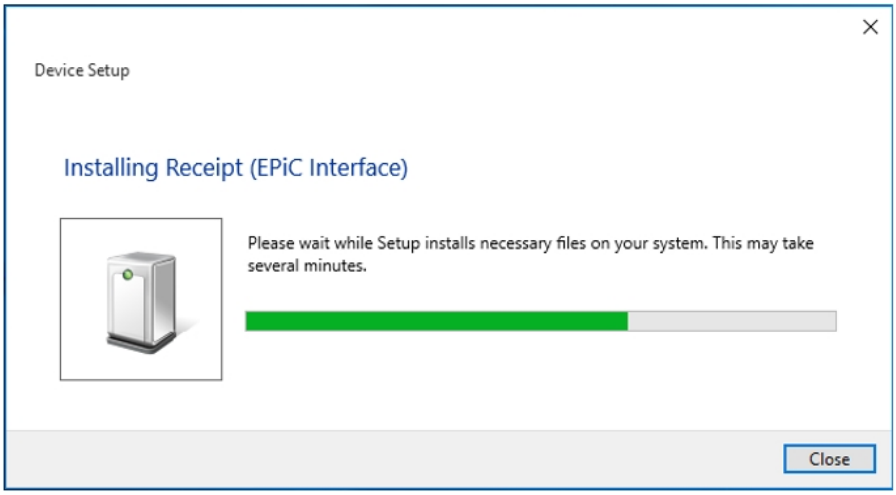
When the installation is complete, the following window is displayed.



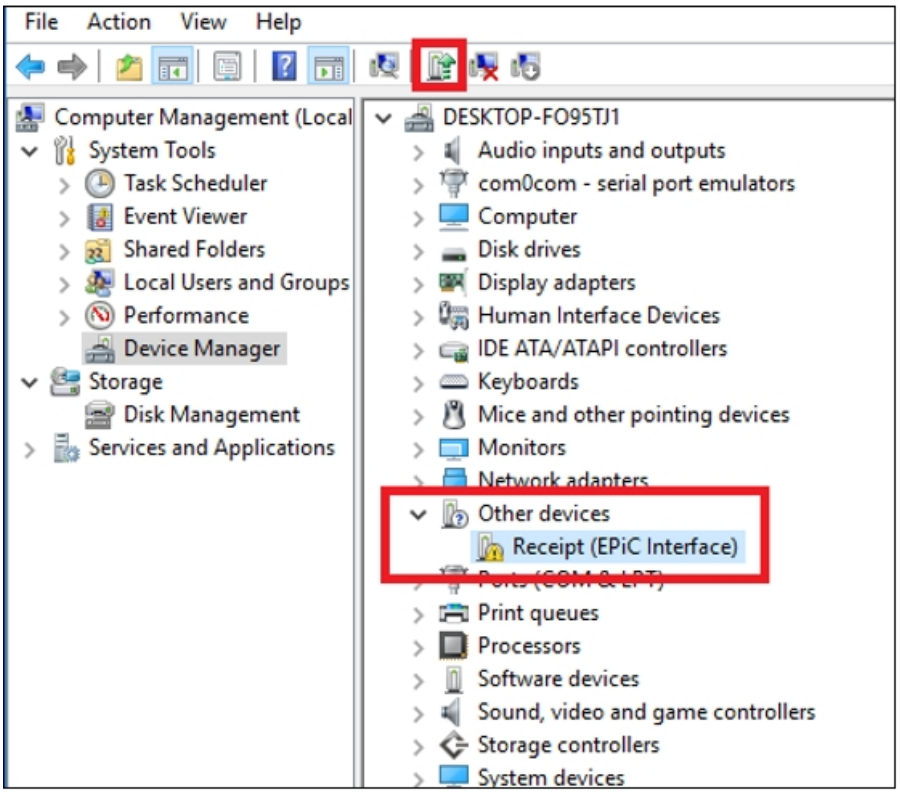
Windows 10

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

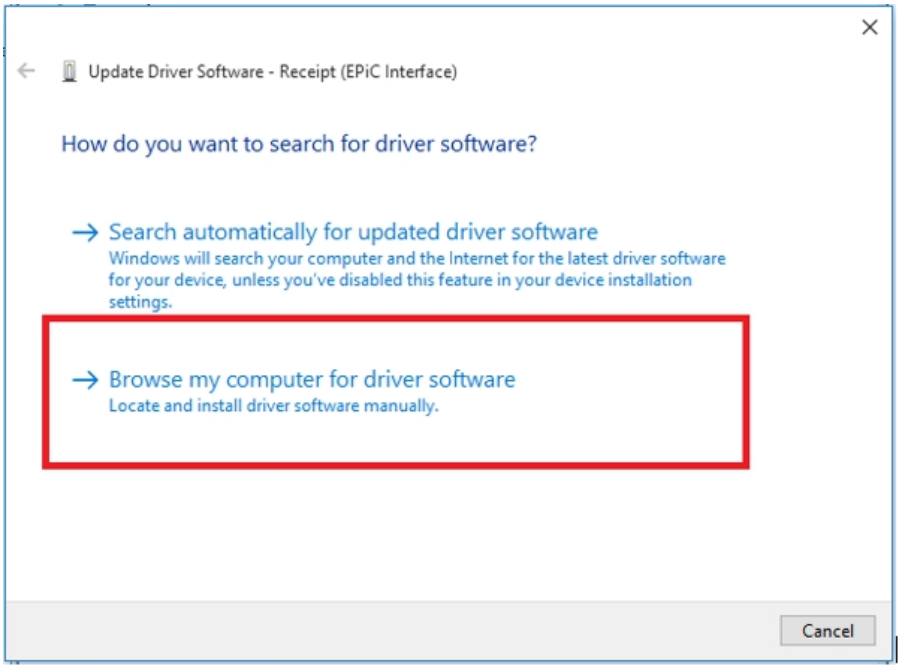
1. The printer beeps when it is plugged in to show the USB device is recognized. The Device Setup window displays that the Installing Receipt (EPiC Interface) process is ongoing.



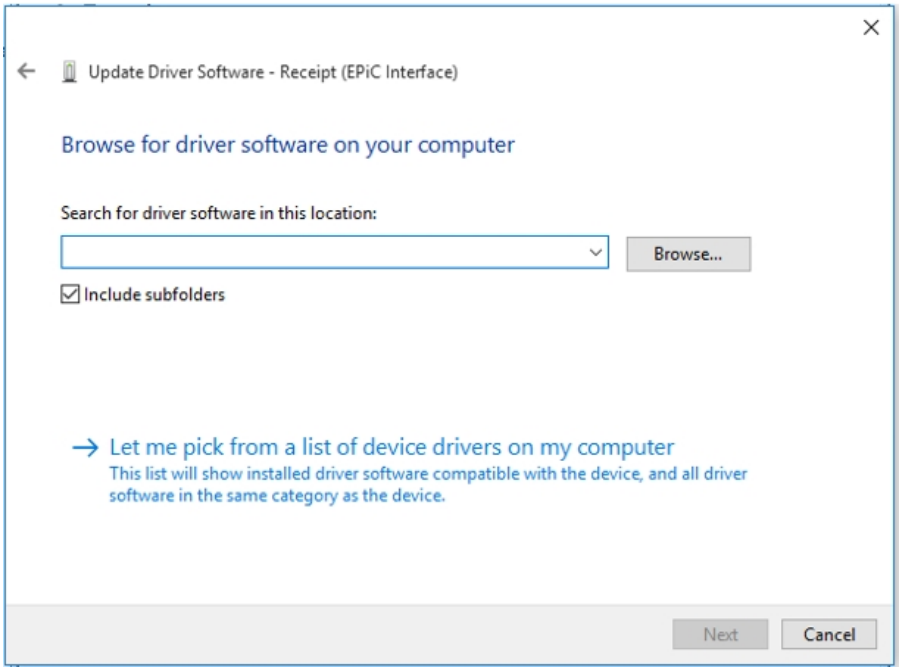
2. Open the Device Manager, and then select **Receipt (EPiC interface)**.
3. Select **Update Driver Software**.



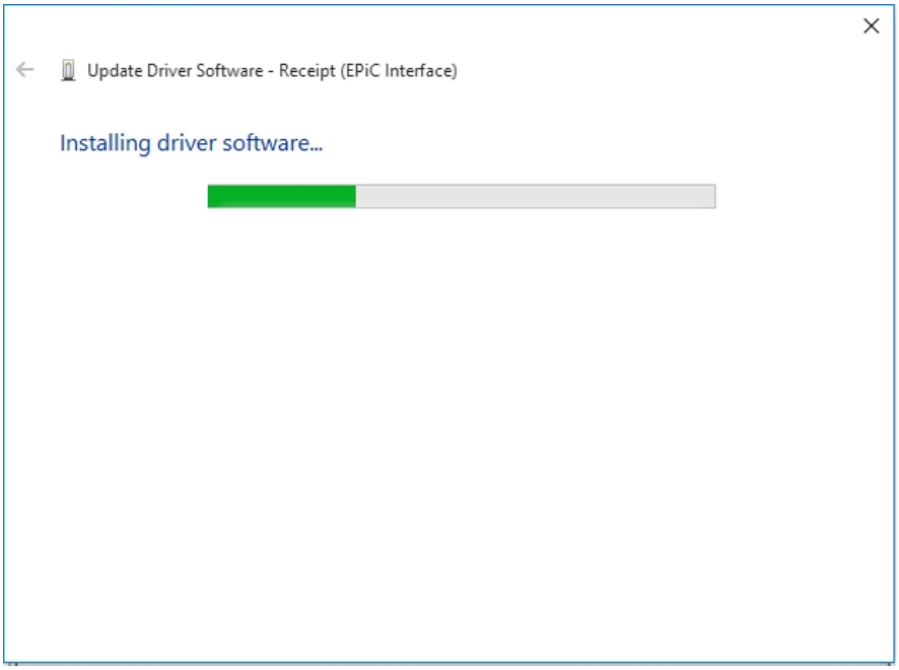
4. Select **Browse my computer for driver software**.



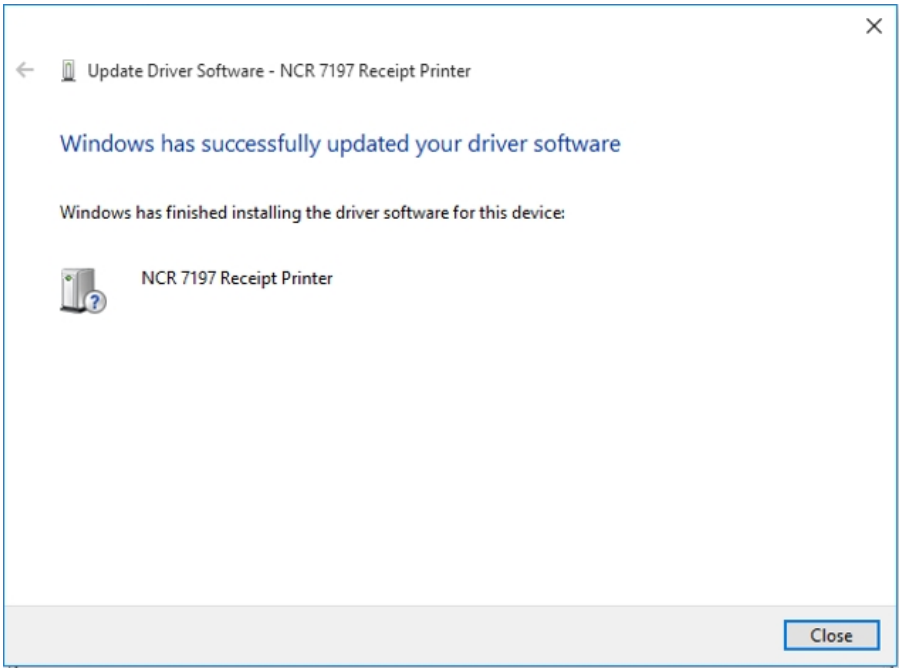
5. Select **Browse**, and then select the **Edgeport Driver** folder.
6. Select **Next**.



The system starts installing the printer driver.



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



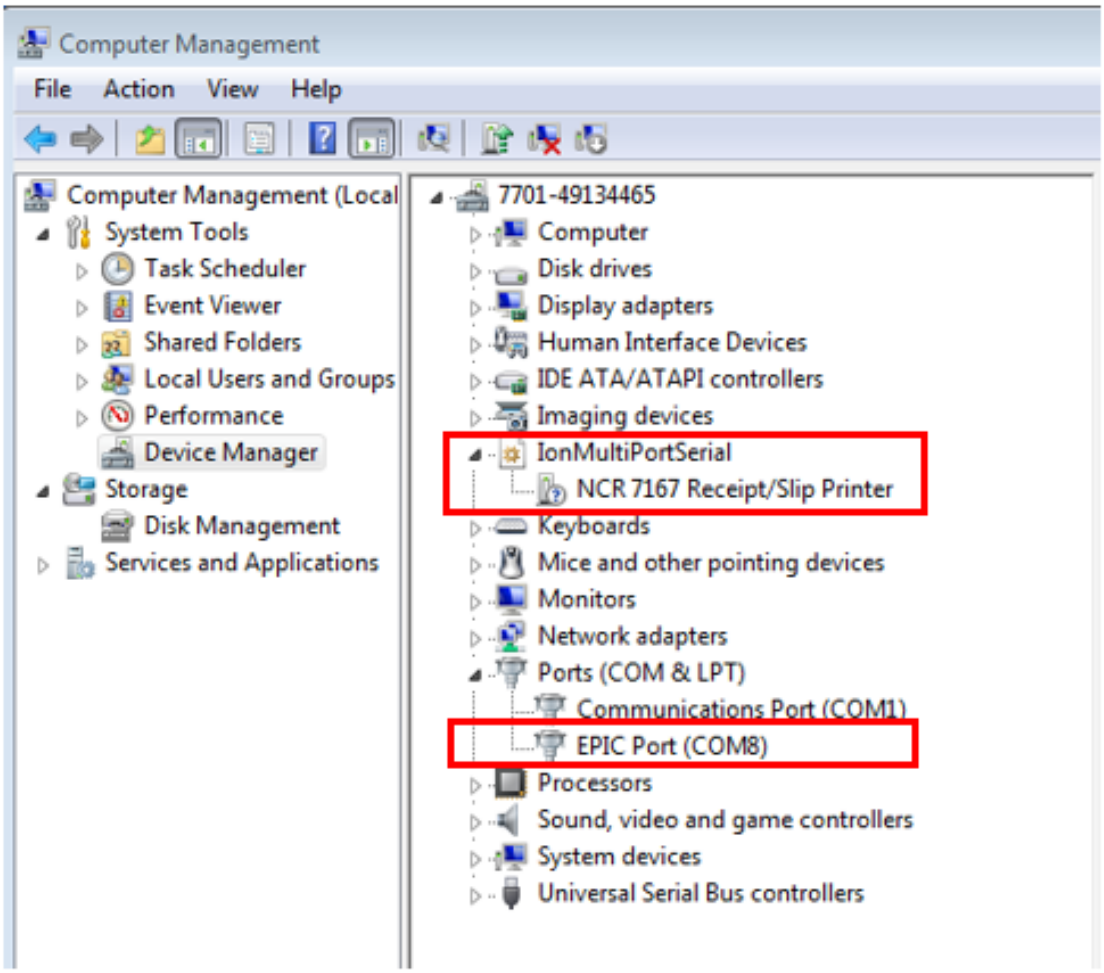
Verifying the installation

Windows POSReady 7

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

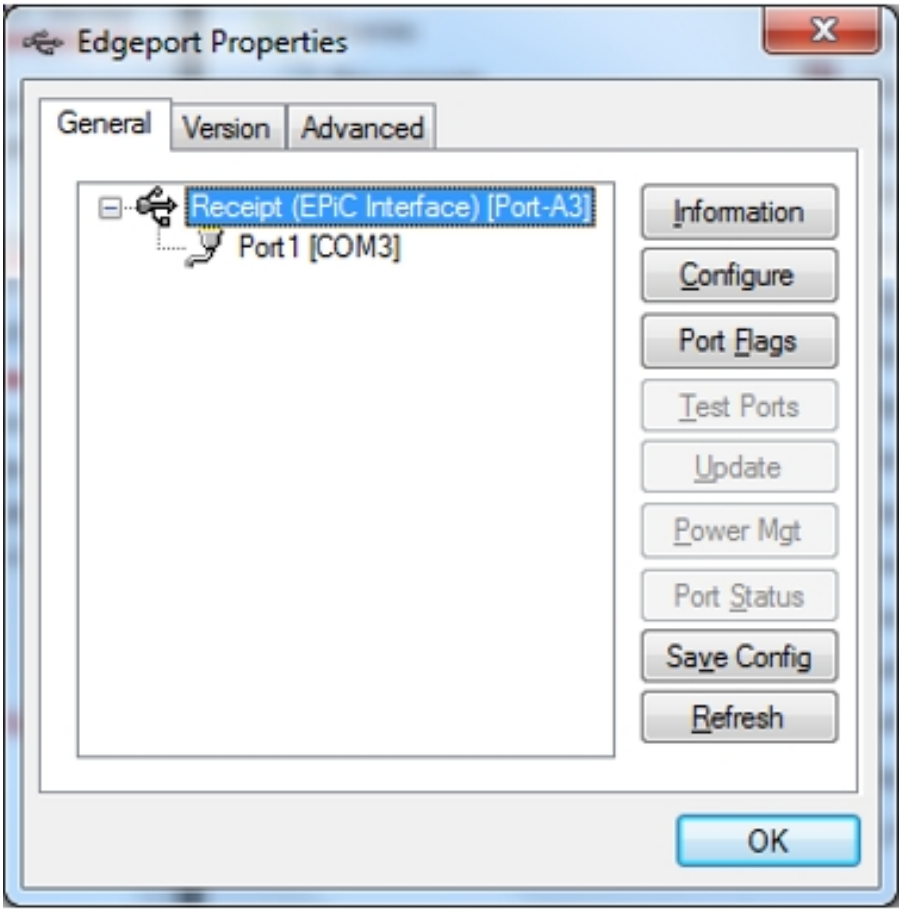
1. Open the Device Manager window.
2. Make sure that the NCR 7167 Receipt/Slip Printer and the EPIC Port are installed.

Note: The NCR 7167 Receipt/Slip Printer is the defined USB VID/PID (Vendor ID/Product ID) of the NCR Single Station printers (7167 and 7168).



Note: 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.

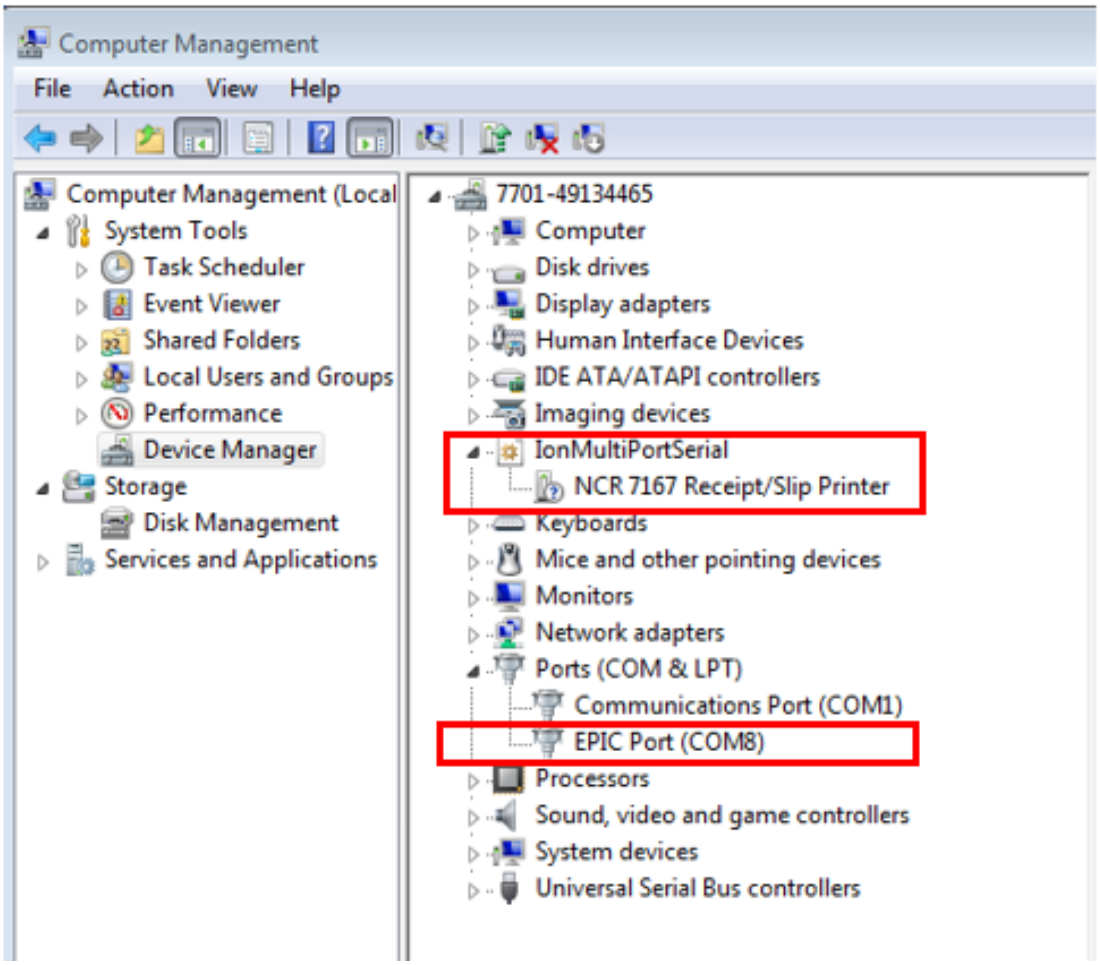


Windows 8

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

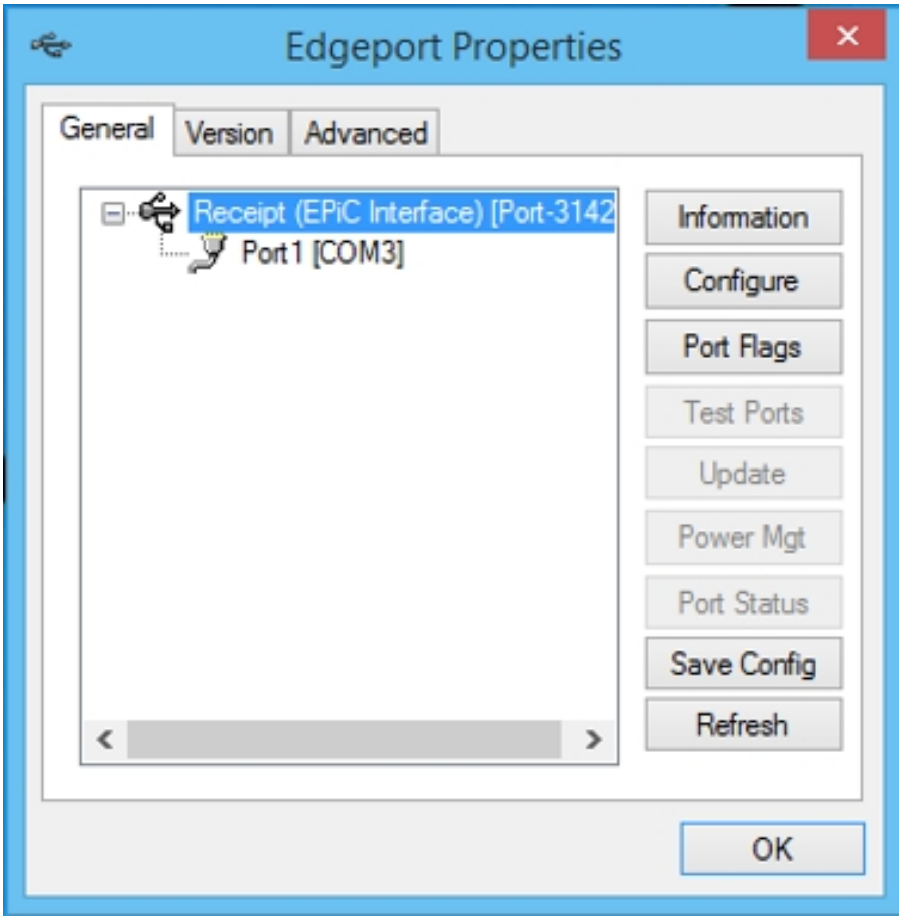
1. Open the Device Manager window.
2. Make sure that the **NCR 7167 Receipt/Slip Printer** and the **EPIC Port** are installed.

Note: The **NCR 7167 Receipt/Slip Printer** is the defined USB VID/PID (Vendor ID/Product ID) of the NCR Single Station printers (7167 and 7168).



Note: 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.

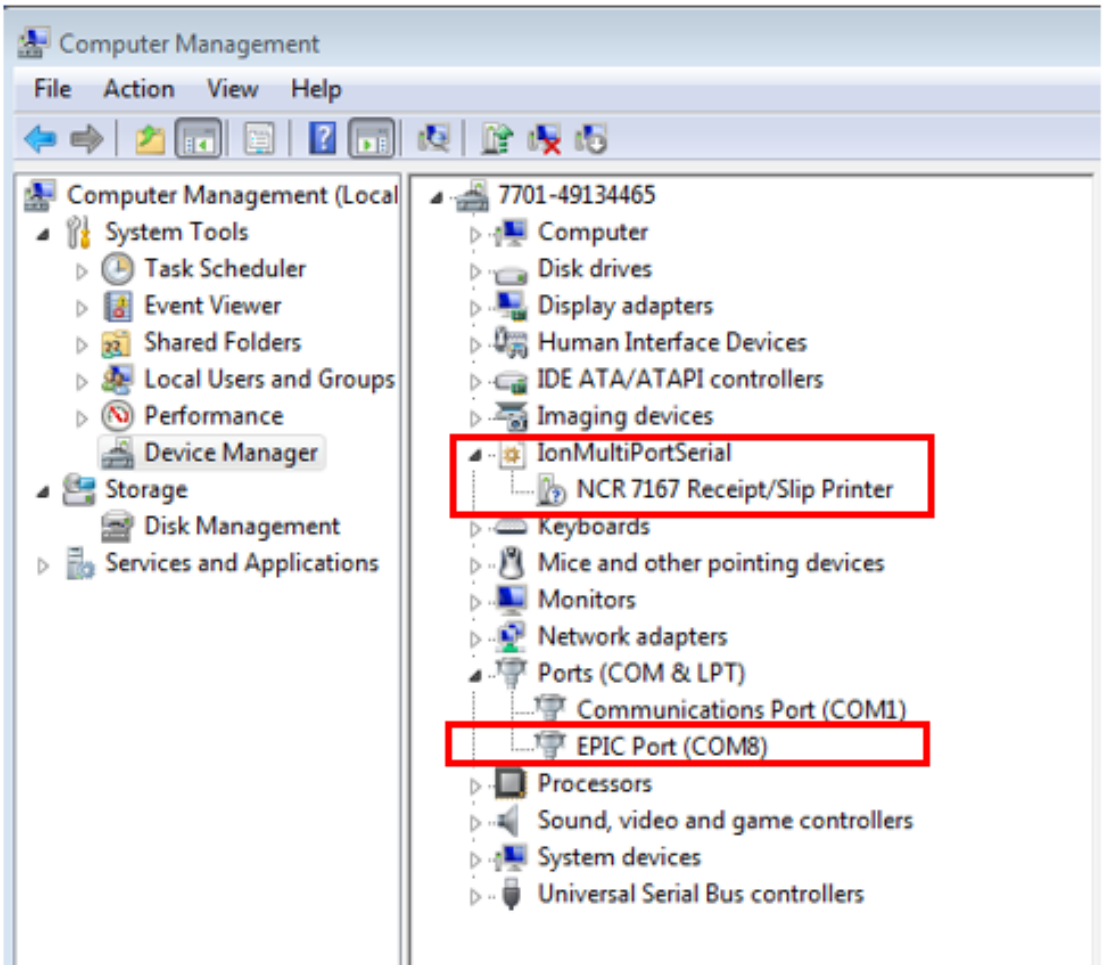


Windows 10

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

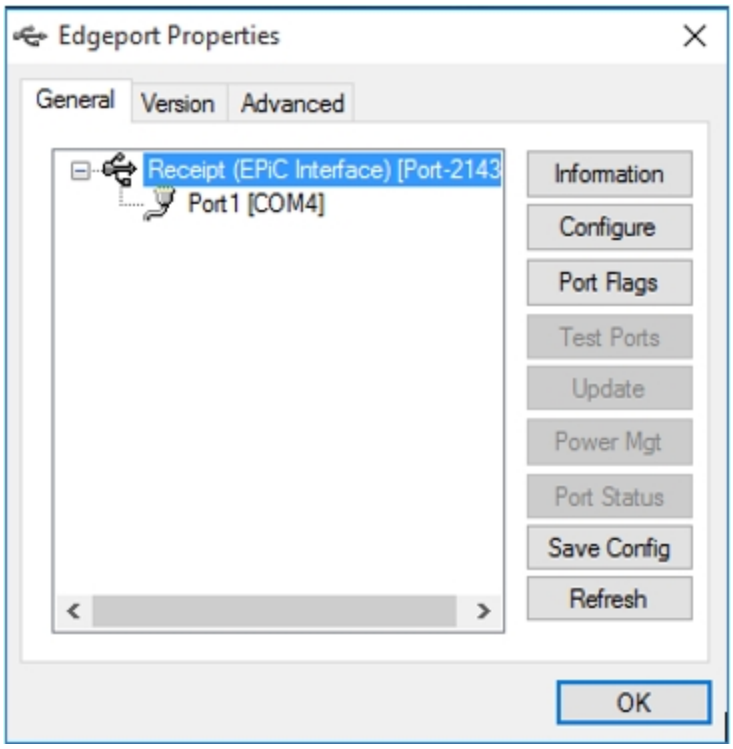
1. Open the Device Manager window.
2. Make sure that the **NCR 7167 Receipt/Slip Printer** and the **EPIC Port** are installed.

Note: The **NCR 7167 Receipt/Slip Printer** is the defined USB VID/PID (Vendor ID/Product ID) of the NCR Single Station printers (7167 and 7168).



Note: 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.



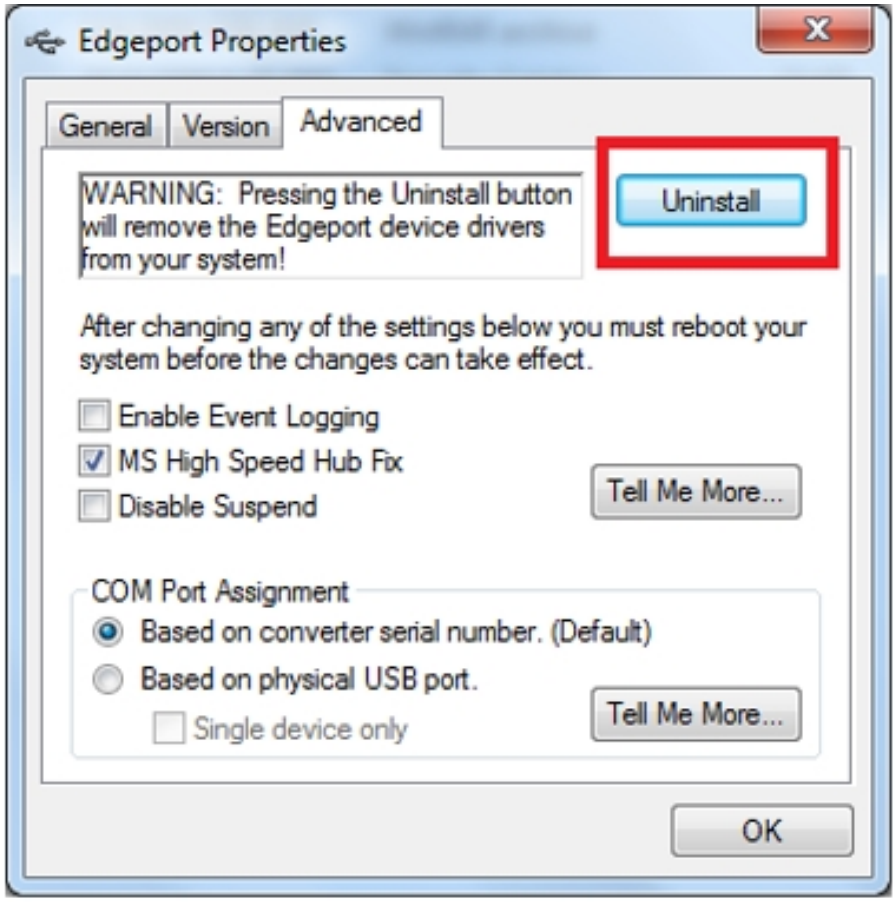
Uninstalling the drivers

Windows POSReady 7

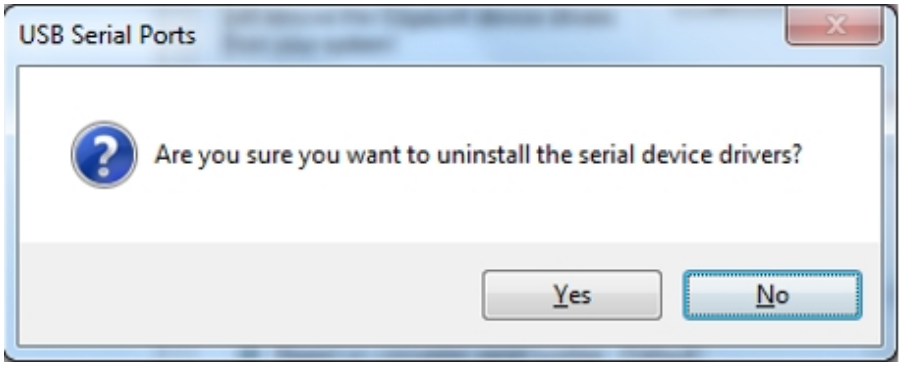
To uninstall the printer driver on a Windows POSReady 7 system, follow these steps:

1. Open the Edgeport utility.
2. Select the **Advanced** tab.

3. Select **Uninstall**, and then follow the on–screen instructions.

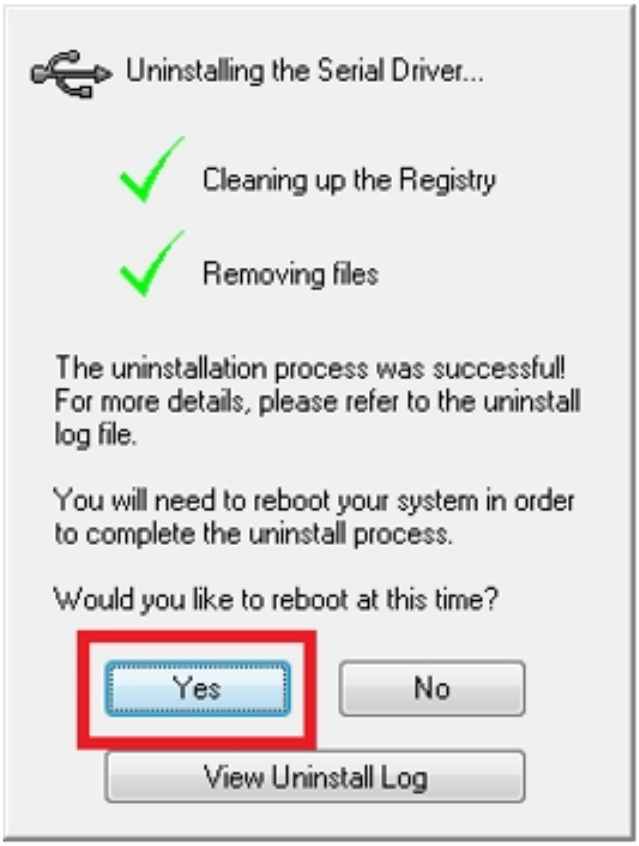


The following window is displayed.



4. Select **Yes**.

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

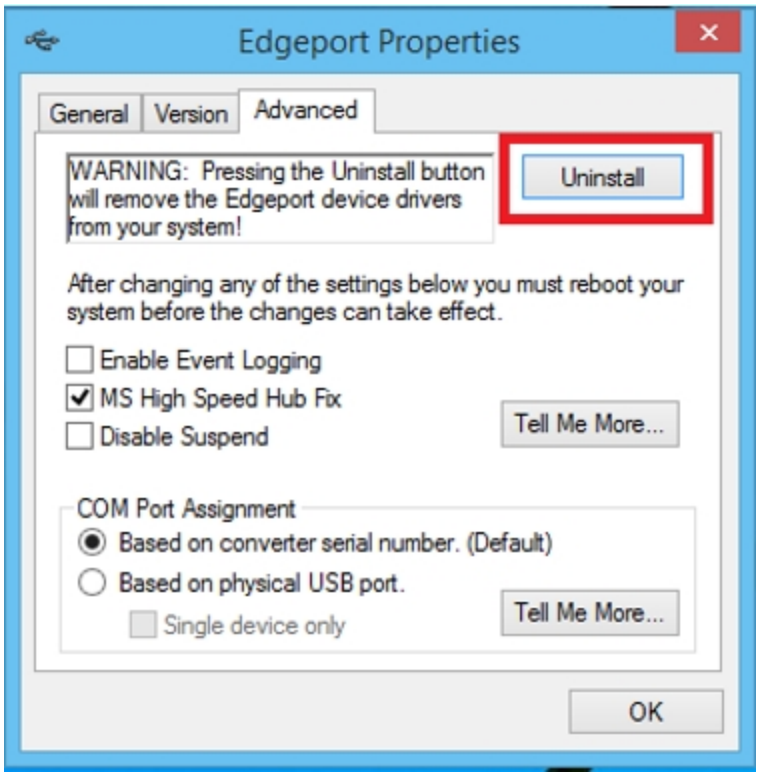


5. Select **Yes** to completely uninstall the driver and to restart the PC.

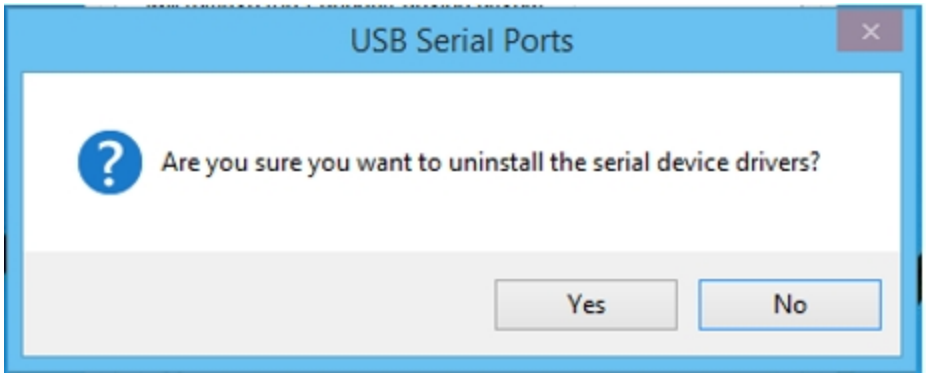
Windows 8

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 **Uninstall**, and then follow the on–screen instructions.

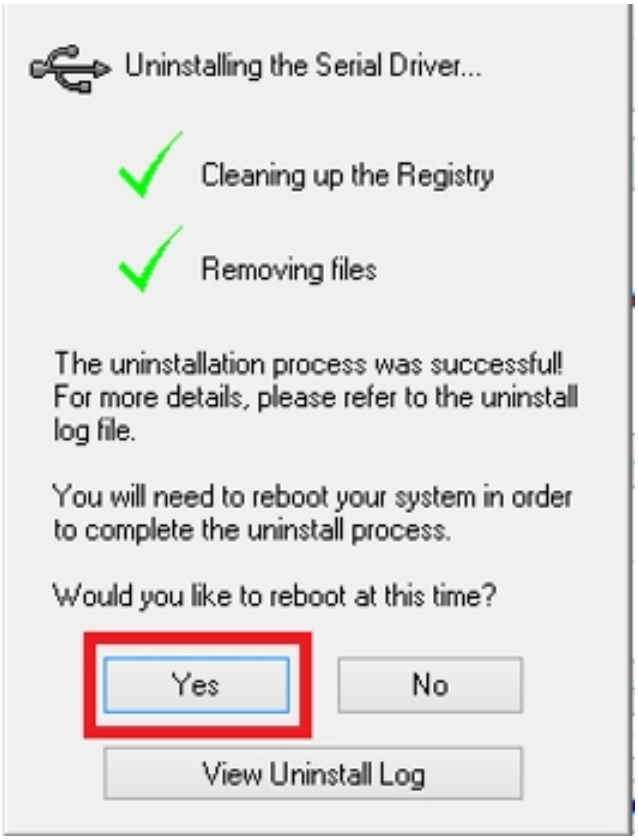


The following window is displayed.



4. Select **Yes**.

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

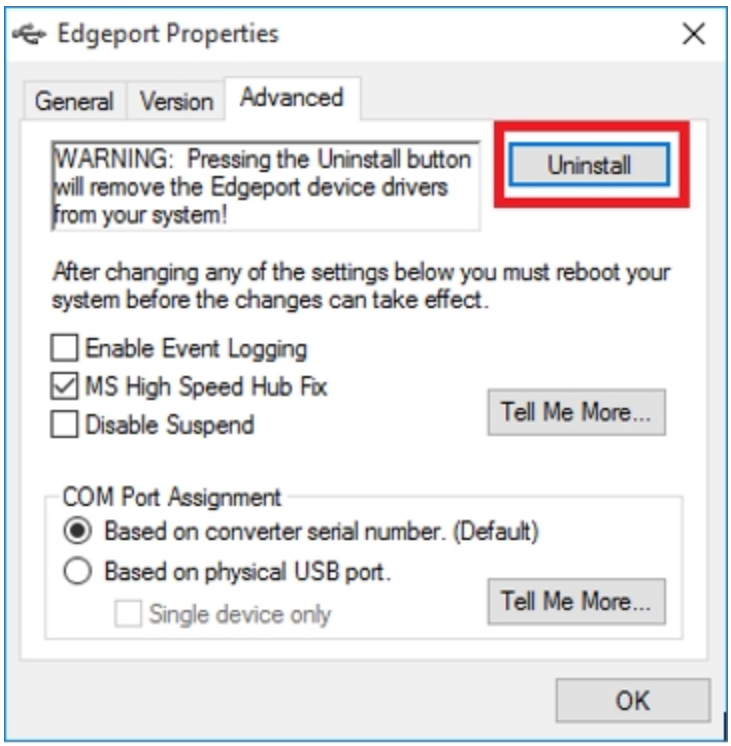


5. Select **Yes** to completely uninstall the driver and to restart the PC.

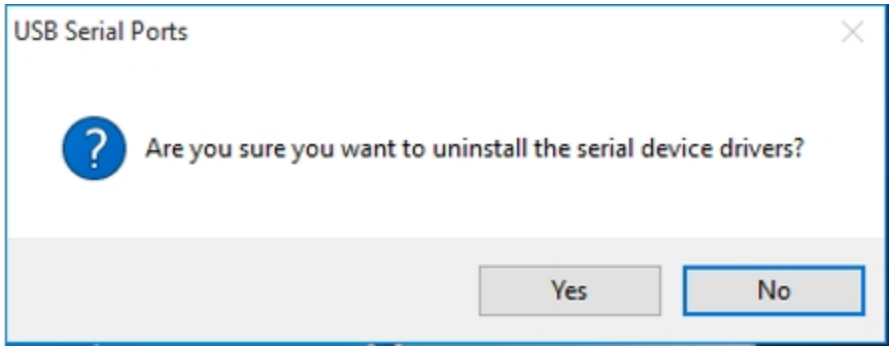
Windows 10

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 **Uninstall**, and then follow the on–screen instructions.

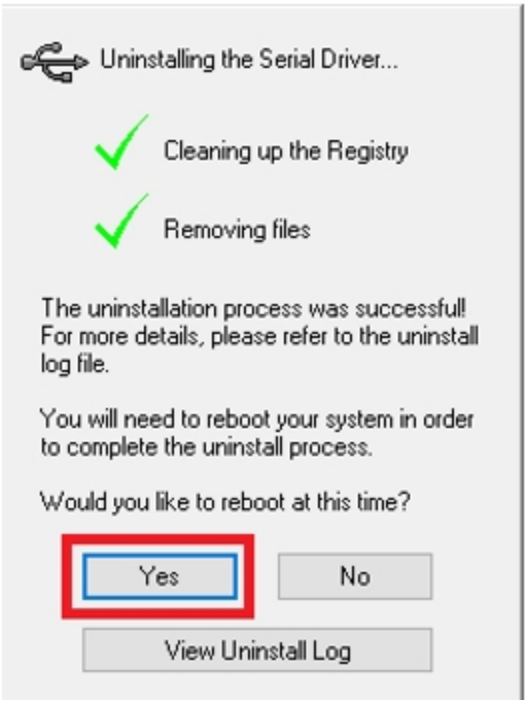


The following window is displayed.



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.

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 57.

Using the Printer

To use the printer, follow these steps:

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 startup cycle, it is ready to receive data. If the LED blinks or the host computer indicates that there is a problem, refer to *Troubleshooting Problems* on page 64 for more information.
2. To perform a Configuration check (optional), reset the printer while holding the Paper Feed button, or open the receipt door and, while pressing the Paper Feed button, close the receipt door. Let go of the Paper Feed button when the printing begins.

Note: The printer receives power when the power supply is on even if the printer is offline. To completely remove power, unplug 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 occurs:

- Amber LED blinks (slow): the paper is low.

  There are approximately 1 ½ to 7 ½ meters (5–25 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 blinks (fast): the paper is out.

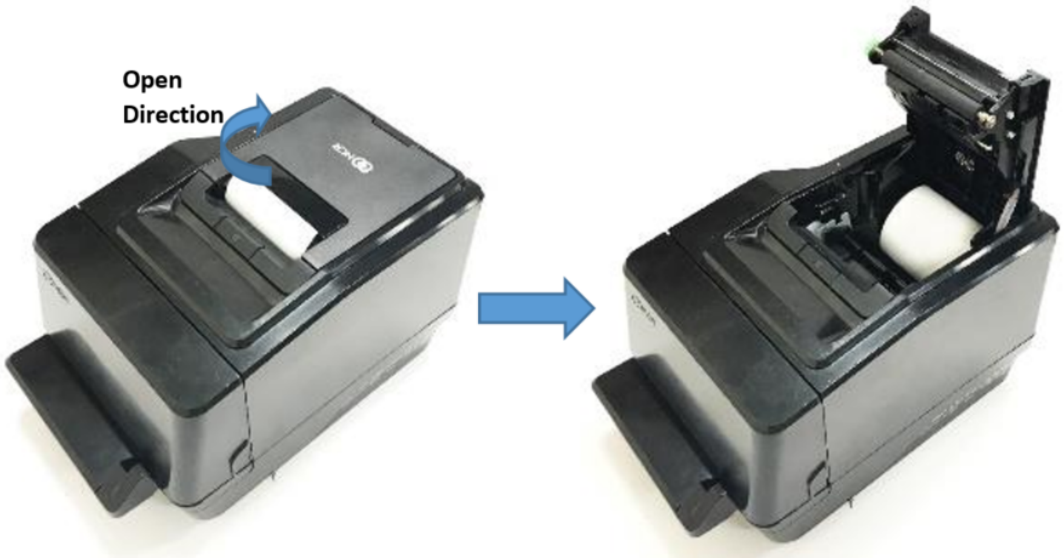
  Change the paper immediately or data may be lost.

⚠ **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.

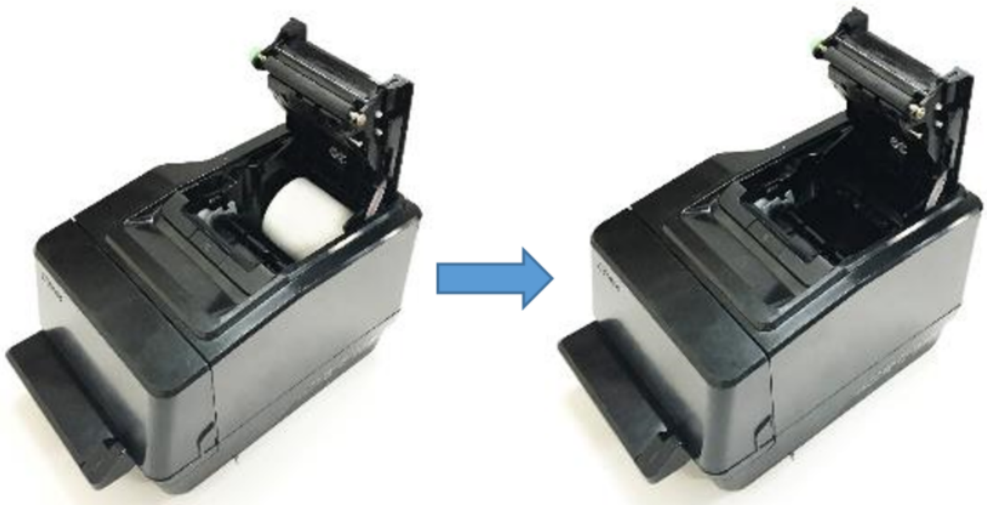
Removing the paper roll

To remove the paper roll, follow these steps:

1. Open the receipt cover.



2. Remove the used roll.



Loading the paper roll

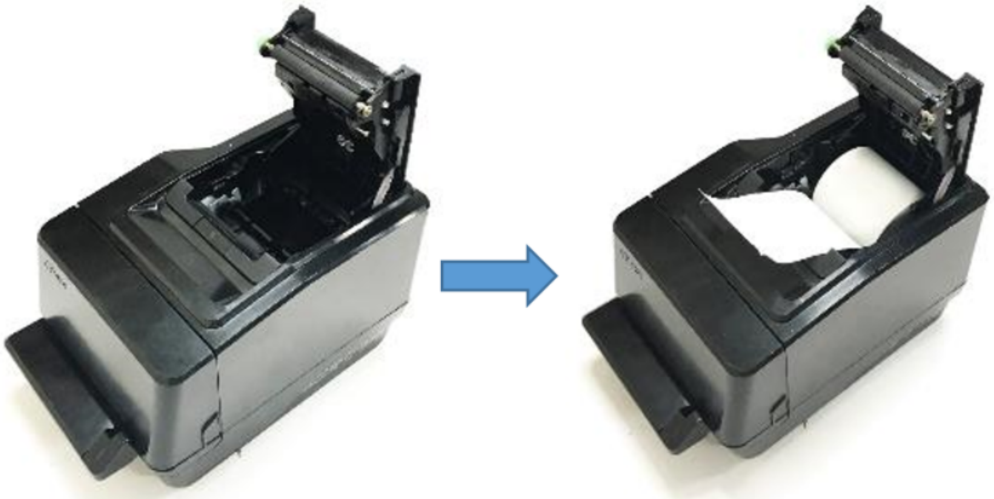
To load the paper roll, follow these steps:

Note: Tear off the end of the new roll so that the edge is loose.

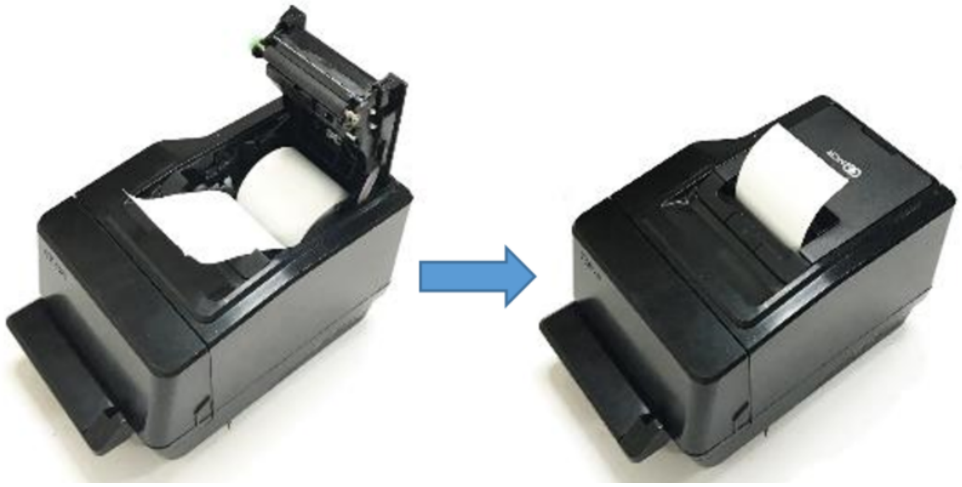
1. Place the new roll in the bin with a little extra paper extending over the front.

Note: 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



2. Close the receipt cover.



3. Remove the excess paper by tearing it against the tear–off blade.

Advancing the paper

To advance the paper, follow these steps:

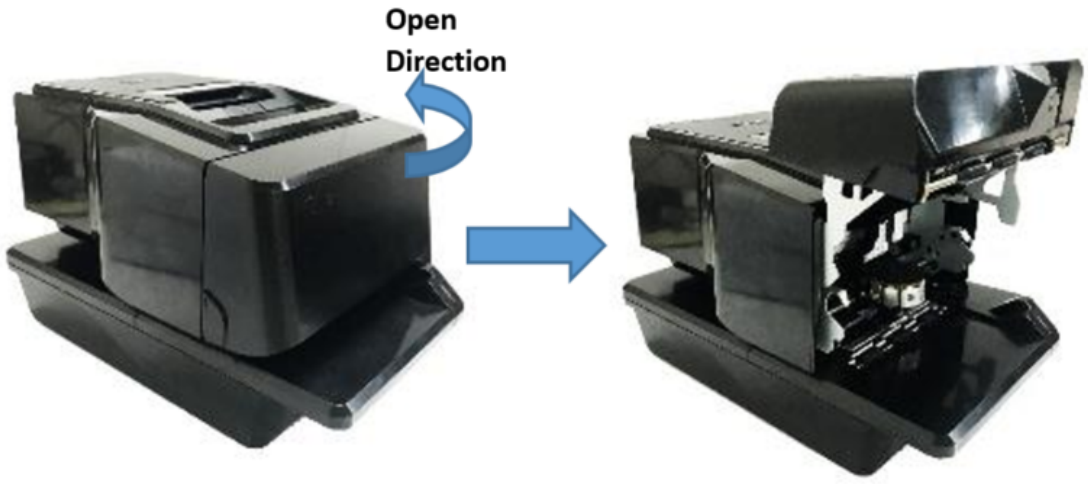
1. Press the Paper Feed button on the operator panel to advance the paper. The cover must be closed. To ensure print quality and proper alignment of the paper, advance about **30 cm** (12 in.) of paper.
2. Tear off the excess paper against the tear–off blade.

Replacing the Ribbon Cassette

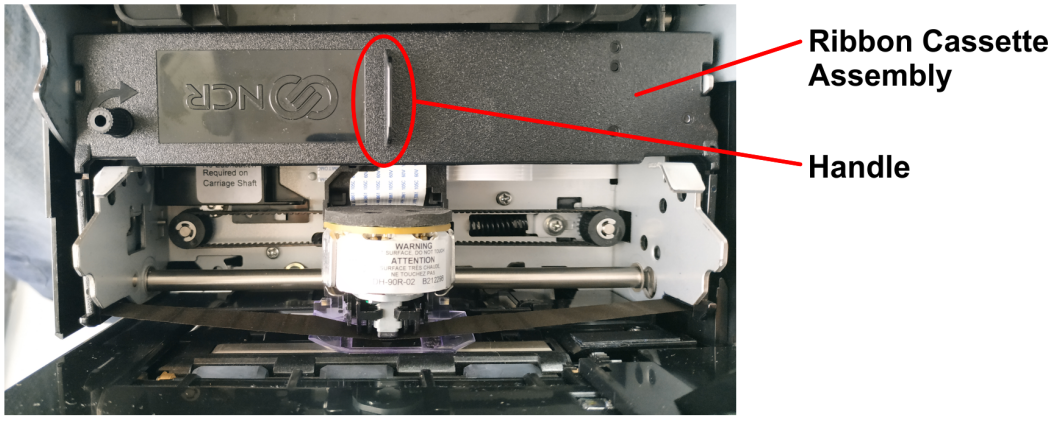
Change the ribbon cassette when the print is too light or the ribbon is frayed.

Removing the ribbon cassette

1. Open the slip front cover.

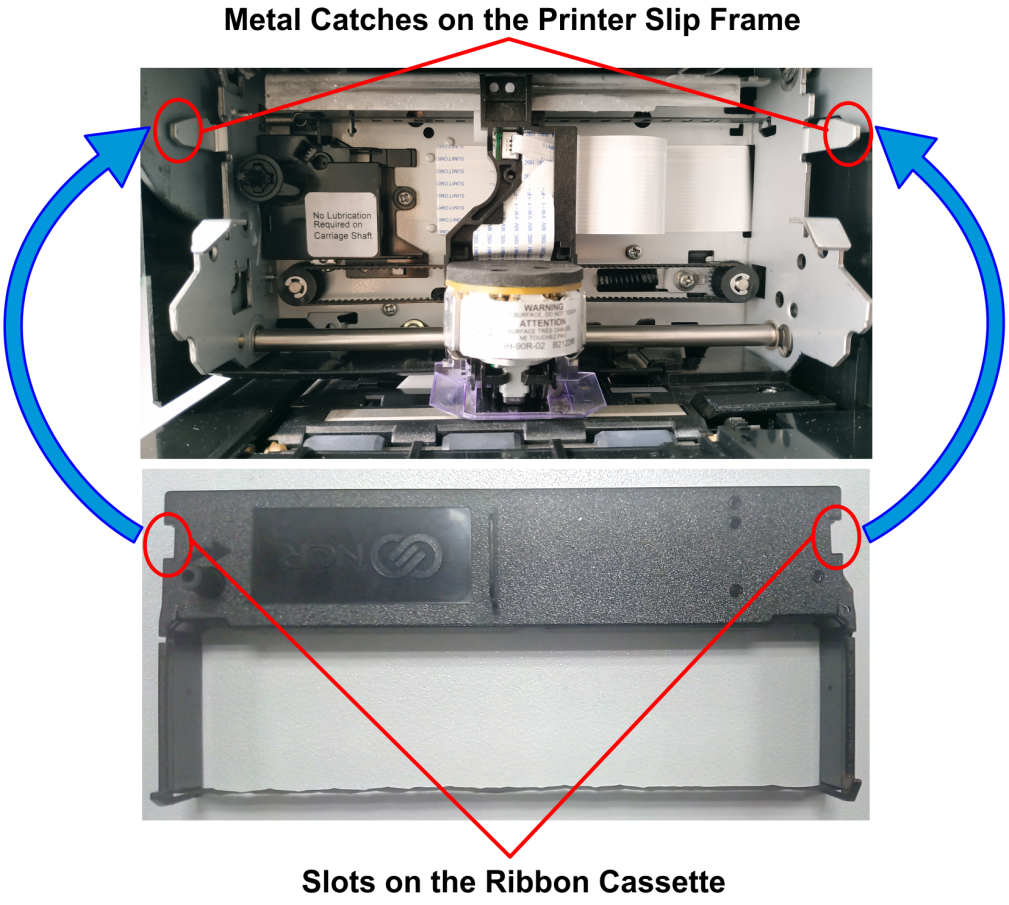


2. Using the handle on the cassette, pull the ribbon cassette assembly away from the printer.

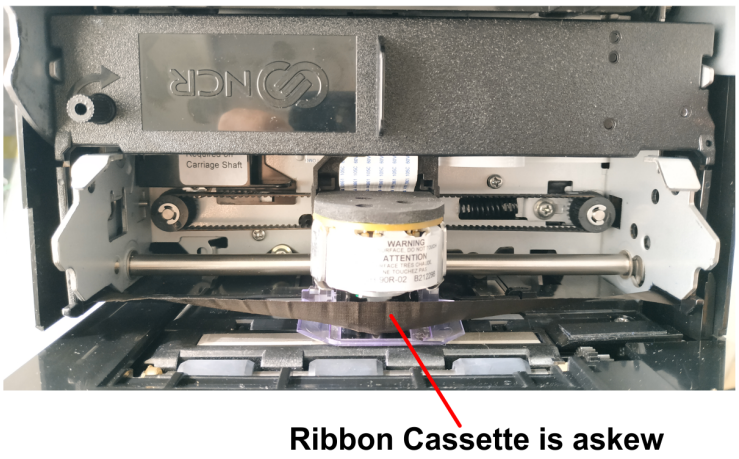


Installing the ribbon cassette

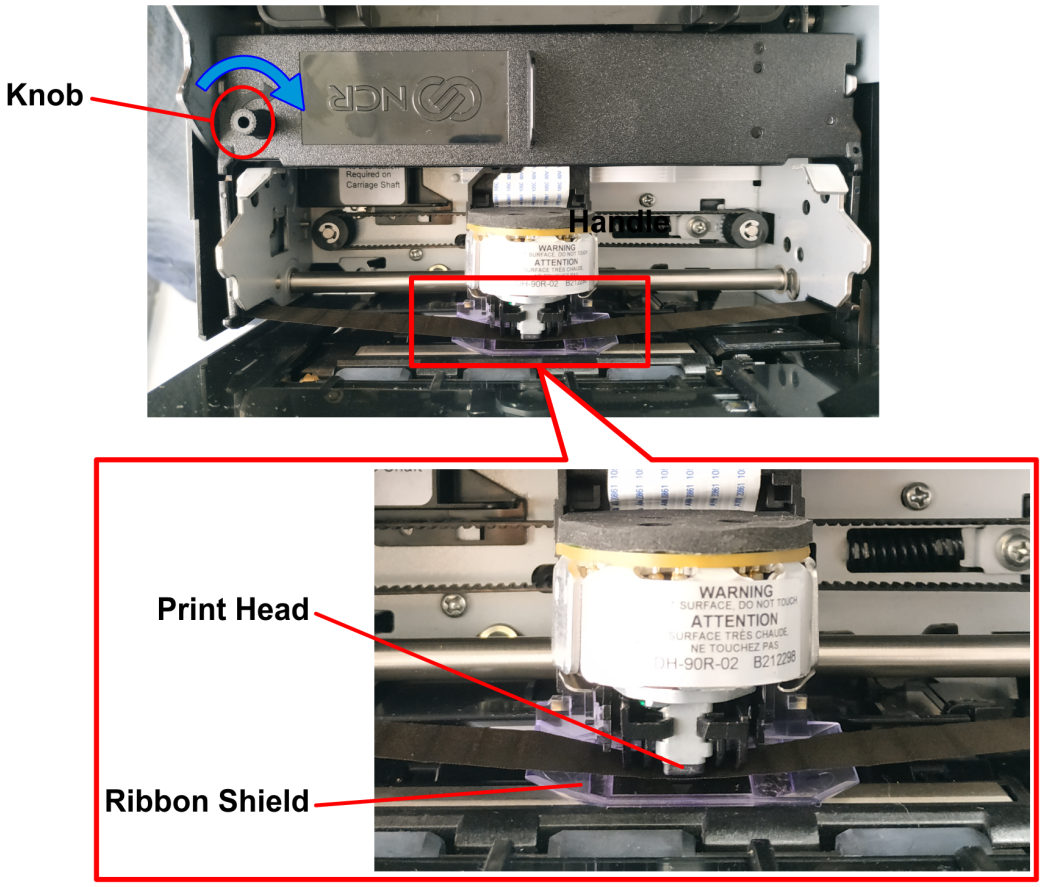
1. Using the slots on the left and right sides of the ribbon cassette as guides, mount the ribbon cassette assembly onto the metal catches on the printer slip frame, and then push the ribbon cassette assembly into place.



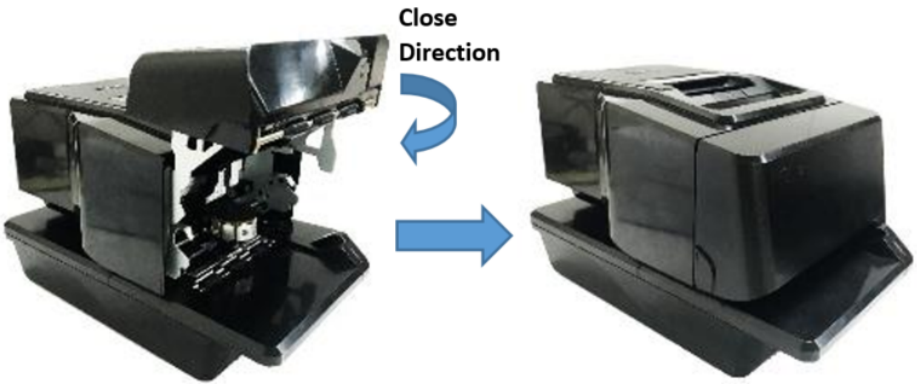
Note: At this point, the ribbon fabric may still be loose or askew, as shown in the following image.



2. To tighten or correct the position of the ribbon fabric, rotate the knob clockwise until the ribbon fabric is properly inserted between the ribbon shield and the print head.



3. Close the front cover.



Printing on Forms or Checks

There are several types of transactions that require you to insert a form or check into the printer.

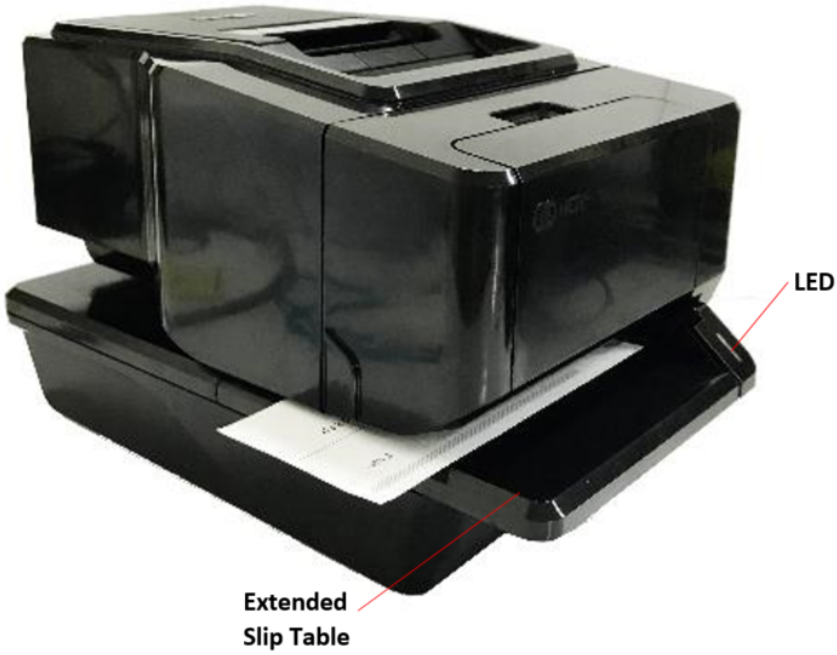
- Credit card transaction. Some credit card transactions may be printed on the receipt station and not require any forms.
- Multiple-part forms such as credit transactions or merchandise returns
- Electronic funds transfers
- Check printing, such as printing the date, payee, and amount on the check face
- Check endorsement

To print on forms or checks, follow these steps:

1. Position the form or check on the slip table.
   a. Insert the top first, with the print side up.
   b. Slide the form or check to the right until it aligns with the guide or wall, and then slide it toward the back until it touches the form stopper.

Note: If the form is extra long, insert it from the side so it can slide over the form stopper. Then, align it with the guide or wall and with any preset mark made on the slip table for custom forms.

Note: When the form or check is properly inserted, the green LED on the slip table turns on. That means that the form has covered the two sensors on the slip table.



Note: Although the image above illustrates a check being inserted into the printer, the instructions apply to any type of form. The 7169 can print on forms up to four-parts thick. For more information about the type of forms that can be used, refer to *Ordering forms* on page 60.

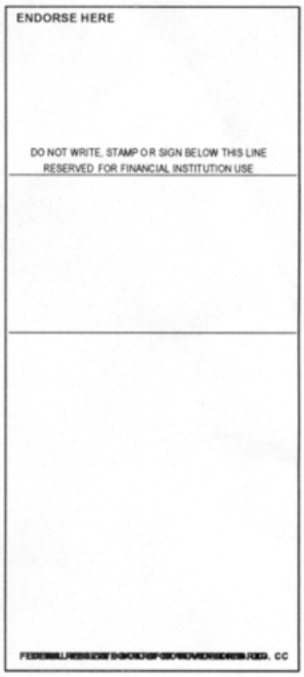
2. Follow the instructions from the host computer. The printer then begins printing.
3. Remove the form or check after it has been fed back out.
4. Follow the instructions from the host computer to finish the transaction.

Validating and Verifying Checks

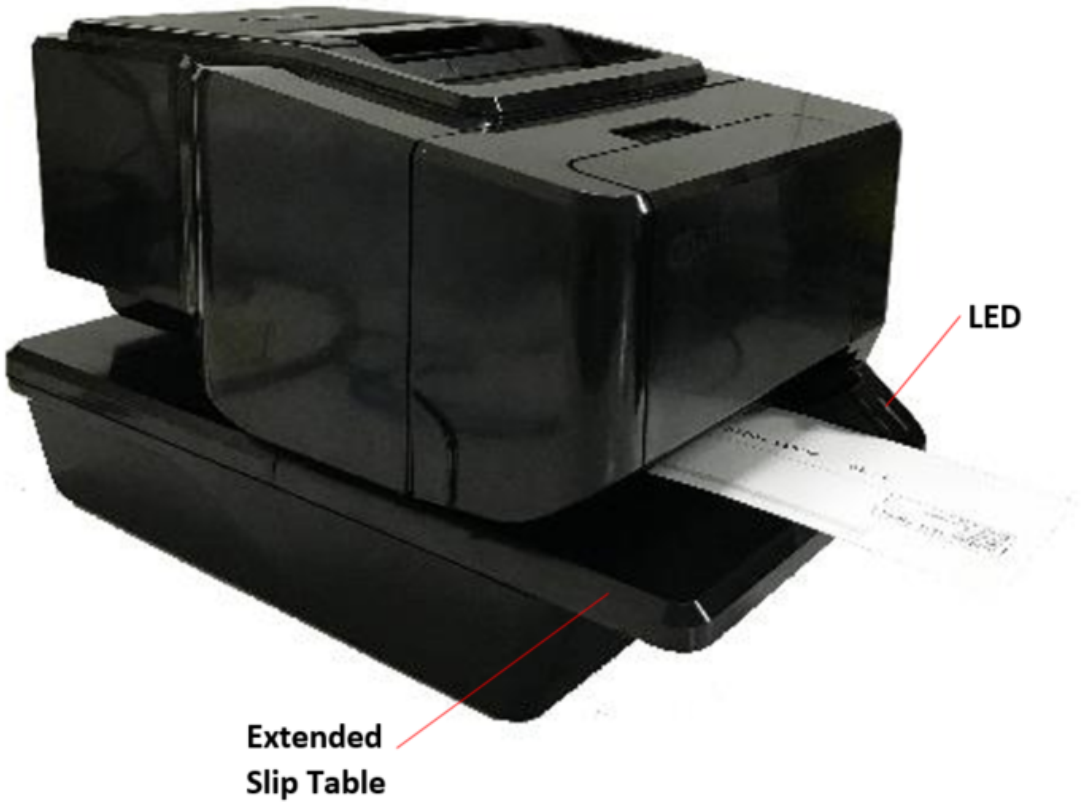
If the MICR check reader feature is present, checks are verified and then validated.

1. Position the check on the slip table.
   a. Insert the check from the front and place it on the slip table face down, with the MICR characters to the right, as shown in the following illustration.
   b. Slide the check to the right until it aligns with the guide or wall.
   c. Slide the check toward the back until it touches the form stopper or align it with any preset mark made on the slip table.

Note: When the check is properly inserted, the green LED on the slip table turns on. That means that the check has covered the two sensors on the slip table.



Check Orientation



2. Follow the instructions from the host computer.

   If the MICR check reader feature is present, the check is fed in and out while the check numbers are read. If the check is verified as good, it is then validated. If the check is not verified as good, it is not validated.

Note: Do not hold or keep the check from moving during the MICR check reader transaction or the check numbers will not be read accurately

3. Remove the check after it has been fed all the way back out.
4. Follow the instructions from the host computer to finish the transaction.

Ordering Paper and Supplies

Selecting thermal receipt papers

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.

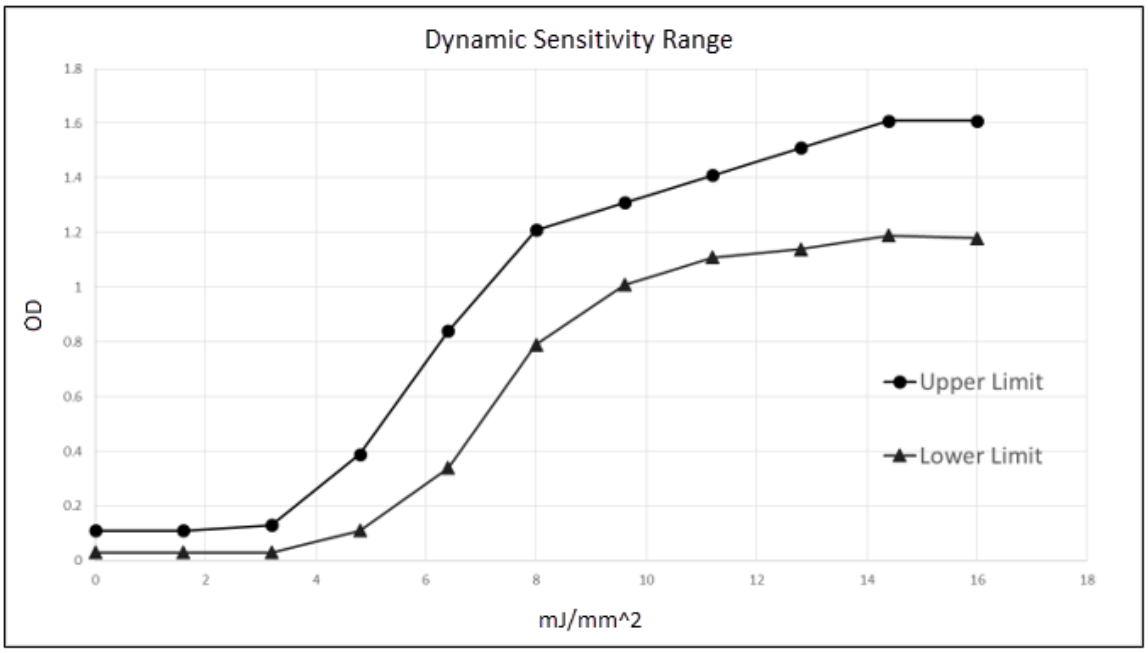
! Important: NCR does not test individual suppliers' papers. It is the responsibility of users of the printers to ensure that the paper they intend to use does not have a detrimental effect on the life of the printers. Use of such paper invalidates any warranty related to the performance of the printer.

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 the paper has the 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.
End of Roll Indicator	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.

Requirement	Specification
Product essential functionality and features that should be included in the customer's specification for receipt paper	The following must be observed: • The coating should not cause undue wear to the print head. • The surface area of the paper should be smooth. • All edges must be correctly cut and must be smooth. • 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. • 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. • The paper must allow for crisp lines to be produced when the paper is heated. • The paper should be sourced in accordance with health and safety, with environmental policies, and in adherence to any local regulations. • The paper should be suitably packed and protected to avoid damage during transport.
Chemical in Paper	The chemical elements of the paper, coating, and inks shall not exceed the following amount: • Titanium dioxide, TiO_2: 0 ppm (max) • Silicon dioxide, SiO_2: 0 ppm (max) • Mullite, $3Al_2O_32SiO_2$: 0 ppm (max) • Sodium, Na: 1050 ppm (max) • Chloride, Cl: 500 ppm (max) • Potassium, K: 250 ppm (max) • Suflate, SO_4: 800 ppm (max) • Ammonium, NH_4: 800 ppm (max) The chemicals listed here are not exhaustive, and other chemicals may reduce the life expectancy of the printer, the print head, or both.
Roll Width	• 80 mm (+0.5 / -1.2mm) • 58 mm (+0 / -1.0 mm)
Roll Diameter	Maximum of 83 mm

Requirement	Specification
Roll Length	Approximately 88 m
Core Inner Diameter	12.7 mm (Typical)
Core Outer Diameter	18 mm (Typical)
Core Width	79 mm (Typical)
Core Material	Plastic or Chipboard
Paper weight	44~70 gsm
Paper caliper thickness	44~70 um
Paper Winding Direction	Thermal coating facing out
Smoothness	300 sec min (ISO 5627)
Dynamic sensitivity	Energy to be equal to or less than 11.2 mJ/mm^2 at 1.1 OD **Note:** For more details, refer to the *Dynamic Sensitivity Range* graph.
Brightness	Less than 85%



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 7169 printer.

Paper Manufacturer	Media Model	Notes
Koehler	Blue4est®	For more information, refer to *https://www.koehlerpaper.com/en/products/Thermal-paper/Blue4est-thermal-paper.php*

Ordering forms

The 7169 Printer prints on single-part or multiple-part forms in the slip station (up to five-part forms). Forms and slips must meet the following requirements:

- Front insertion (minimum):

  51 mm (2.0 inches) wide

  70 mm (2.75 inches) long
- Side insertion (minimum):

  203 mm (8.0 inches) wide

  51 mm (2.0 inches) long
- Single-ply forms should be on paper that is greater than 15 pounds.
- Multiple-part forms (up to five parts) should be no thicker than **0.406 mm** (0.016 inches).
- If multi-part forms are used, the cardstock must be the last ply of the form.

Note: To order forms, contact your sales representative.

Ordering ribbon cassettes

Stock Numbers:

- (purple ribbon cassette—8 million characters) 127022
- (black ribbon cassette—5 million characters) 127035

Note: To order ribbon cassettes, contact your sales representative.

Ordering other supplies

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

Item	Type	Alias Number
External Power Supply	75W External Power Supply, No Power Cord	7167-K511
	75W External Power Supply with US Power Cord	7167-K510
	60W External Power Supply	7197-K510
AC Cables for External Power Supply	US Power Cord (no plug)	1416-C325-0030
	UK Power Cord	1416-C321-0030
	SEV Power Cord	1416-C320-0030
	Australian Power Cord	1416-C322-0030
	International Power Cord (with plug)	1416-C319-0030
	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
	0.9 meter (Y-Cable)	1432-C516-0009
Narrow 58mm Width Paper Guide	58 mm	7199-K058
CAT 5E Ethernet Cable	8–wire	1432-C046-0030

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 7169 Multifunction Printer does not require a scheduled maintenance. Clean the cabinet as needed to remove dust and finger prints. 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 Problems* on page 64.

Cleaning the slip station

The slip station does not require a scheduled maintenance. If needed, clean the Dot Matrix platen bar and roller with isopropyl alcohol to remove dust and ribbon ink.

Caution: Do not clean the carriage shaft of Dot Matrix print head. This may scratch the shaft and cause high friction for carriage movement.

MICR Read Head

If problems related to reading of checks are encountered, clean the MICR read head by wiping it with cotton swabs and isopropyl alcohol.

Chapter 2: Troubleshooting Problems

Overview

The NCR 7169 Multifunction Printer is a simple and generally trouble–free printer. The multi–colored LED lights provide users 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 the problem.

This section describes some problems that you may encounter with the printer. You may be able to fix some of the conditions or problems without calling for the assistance of a service representative. However, if a problem persists, contact a service representative. For more information, refer to *Contacting a Service Representative* on page 75.

Red LED is Off or Printer Will Not Print

Cause	What to Do	Where to Go
Cables may not be connected properly	• Check all cable connections. • Make sure that the host computer and power supply are both on, which means that the power supply is turned on and is plugged to an outlet.	Refer to *Connecting the Cables* on page 9.
Power supply may be defective	If the power supply is plugged in but does not come on, order a new power supply.	Refer to *Ordering Paper and Supplies* on page 57.

Green LED is Blinking Slow

Cause	What to Do	Where to Go
Receipt paper is low	• Make sure there are about **4.5 ± 3 meters** (15 ±10 feet) of paper left. • Change the paper soon to avoid running out of paper in the middle of a transaction.	Refer to *Loading and Changing the Receipt Printer* on page 46.

Amber LED is Blinking Fast

Cause	What to Do	Where to Go
Receipt paper is out	Change the paper now. Do not run a transaction without paper to avoid data loss.	Refer to *Loading and Changing the Receipt Printer* on page 46.
Receipt cover is open	Close the cover. The printer will not operate with the cover open.	(None)
Knife failure	• Open the receipt cover and check the knife. • Clear any jammed paper. • Tear off any excess paper against the tear–off blade.	(None)
	Contact a service representative if the above steps do not solve the problem.	Refer to *Contacting a Service Representative* on page 75.
AC supply voltage is out of range	If paper is not low and no conditions indicate that the thermal print head is too hot, the power supply voltage is likely out of range.	(None)
	Contact a service representative if the above step does not solve the problem.	Refer to *Contacting a Service Representative* on page 75.

Cause	What to Do	Where to Go
Thermal print head temperature is out of range	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. • If the temperature of the print head is too hot, adjust the room temperature or move the printer to a cooler location. • If the print head is overheating because of printing high density graphics continuously, reduce the graphics print density.	Refer to *Physical and Operating Environment* on page 152 for the recommended temperature range for operating the printer.
	If the printer continues to overheat, contact a service representative.	If the printer continues to overheat, refer to *Contacting a Service Representative* on page 75.
Power supply voltage is out of range	If paper is not low and no conditions indicate that the print head is too hot, the power supply voltage is out of range. Contact a service representative.	Refer to *Contacting a Service Representative* on page 75.

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. **Note:** Do not use the alcohol to clean other parts of the printer. Damage will occur.	Refer to *Cleaning the Printer* on page 63.
	Contact a service representative if this does not resolve the problem.	Refer to *Contacting a Service Representative* on page 75.

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 clean it enough. For information on the recommended paper, refer to *Ordering Paper and Supplies* on page 57. For information on power consumption, refer to *Power Requirements* on page 151.

Slip or Forms Printing is Light

Cause	What to Do	Where to Go
Ribbon cassette is worn	Replace the ribbon cassette.	Refer to *Replacing the Ribbon Cassette* on page 50.
	Contact a service representative if this does not solve the problem.	Refer to *Contacting a Service Representative* on page 75.

LED (Slip Table) Does Not Come On

Cause	What to Do	Where to Go
Form or check not inserted properly	• For regular-sized forms: Slide the form or check to the right until it aligns with the guide or wall, and then slide it toward the back until it touches the form stopper. • For long-sized forms: Insert the form or check from the side so it can slide over the form stopper. Then, align it with the guide or wall and with an preset mark made on the slip table for customer forms.	Refer to *Printing on Forms or Checks* on page 53 or to *Validating and Verifying Checks* on page 55.
	Contact a service representative if the above step does not solve the problem.	Refer to *Contacting a Service Representative* on page 75.

Forms Skew or Catch

Cause	What to Do	Where to Go
Form or check skewing or catching in slip station due to an obstruction or paper jam	• Open the front cover, then check for any paper jams or obstructions in the slip station. • Clear the obstruction or jammed paper.	(None)
	Contact a service representative if the above steps do not solve the problem.	Refer to *Contacting a Service Representative* on page 75.

MICR Check Reader Not Reading Properly

Cause	What to Do	Where to Go
Magnetic Ink Character Recognition (MICR) check reader does not read or misreads checks	• Open the slip cover. • Clean the MICR read head with cotton swabs and isopropyl alcohol.	(None)
	Contact a service representative if the above steps do not resolve the problem.	Refer to *Contacting a Service Representative* on page 75.

Stuck Cutter Blade

If a cutter blade is stuck in a fully extended position, do the following steps to fix it:

1. Open the front cover.
   a. Unlatch the receipt front cover by pulling on the holes located on both sides of the front cover.

b. Flip to fully open the front cover.

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

3. Remove the jammed paper.

Note: Ensure that there is no paper at the paper exit area.

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

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 the front cover or the top cover is open.

Clearing Paper Jams

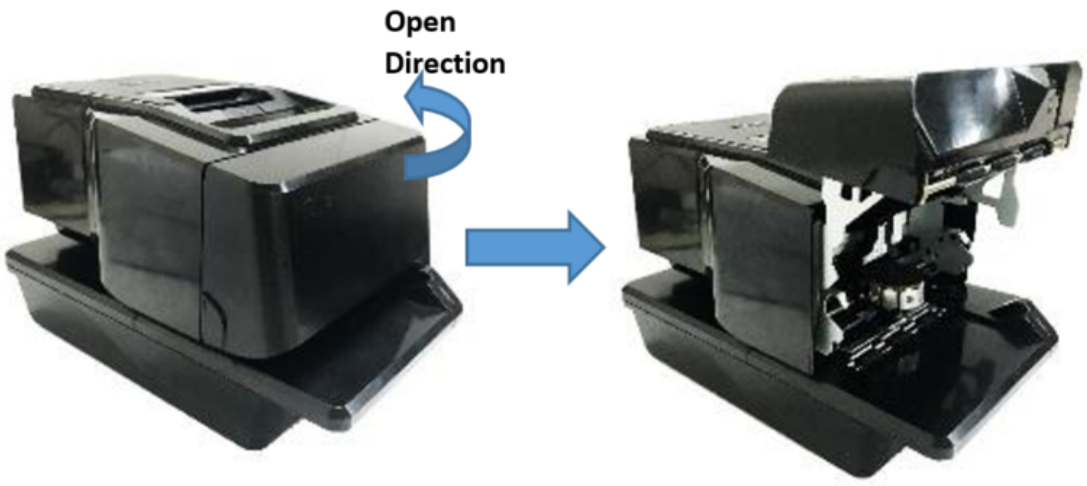
Paper jam may occur on any of the following printer areas:

- Slip printing area
- Flip mechanism area
- Thermal area

Slip printing area

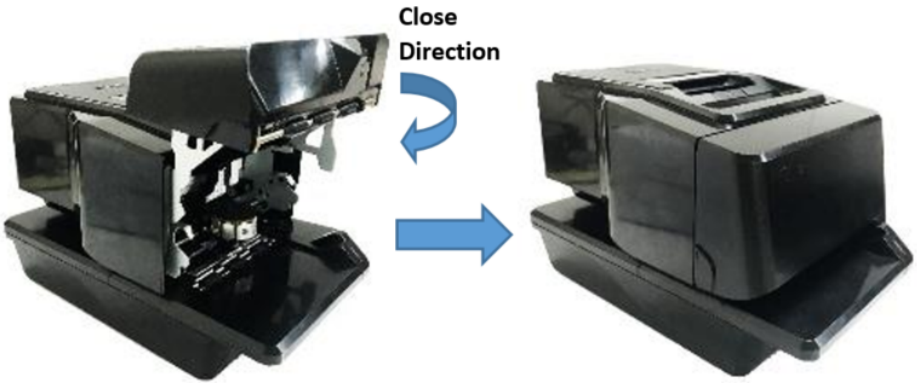
If the paper jam occurs on the slip printing area, do the following steps:

1. Open the slip front cover.



2. Remove the jammed paper and any paper debris.

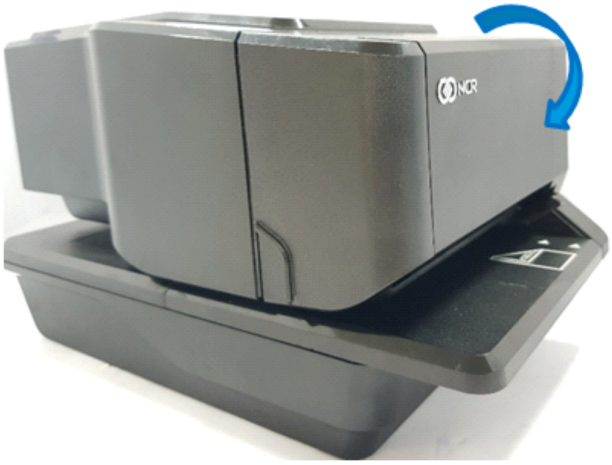
3. Close the front cover.



Flip mechanism area

If the paper jam occurs on the flip mechanism area, do the following steps:

1. Open the flip door cover.



2. Remove the jammed paper and any paper debris.

3. Close the flip door cover.

Thermal area

If the paper jam occurs on the thermal area, refer to *Stuck Cutter Blade* on page 69 for procedures.

Other Serious Problems

NCR recommends to fix the following problems with the assistance of a qualified service representative. For more information, refer to *Contacting a Service Representative* below.

- 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 an 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 7169 Multifunction Printer Parts Identification Manual* (BCC5–0000–5351)
- *NCR 7169 Multifunction Printer Service Guide* (BCC5–0000–5350)

Chapter 3: Service Level Troubleshooting

Diagnostics Overview

The NCR 7169 Multifunction 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.

- **Level 0 Diagnostics (Startup)**—the printer performs these tests during the startup cycle. For more information, refer to *Level 0 Diagnostics (Startup)* on the next page.
- **Level 1 Diagnostics (Printer Configuration)**—allows configuration of the printer using a Configuration Menu that is printed on a receipt. For more information, refer to *Level 1 Diagnostics (Printer Configuration)* on page 78.
- **Level 2 Diagnostics (Runtime)**—the printer checks the status during normal operation. For more information, refer to *Level 2 Diagnostics (Runtime)* on page 105.
- **Level 3 Diagnostics (Remote)**—the printer keeps track of counters during normal operation.
- **Vendor Adjustment**—the printer performs this task in off–line mode. This allows changing the mechanical settings and performing printer test. Modifications of these settings should be done by service personnel only.

Level 0 Diagnostics (Startup)

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 the following:
   a. CRC check of the firmware ROM, read external RAM
   b. EEPROM check

Note: Failure causes startup diagnostics to stop.

The Printer Status (Amber) LED then turns on when the above tests have been completed.

3. Check if paper is present.
4. Return the knife to the home position.

Note: Failure causes a fault condition.

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

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

6. Return the Dot Impact Head to home position.

Note: Failure causes turning on the Printer Status (Amber) LED until the Top Cover or 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 printer settings, refer to *Level 1 Diagnostics (Printer Configuration)* on the facing page. If the EEPROM load has failed, the Printer Status LED is turned on.

Level 1 Diagnostics (Printer Configuration)

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 75.

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 users 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

Use the Configuration Menu to set the printer to use a USB communication.

To select a Communication Interface setting, press the Paper Feed button according to the number of clicks associated to the setting.

Note: Default settings are marked with asterisks (*).

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

Note: The settings used depends on the software the operator is using and the capabilities of the host computer.

- To select a communication setting, press the Paper Feed button. Default settings are marked with an asterisk (*).

```
** 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, then hold Button DOWN.
At least 1 second to validate.
```

**** BAUD RATE**

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

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

**** DATA BITS**

8 Data Bits*	→	1 Click
7 Data Bits	→	2 Clicks

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

**** STOP BITS**

1 Stop Bits*	→	1 Click
2 Stop Bits	→	2 Clicks

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

**** PARITY**

No Parity*	→	1 Click
Even Parity	→	2 Clicks
Odd Parity	→	3 Clicks

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

**** FLOW CONTROL**

Software (XON/XOFF)	→	1 Click
Hardware (DTR/DSR)*	→	2 Clicks

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

```
** RECEPTION ERRORS
 Ignore Errors      →    1 Click
 Print '?'*         →    2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

** DSR SIGNAL
 Enable             →    1 Click
 Disable            →    2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
```

USB interface settings (Standard model)

To change the USB Interface setting, select **USB Type** in the hardware menu.

```
** USB Type
 ION (EpiC)         →    1 Click
 NonION (NHPI) *    →    2 Clicks
 NonION (PRTR)      →    3 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
```

Ethernet interface settings (Option)

```
** Interface Ethernet
 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, then hold Button DOWN.
At least 1 second to validate.
```

**** ERTC Protocol**

TCP*	→	1 Click
UDP	→	2 Clicks

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

**** DHCP**

Disable*	→	1 Click
Enable	→	2 Clicks

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

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

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

****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.

****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.

**** SNMP Trap 1**

Disable*	→	1 Click
Enable	→	2 Clicks

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

```
** SNMP Trap 2
Disable*                → 1 Click
Enable                  → 2 Clicks

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

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 for the option you want.

```
Save new parameters?
 YES            →   Long Click
 NO, MODIFY     →   Short Click
```

Emulation/Software options

Use the Emulation/Software Menu to set the following:

- Receipt synchronization
- Default lines per inch
- Carriage return usage
- Asian mode
- Font type
- Compress pitch
- 48 Character mode
- PDF417 max column print
- Auto reset
- Compatibility top margin
- Emulation mode
- Slip print width option
- Platen wait time

To select the Emulation/Software setting, press the Paper Feed button according the number of clicks associated to the setting.

Note: Default settings are marked with asterisks (*).

Receipt synchronization

This function allows users to select whether to enable or disable receipt synchronization printing.

When Receipt Synchronization is enabled (Mode 1 or Mode2), the printer returns the status for the buffered status command after confirming the start of printing.

The following commands are the buffer 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
```

The command/status sequence is completely the same for Mode1 and Mode2. The only difference is the printing speed.

- Mode1—maximum of 12 ips (the same as the normal printing)
- Mode2—maximum of 4 ips (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, the printer returns the status for buffered status command immediately after decoding the status command.

The Receipt Synchronization allows for increased print speed or provides the ability to check for the completion of each print line. When the Receipt Synchronization is enabled the highest print speed is achieved but the verification that the print line has been successfully completed occurs every 10 print lines.

⚠ **Caution:** Be extremely careful in changing any of the printer settings. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To select a receipt synchronization, press the Paper Feed button.

```
**********Receipt Sync**********
 Sync. Mode            →      1 Click
 Disabled*             →      2 Clicks
 Sync. Mode  1         →      3 Clicks
 Sync. Mode  3         →      4 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
```

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 for the option you want.

```
Save new parameters?
 YES           →   Long Click
 NO, MODIFY    →   Short Click
```

Default lines per Inch

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

- To select a lines per inch option, press the Paper Feed button.

```
**********Default LPI**********
 8.13 Lines per Inch   →      1 Click
 7.52 Lines per Inch*  →      2 Clicks
 6 Lines per Inch      →      3 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                   →       Long Click
 NO, MODIFY            →       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.

- To select a carriage return usage, press the Paper Feed button.

```
***************Carriage*****************
 Ignore CR             →      1 Click
 Use CR as Print Cmd*  →      2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                   →       Long Click
 NO, MODIFY            →       Short Click
```

Asian Mode

This function allows the users to select an Asian character for the printer.

- To select an Asian Mode, press the Paper Feed button.

```
********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, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                   →      Long Click
 NO, MODIFY            →      Short Click
```

Set font type option

This function enable user to select the font type of the receipt printing as follows.

⚠ **Caution:** Be extremely careful in changing any of the printer settings. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To select a font type, press the Paper Feed button.

```
************SPECIALFONT*************
 Original Font*              →    1 Click
 Mode 1 CP473/856 Large      →    2 Clicks
 Mode 2 866 Mini             →    3 Clicks
 Mode 3 Constructed 874      →    4 Clicks
 Mode 4 Contextual 1256      →    5 Clicks
 Mode 5 Context Fix 1256     →    6 Clicks
 Mode 6 Greek Font Map       →    7 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                →    Long Click
 NO, MODIFY         →    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. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To set the compress pitch, press the Paper Feed button.

```
****************** COMPRESS PITCH FONT************
 Valid                  →      1 Click
 Invalid*               →      2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                    →      Long Click
 NO, MODIFY             →      Short Click
```

Set 48 Character mode

This function allows users to set the 48 Character printing. The selections are OFF or ON. The end result is to print 48 characters in one line.

- To select a Char 48 column print option, press the Paper Feed button.

```
***************48 Character Print***************
 Disable*               →      1 Click
 Enable                 →      2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                    →      Long Click
 NO, MODIFY             →      Short Click
```

Set PDF417 Max Column print

This function allows the users 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.

Note: RS485 does not support this function.

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

- To select a PDF417 max column, press the Paper Feed button.

```
*********PDF417 MAX COLUMNS********
 9 Columns*              →      1 Click
 14 Columns              →      2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                     →      Long Click
 NO, MODIFY              →      Short Click
```

Set Auto Reset option

Set Auto Reset using the configuration menu. Answer *No* to the questions printed on the receipt until you come to the instructions for Auto Reset.

⚠ **Caution:** Be extremely careful in changing any of the printer settings. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To set the auto reset option, press the Paper Feed button.

```
** 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.
Save new parameters?
 YES                     →      Long Click
 NO, MODIFY              →      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 you come to the instructions for Compatibility Top Margin.

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

- To set the compatibility top margin, press the Paper Feed button.

```
**********Compatible Top margin*******
 Disable                →       1 Click
 Enable*                →       2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

Save new parameters?
 YES                    →       Long Click
 NO, MODIFY             →       Short Click
```

Set Emulation Mode option

Printer emulations determine the commands that are available to the printer.

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

- To select an emulation, press the Paper Feed button.

```
**********Emulation Mode*******
 NCR 7199*              →       1 Click
 ESC/POS                →       2 Clicks
```

Set Slip Printing Width option

This function allows users to select the width of slip printing.

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

- To select a slip printing width, press the Paper Feed Button.

```
**********Slip Print Width*******
 82.2mm*                →       1 Click
 120.7mm                →       2 Clicks
```

Set Platen Wait Time option

This function allows users to select the wait time that the paper uses for detection.

- To select a platen waiting time option, press the Paper Feed button.

```
**********Platen Wait Time**********
No Extra Time*      →    1 Click
Extra 1 second      →    2 Clicks
Extra 2 seconds     →    3 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
YES                 →    Long Click
NO, MODIFY          →    Short Click
```

Set Compatible Bar Code length

This function allows users to set a compatible bar code length.

- To select a bar code length option, press the Paper Feed button.

```
********** Slip Print Width **********
Disable*            →    1 Click
Enable              →    2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
YES                 →    Long Click
NO, MODIFY          →    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. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To select a USB type, press the Paper Feed button.

```
**********USB Type**********
 ION (Epic)            →    1 Click
 NonION (NHPI)*        →    2 Clicks
 NonION (PRTR)         →    3 Clicks
 NonION (4610)         →    4 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                   →    Long Click
 NO, MODIFY            →    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. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To select a USB speed, press the Paper Feed button.

```
**********USB Speed**********
 Full Speed*           →      1 Click
 High Speed            →      2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                   →      Long Click
 NO, MODIFY            →      Short Click
```

Set Print mode

Set the receipt print mode using the configuration menu. Select Hardware Options in the Configuration Menu and answer the questions printed on the receipt.

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

- To select the receipt print mode, press the Paper Feed button.

```
**************Print Mode*************
 High Speed Print*      →       1 Click
 High Quality Print     →       2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                    →       Long Click
 NO, MODIFY             →       Short Click
```

Print Density

This function allows users 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. For more information, consult an NCR technical support specialist.

- To select the print density, press the Paper Feed button.

```
******* 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, then hold Button DOWN.
At least 1 second to validate.
```

Note: If *1 click* is selected, it is printed as follows:

```
 -11                    →      1 Click
 -12                    →      2 Clicks
 -13                    →      3 Clicks
 -14                    →      4 Clicks
 -15                    →      5 Clicks

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

Save new parameters?
 YES                    →      Long Click
 NO, MODIFY             →      Short Click
```

Power Supply

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

- To select an option, press the Paper Feed button.

```
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.

Save new parameters?
YES                   →       Long Click
NO, MODIFY            →       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 power consumption in when the printer is in idle mode.

The printer goes to standby mode if no transaction data is received after the following conditions:

- 60 seconds after power on
- 1 second after one transaction

The printer exits from standby mode to normal mode in the following criteria:

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

Note: Opening or closing the flip cover does not affect the standby mode.

If this function is disabled, the printer does not shift to standby mode. When 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. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To select an option, press the Paper Feed button.

```
**********Standby Mode *******
 Disable                →       1 Click
 Enable*                →       2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                    →       Long Click
 NO, MODIFY             →       Short Click
```

Set Power Off mode

This function allows users to set the time to Power off mode. This setting determines the time when the printer powers off after it goes to standby mode. Once the device enters the power off mode, all LED are turned off. If the feed key is pressed, the printer exits power off mode and enters normal mode.

⚠ **Caution:** Be extremely careful in changing any of the printer settings. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

- To select an option, press the Paper Feed button.

```
********* POWER OFF MODE******
 Disable                →       1 Click
 Enabled (60min)        →       2 Clicks
 Enabled (12min)        →       3 Clicks
 Enabled (180min)       →       4 Clicks
 Enabled (240min)       →       5 Clicks
 Enabled (300min)       →       6 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                    →       Long Click
 NO, MODIFY             →       Short Click
```

Set Knife option

This option allows users to set the Knife Option if it is installed in the printer. This setting should only be changed if the option is added or removed.

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

- To select a knife option, press the Paper Feed button.

```
********** KNIFE ************
 Enable Knife *                  → 1 Click
 Disable Knife                   → 2 Clicks
 Enable Knife with Buzzer (Low)  → 3 Clicks
 Enable Knife with Buzzer (High) → 4 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                  →      Long Click
 NO, MODIFY           →      Short Click
```

Set Paper Width

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

- To select the paper width option, press the Paper Feed button.

```
**********PAPER WIDTH *******
 Paper Width = 80 mm*  →      1 Click
 Paper Width = 58 mm   →      2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                   →      Long Click
 NO, MODIFY            →      Short Click
```

Set Paper Low Detection

The Set Paper Low Detection enables or disables the paper low sensor for particular printer configurations.

- To select an option, press the Paper Feed button.

```
******** 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, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                       →      Long Click
 NO, MODIFY                →      Short Click
```

Set Color Paper option

This function allows users to set the color paper for the receipt thermal printer to monochrome or color paper.

- To select a color paper option, press the Paper Feed button.

```
********* SET COLOR PAPER *********
 Monochrome*               →      1 Click
 Color Paper               →      2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
Save new parameters?
 YES                       →      Long Click
 NO, MODIFY                →      Short Click
```

Set Buzzer Tone

This function allow users to set the buzzer tone to *low*, *middle*, or *high*.

- To select an option, press the Paper Feed button.

```
********** SET BUZZER TONE **********
 Low*                  →       1 Click
 Middle                →       2 Clicks
 High                  →       3 Clicks

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

Save new parameters?
 YES                   →       Long Click
 NO, MODIFY            →       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 you come to the instructions for power LED control.

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

- To select an option, press the Paper Feed button.

```
******** LED CONTROL Mode*******
 Auto Mode*            →       1 Click
 User Mode             →       2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

Save new parameters?
 YES                   →       Long Click
 NO, MODIFY            →       Short Click
```

Set MICR Dual Pass

This function allows users to enable or disable the MICR dual pass option.

- To select an MICR dual pass option, press the Paper Feed button.

```
************ MICR DUAL PASS ***********
 Dual Pass disable*    →       1 Click
 Dual Pass enable      →       2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

Save new parameters?
 YES                   →       Long Click
 NO, MODIFY            →       Short Click
```

Default Code page

This function makes it possible to select the default code page.

These are the code pages available for printing:

- Code page 437 (US English)
- Code page 850 (Multilingual)
- Code page 852 (Slavic)
- Code page 858 (with Euo symbol)
- Code page 860 (Portuguese)
- Code page 862 (Hebrew)
- Code page 863 (French Canadian)
- Code page 864 (Arabic)
- Code page 865 (Nordic)
- Code page 866 (Cyrillic)
- Code page 874 (Thai)
- Code page 1252 (Windows Latin #1)
- Code page 1256 (Windows Arabic)
- Code page Katakana
- Code Page 932 (Configurable on Asian Mode setting)
- Code Page 936 (Configurable on Asian Mode setting)
- Code Page 949 (Configurable on Asian Mode setting)
- Code Page 950 (Configurable on Asian Mode setting)
- Hungary
- Romania
- PC Code Page 737 (DOS Greek)
- PC Code Page 928 (Greek)
- PC Code Page 1255 (Hebrew)

For Asian code pages, code page 936, 949, or 950 replaces code page 932 in the above shown menu. Only one Asian code page (either 932, 936, 949, or 950) exists in the firmware.

To set the Code Page, emulation mode should be selected:

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 sub–menu will be 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
  Slip Print Width              →    13 Clicks
  Platen Waiting Time           →    14 Clicks
  Compatible Barcode Length     →    15 Clicks
```

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

   The following sub–menu will be displayed.

```
**CODE PAGE MENU
 Code Page 437*          →      1 Click
 Code Page 850           →      2 Clicks
 Code Page 852           →      3 Clicks
 Code Page 858           →      4 Clicks
 More Options            →      5 Clicks
Enter code, then hold Button DOWN
At least 1 second to validate
```

If more Options is selected, following sub menu will be displayed:

```
 Code Page 860          →       1 Click
 Code Page 862          →       2 Clicks
 Code Page 863          →       3 Clicks
 Code Page 864          →       4 Clicks
 More Options           →       5 Clicks
Enter code, then hold Button DOWN
At least 1 second to validate

 Code Page 865          →       1 Click
 Code Page 866          →       2 Clicks
 Code Page 874          →       3 Clicks
 Code Page 1252         →       4 Clicks
 More Options           →       5 Clicks
Enter code, then hold Button DOWN
At least 1 second to validate

 Code Page 1256         →       1 Click
 Code Page Katakana     →       2 Clicks
 Code Page Hungary      →       3 Clicks
 Code Page Romania      →       4 Clicks
Enter code, then hold Button DOWN
At least 1 second to validate

Save new parameters?
 Save the Change        →       Long Click
 Cancel the Change      →       Short Click
```

EEPROM to Default Settings

This selection resets the configuration to the default settings.

⚠ **Caution:** Be extremely careful in changing any of the printer settings. This is to avoid inadvertently changing other settings that might affect the performance of the printer.

```
********* Reset EEPROM to DEFAULT VALUES *********
Save the change*        →       Long Press
Cancel the change       →       Short Clicks
Enter code, then hold Button DOWN
At least 1 second to validate
```

Level 2 Diagnostics (Runtime)

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

- Paper out
- Cover open
- Knife unable to home
- Thermal 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 2 Hz.
- Number of blink depends on the block where an error occurs.

Receipt station

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 the *LED Control Request* pattern. LED pattern and the indication timing are specified by a system.

Errors	Color	Bezel LED
Memory Error	RED	1 Blink Pause 5 seconds
Thermal Head Disconnected	RED	2 Blink Pause 5 seconds
Thermal Head Abnormal Temperature	RED	2 Blink Pause 5 seconds
Cover Open	AMBER	3 Blink Pause 5 seconds
Paper End	AMBER	4 Blink Pause 5 seconds
Printer Jam	AMBER	5 Blink Pause 5 seconds
Cutter Error	AMBER	6 Blink Pause 5 seconds
Thermal head over heat	AMBER	2 Blink Pause 5 seconds

Slip station

Flip block	1 Blink
Slip/Flip Cover	3 Blinks
Slip block	4 Blinks
Print block	5 Blinks
Shutter block	6 Blinks

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

Errors	Color	Bezel LED
Flip Jam	AMBER	1 Blink Pause 5 seconds
Slip/Flip Cover Open	AMBER	3 Blink Pause 5 seconds
Slip Jam	AMBER	4 Blink Pause 5 seconds
Carrier Jam	AMBER	5 Blink Pause 5 seconds
Shutter Jam	AMBER	6 Blink Pause 5 seconds

Level 3 Diagnostics (Remote)

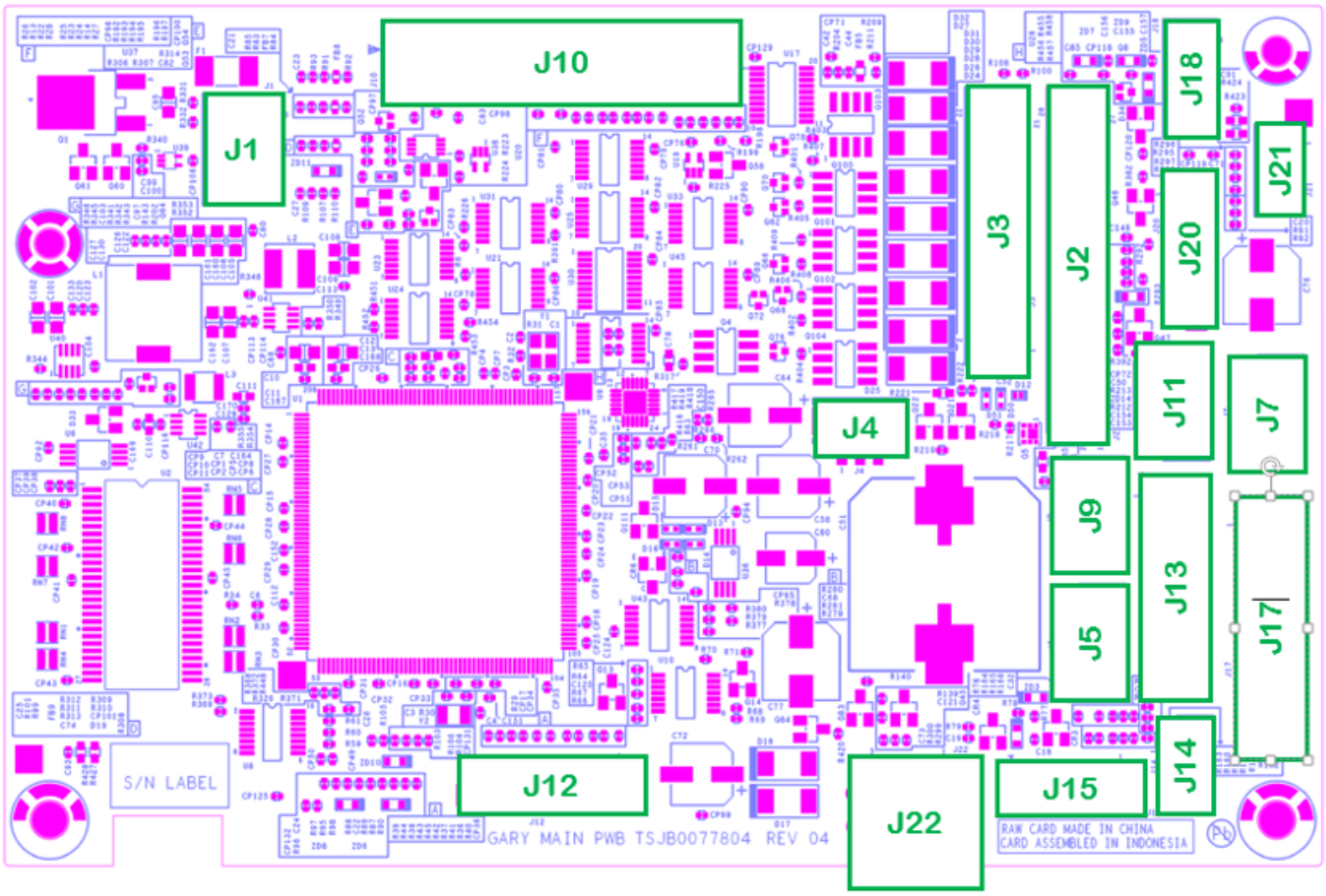
This option is used to check the quality control. This option is also used to determin the printer's operating condition, allowing for preventative maintenance or workload balancing before a printer encounters problems. Remote diagnostics keep track of the following tallies and print them on the receipt during the print test.

- Serial number
- Model number
- CRC number
- Number of receipt lines printed
- Number of knife cuts
- Number of slip lines
- Number of slip characters
- Number of MICR reads
- Number of hours printer is on
- Number of flash cycles
- Maximum temperature reached
- Number of cutter jams
- Number of times the door is open

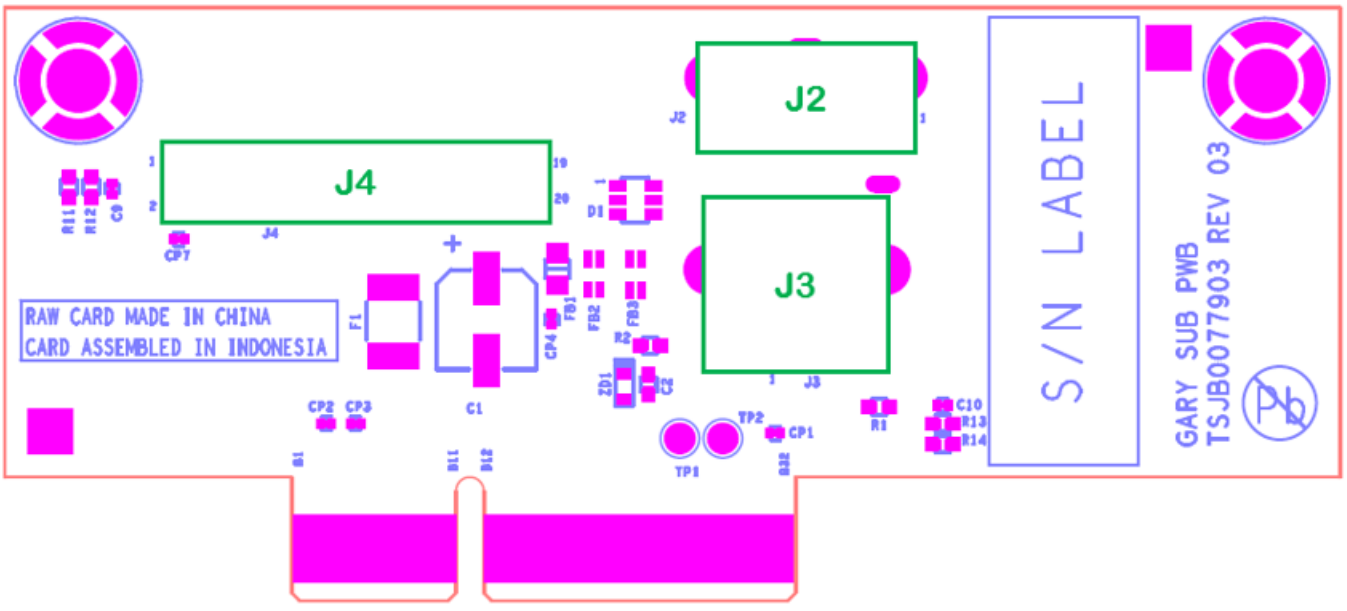
For more information, refer *Level 1 Diagnostics (Printer Configuration)* on page 78.

PC Board connector locations and designations

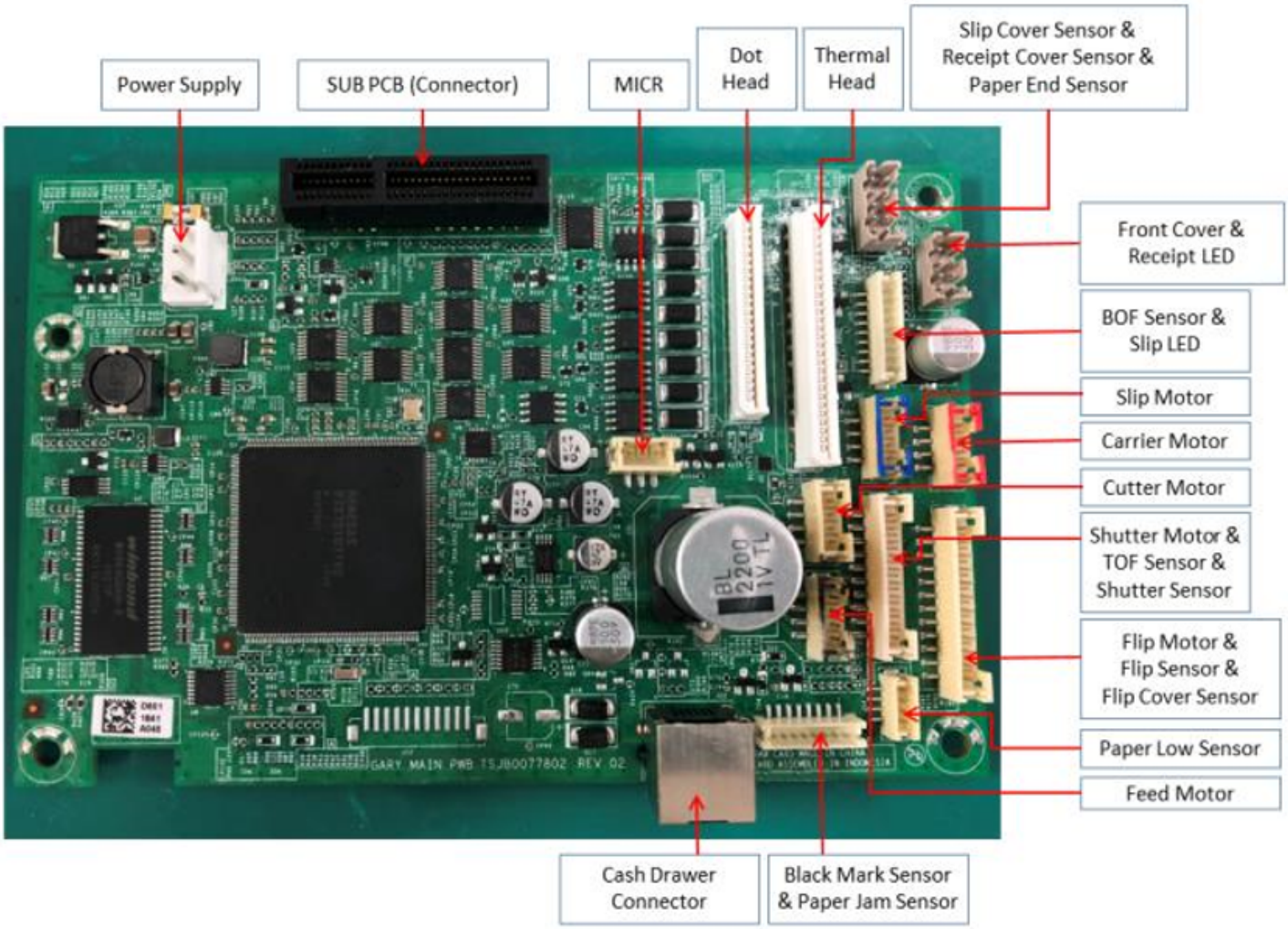
Main PCB



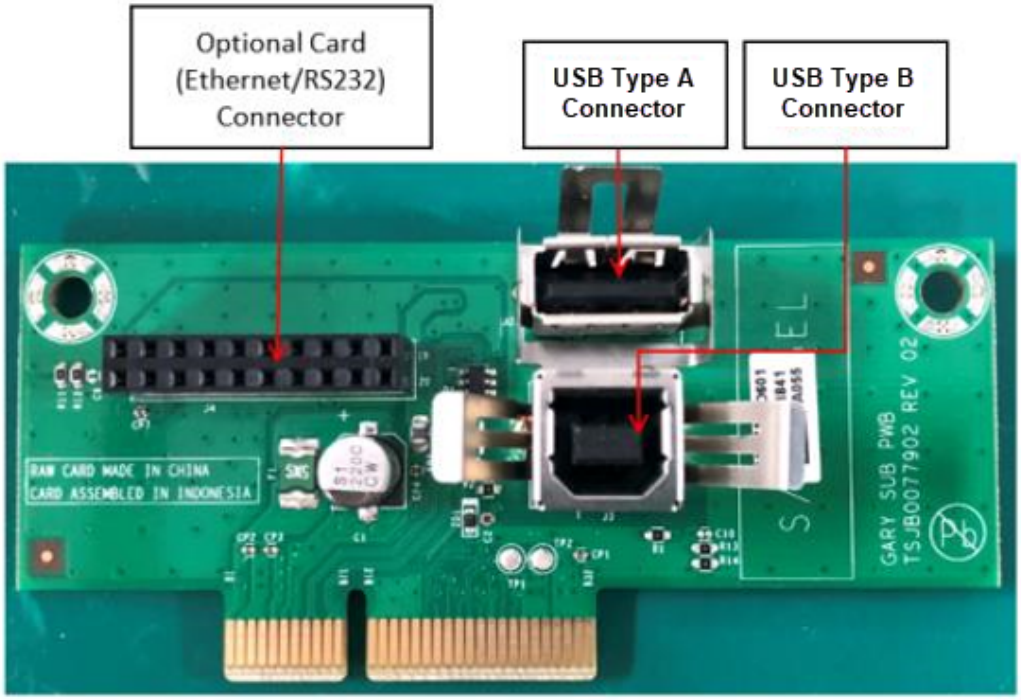
Sub PCB



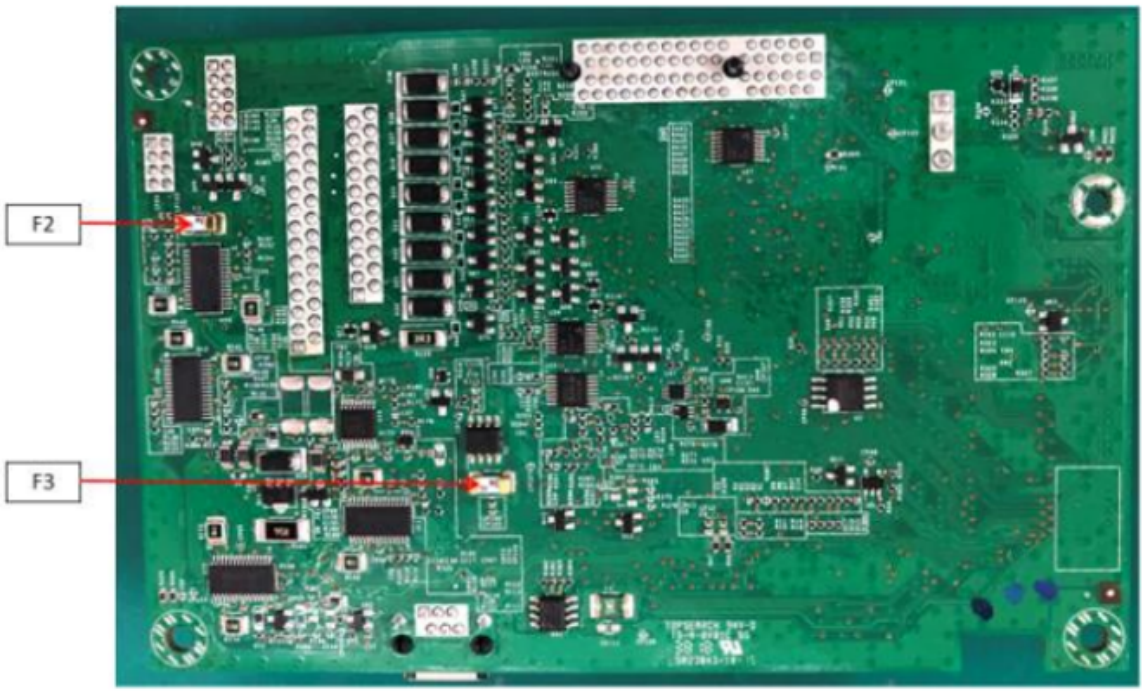
Driver board Main PCB



Driver board Sub PCB



Fuse location and information



Location	Part description	Specifications
F1	25H5000G (skygate) or equivalent	125V / 5A
F2	25H3000G (skygate) or equivalent	125V / 3A
F3	25H3000G(skygate) or equicalent	125V / 3A

Chapter 4: Communication

Communication Overview

A program translates the data from the host computer to a language the printer can understand. This program must be in place so that the printer can print a receipt. It must tell the printer exactly how to print each character. This chapter describes how to create a program or modify an existing one.

Interface

Set up a communication link so that the printer can communicate with the host. The 7169 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.

The host and printer can communicate only when the interface parameters are matched and the proper protocol is used. The 7169 ethernet model supports the ethernet communication interface.

Sending commands

After 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.

Note: 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 with the `LPRINT` command.

Example: `LPRINT CHR$(&H0A)`

This command sends the hexadecimal number `0A` to the printer. With the command, the printer prints the contents of its print buffer. Previously sent commands tell the printer exactly how the data should be printed on the paper.

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

This command sends the Hex numbers `12 41 42 43 0A` to the printer. With the command, the printer then sets itself to double wide mode (12), loads the print buffer with "`ABC`" `(41 42 43)`, and finally, prints `(0A)`. The communication link that the BASIC program uses for the output must be matched with that of the printer's.

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 for the communications settings you want.

Defaults are marked with asterisks (*).

```
** 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, then hold Button DOWN.
At least 1 second to validate.

** BAUD RATE
115200 Baud   -> 1 Click
57600 Baud    -> 2 Clicks
38400 Baud    -> 3 Clicks
19200 Baud*   -> 4 Clicks
9600 Baud     -> 5 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
```

```
** DATA BITS
8 Data Bits*  -> 1  Click
7 Data Bits   -> 2  Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

** STOP BITS
1 Stop Bits*     -> 1  Click
2 Stop Bits      -> 2  Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

** PARITY
No Parity*       -> 1 Click
Even Parity      -> 2 Clicks
Odd Parity       -> 3 Clicks
Enter code, then hold Button DOWN.

** RECEPTION ERRORS
Ignore Errors    -> 1  Click
Print '?'*       ->  2  Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

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

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

Ethernet Interface Settings (Option)

Press the Paper Feed button for the communications settings you want.

```
** Interface Ethernet
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, then hold Button DOWN.
At least 1 second to validate.

** ERTC Protocol
TCP*  -> 1 Click
UDP   -> 2 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.

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

** 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, then hold Button DOWN.
At least 1 second to validate.
```

**** Physical LAN Speed**

```
Auto*           -> 1 Clicks
100 Mbps Full   -> 2 Clicks
100 Mbps Half   -> 3 Clicks
 10 Mbps Full   -> 4 Clicks
 10 Mbps Half   -> 5 Clicks
Enter code, then hold Button DOWN.
At least 1 second to validate.
```

****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.
```

****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.
```

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

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 for the option you want.

```
Save new parameters?
YES           -> Long Click
NO, MODIFY    -> Short Click
```

RS-232C Interface

The RS-232C version of the 7169 printer offers the standard options, which are selectable in the Diagnostic mode. For more information, refer to *Communication Interface Modes* on page 114.

Print speed and timing

The fast speed of the printer requires its printer application to send data to the printer at least as fast as the data is printed. The 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 sends 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 not be able to print at full speed. But, if the application sends data at 19.2 kilobaud 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, which slows down the printer, regardless of the baud rate.

Char/Line	Lines/Receipt	Transmit Time: 9600 baud	Transmit Time: 19.2 kilobaud	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 shorter than the print time, which allows the printer to print at full speed.

Char/Line	Lines/Receipt	Transmit Time: 9600 baud	Transmit Time: 19.2 kilobaud	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

The Ethernet interface uses either 10BASE–t, 100BASE–TX protocol. The Ethernet version of the 7169 printer offers the web configuration, which configures the Ethernet settings through a Web browser. For more information, refer to the *Communication Interface Modes* on page 114.

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 its responses through 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 its responses.

Port number	3000 (Default)

Simple Network Management Protocol (SNMP)

The Simple Network Management Protocol (SNMP) manager uses the SNMP to obtain the printer information and status from the printer SNMP agent.

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

Dynamic Host Configuration Protocol (DHCP)

The Dynamic Host Configuration Protocol (DHCP) client of the printer uses DHCP to obtain the IP address, Subnet mask, and Gateway address from the DHCP server.

Transport protocol	UDP/IP

Hypertext Transfer Protocol (HTTP)

Hypertext Transfer Protocol (HTTP) is used to configure the network setting through WEB Provision.

HTTP version	V1.1
Transport protocol	TCP/IP
Items 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

Transmission Control Protocol (TCP) socket communication

The Transmission Control Protocol (TCP) socket is used to send commands and data related to printing. It is also used to send and receive the batch status commands and its statuses.

When the Ethernet RTC Protocol setting is TCP, it is used through sending and receiving of real time commands. The communication procedure is as follows:

1. Client PC connects to the TCP socket through 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.

User Datagram Protocol (UDP) socket communication

The User Datagram Protocol (UDP) socket is used through sending and receiving of a real time command. The communication is effective in UDP port 3000 and when the Ethernet RTC Protocol setting is UDP. The communication procedure is as follows:

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

Multiple connection

It is possible to connect with multiple clients at the same time. However, if the transmission in the first connection is incomplete, the next connection cannot transmit data to the printer during its session.

The maximum possible number of connections is six. More than seven connections will be rejected.

Connectors

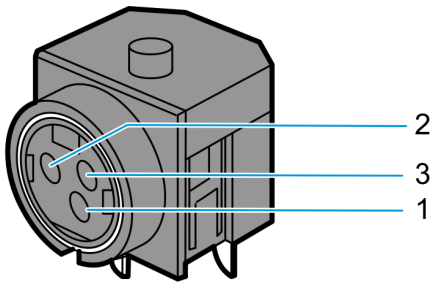
This section discusses the following NCR 7169 cable connectors:

- Power Cable Connector
- USB Cable Connector
- RS–232C Connector
- Ethernet Connector
- Cash Drawer Connector

Power cable connector

The control cards received 24VDC ±10% power through 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 two USB 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.

USB version

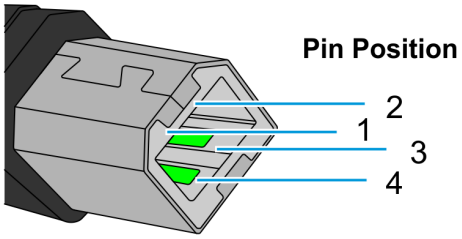
Version 2.0 High speed

Connector pin assignment

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

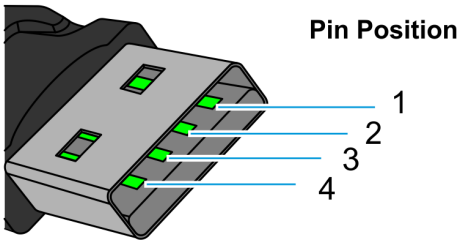
Type B connector

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



Type A connector

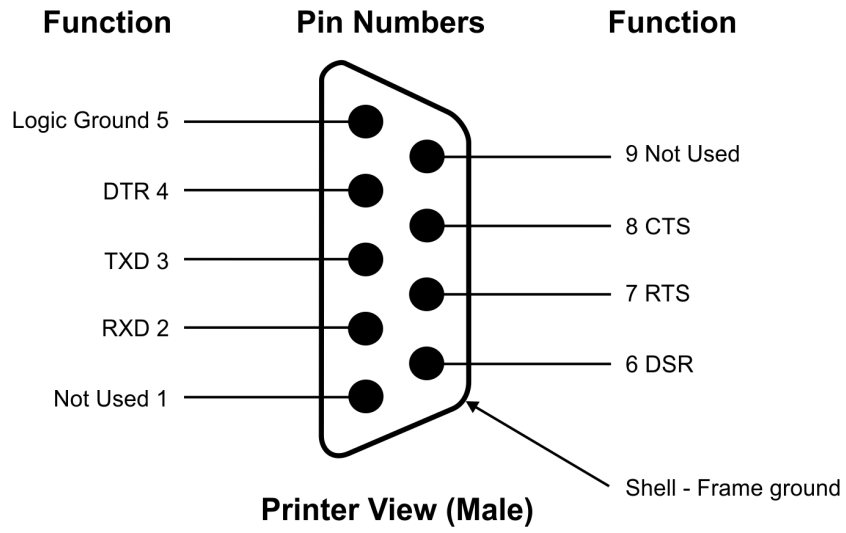
1	VBUS
2	D-
3	D+
4	GND
Shell	Shield



CCP-71041

RS–232C communication connector

The serial I/F connector is a 9-pin 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

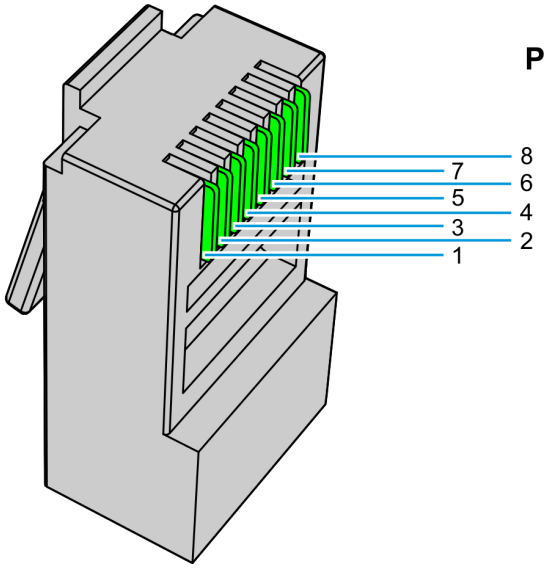
Fully integrated IEEE 802.3/802.3u–100 Base–TX/10 Base–T Physical Layer

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:

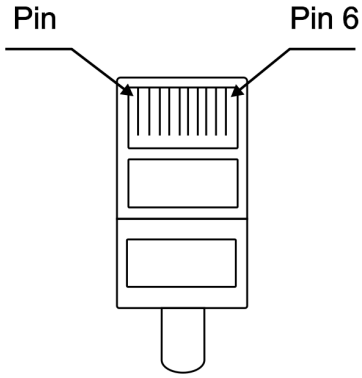


CCP-71038

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

Cash drawer connector

The Cash drawer connector is located at the rear of the printer.It is a 6-pin modular type connector with the following pin assignments:



Pin Number	Pin Function
1	Frame GND
2	Drawer 1 Solenoid
3	Drawer 1 Status Switch
4	+24 Volts (to Solenoid)
5	Drawer 2 Solenoid
6	GND

CCP-71037

Chapter 5: **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 7169 Multifunction Printer Programmer's Guide (BCC5-0000-5352)*.

Chapter 6: Reflashing the Printer Firmware

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, K8, 7649-F301, 7199, and 7169 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/SBCS
- Two Byte Receipt Font/DBCS
- Two Byte Slip Font
- Table
- Printer Configuration Table

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 of `.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

Font Type	Print Station	File Name
ANK	Receipt	`7169_SBCS_V2101.sfn`*
Arabic Font	Receipt	
Japanese CP932	Receipt	`7169_DBCS_V2201.sfn`*
Korean CP949	Receipt	
Simple Chinese CP936	Receipt	
Traditional Chinese CP950	Receipt	

The following items need to be noted:

- The noted font files are included on LPIN A370-0050-0000 or are available from the NCR web site 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 10th Jan 2017. Based on the new modification, the filenames may change.
- `7169_SBCS_V2101.sfn` is inclusive of ANK and Arabic Font.
- `7169_DBCS_V2201.dfn` is 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 4.2 ***
Thank you for using TseFlash Flash Memory Writer command line interface
utility!

TseFlash [model] [download type] [COM] [parameter] [file] [print(opt)]
[status(opt)] [ErrorTimeOut(opt)]

[model]--> Selections for the model:
[7169] [7169-X115] [7169-X035] [7169-5XX1/6XX1/7XX1] [7169-
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] [7342-F306] [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], 7169-6321- 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 7169, 7169-X115, 7169-X035, 7169-5XX1/6XX1/7XX1, 7169-8011-9001,
   7168, 7168-5XX3/6XX3, 7197, 7198, K590, 7401-K592, 7402-K592,7342-
   F306, 7346-F306
   /s - Download ASIAN font for 7197, K590, 7401-K592, 7402-K592, 7342-
   F306, 7346-F306
   /rs - Download Receipt ASIAN Font for 7169 & Receipt 2 Byte for 7168,
   7168-5XX3/6XX3, 7198, 7169-5xx1/6xx1/7xx1, 7169-8011-9001
   /ss - Download Slip ASIAN font for 7169 & Slip 2 Byte for 7168, 7168-
   5XX3/6XX3, 7169-5xx1/6xx1/7xx1, 7169-8011-9001
   /sb - Download SBCS font for 734X-F307/7125, 734X-F309, 7649- F301,
   7197-5XX1/6XX1/7XX1/9XX1, K8, SSCO6-1ST/2ST, 7199
   /db - Download DBCS font for 734X-F307/7125, 734X-F309, 7649- F301,
   7197-5XX1/6XX1/7XX1/9XX1, SSCO6-1ST/2ST, 7199
   /t - Download Table file for SSCO6-1ST/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.
   /WIFI Wireless 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):
   /ErrorTimeOut=xxx (minimum=420) xxx is number of Seconds - limit
   3600.
   Information : Please use RS232 Interface, when switching from ION <=>
   NON ION
```

The following error message is displayed when correct parameters are not used:

```
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 command displays the GUI interface and a progress bar indicator shown in the next section. The same GUI interface is displayed when the program is ran 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.ipl`—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 when updates are provided.

To reflash 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, run `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.

Chapter 7: 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 entering 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)/main.html`

Display Format of Configuration Setting Page

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

Top page

The Top page displays the Ethernet Configuration screen

To display the Ethernet Configuration setting page with the current configuration, select **Show Configuration**.

Ethernet Configuration setting page

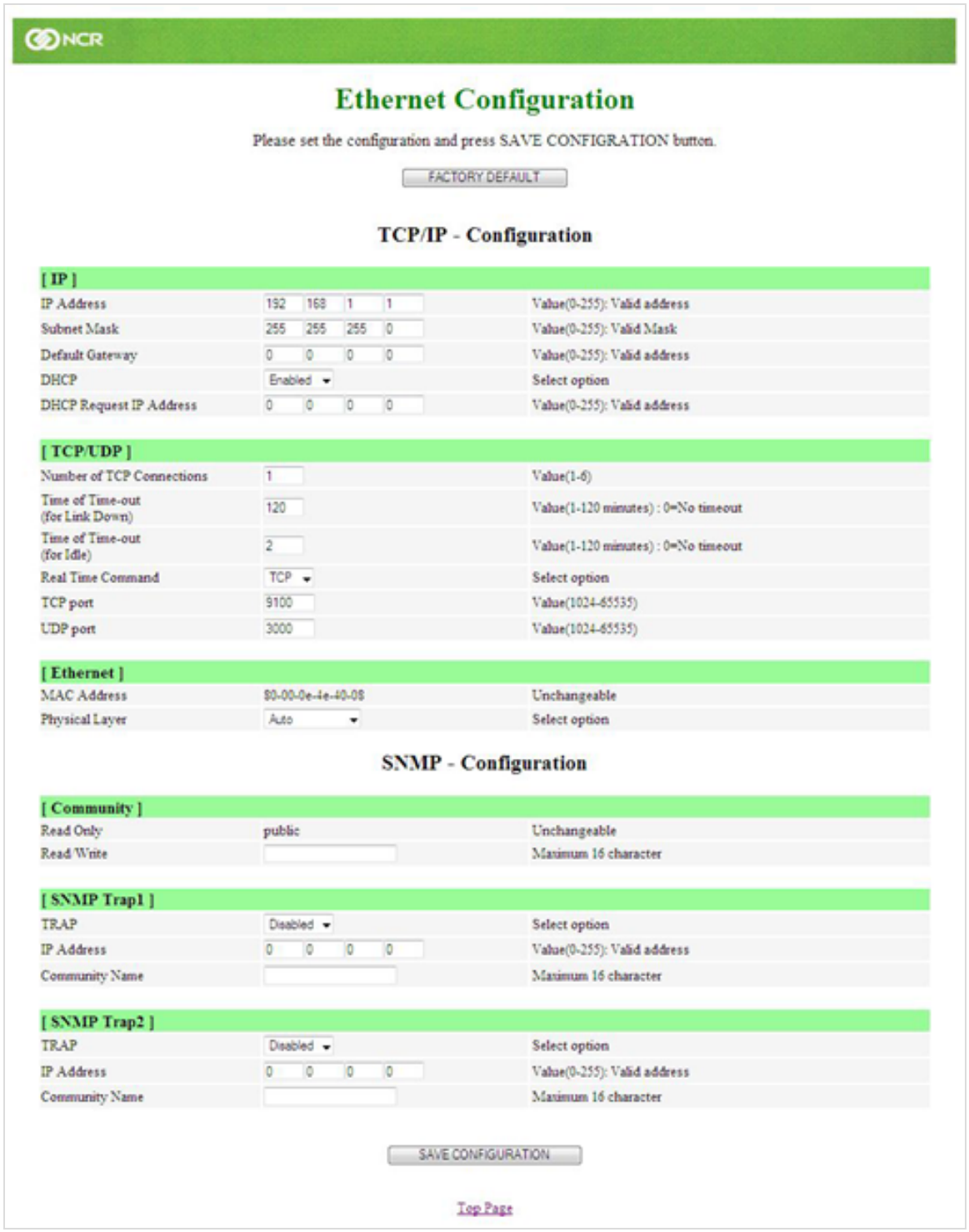
Users can modify the ethernet configuration on the Ethernet Configuration setting page.

To change the ethernet configuration, follow these steps:

1. To change the configuration values, do one of the following:
   - Enter a value in the corresponding field.
   - Select an option from the drop-down list.
2. Select **SAVE CONFIGURATION** to save the new ethernet configuration in the printer ROM.

   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**.

Note: To set the values to factory default, select **FACTORY DEFAULT**, and then select **SAVE CONFIGURATION**.



NCR

Ethernet Configuration

Please set the configuration and press SAVE CONFIGRATION button.

FACTORY DEFAULT

TCP/IP - Configuration

[IP]		
IP Address	192 168 1 1	Value(0-255): Valid address
Subnet Mask	255 255 255 0	Value(0-255): Valid Mask
Default Gateway	0 0 0 0	Value(0-255): Valid address
DHCP	Enabled	Select option
DHCP Request IP Address	0 0 0 0	Value(0-255): Valid address

[TCP/UDP]		
Number of TCP Connections	1	Value(1-6)
Time of Time-out (for Link Down)	120	Value(1-120 minutes) : 0=No timeout
Time of Time-out (for Idle)	2	Value(1-120 minutes) : 0=No timeout
Real Time Command	TCP	Select option
TCP port	9100	Value(1024-65535)
UDP port	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		Maximum 16 character

[SNMP Trap1]		
TRAP	Disabled	Select option
IP Address	0 0 0 0	Value(0-255): Valid address
Community Name		Maximum 16 character

[SNMP Trap2]		
TRAP	Disabled	Select option
IP Address	0 0 0 0	Value(0-255): Valid address
Community Name		Maximum 16 character

SAVE CONFIGURATION

Top Page

Save Configuration message page

When all input values are correct and saved, an information message is displayed.

To reset printer settings and apply a new ethernet configuration, select **RESET PRINTER**

Error Message page

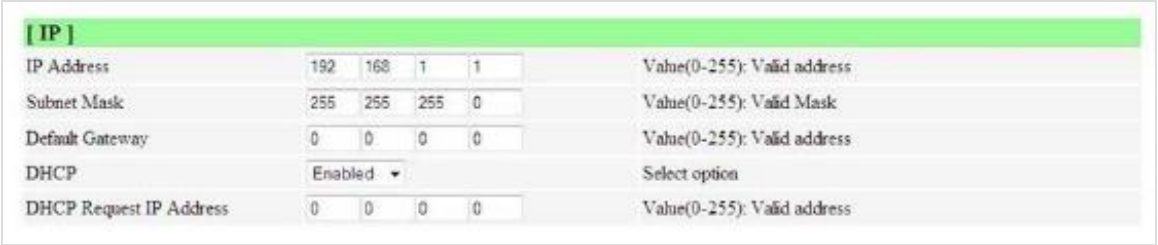
When the Ethernet configuration values are invalid, the values entered are not saved. An error message and its details is displayed.

To check and retry changing values, select **Top Page**.

TCP/IP Setting

This section discusses configuration parameters and default values for the TCP/IP setting.

IP setting



Items	Default value	Detail
IP Address	`192.168.1.1`	Sets the printer IP Address. **Note:** To manually enter the IP address, disable DHCP.
Subnet Mask	`255.255.255.0`	Sets the printer Subnet Mask. **Note:** To manually enter the Subnet Mask address, disable DHCP.
Default Gateway	`0.0.0.0`	Sets the Printer Default Gateway. **Note:** To manually enter the Default Gateway address, disable DHCP.
DHCP	Enabled	Specifies how the IP address is assigned. • Enabled—IP address is automatically assigned from the server. • Disabled—IP address is manually entered in the fields.
DHCP Request IP Address	`0.0.0.0`	Sets requesting specific IP address to DHCP server. **Note:** If the DHCP Request IP Address is set to 0.0.0.0, printer IP address is automatically assigned.

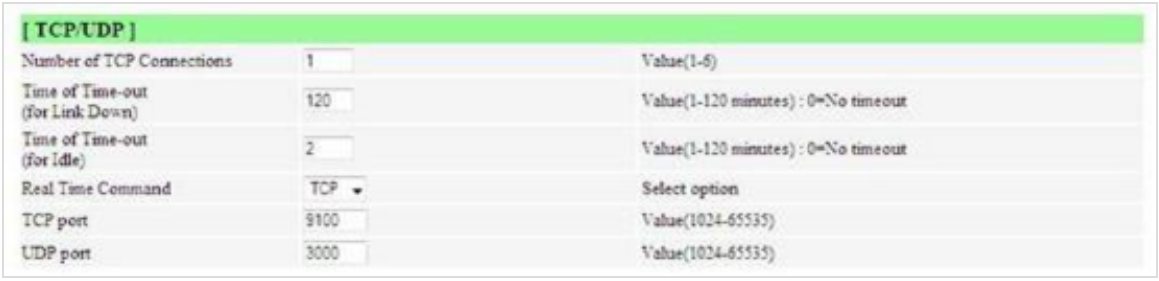
Note: IP addresses that cannot be set with Ethernet model printer are the following:

- `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

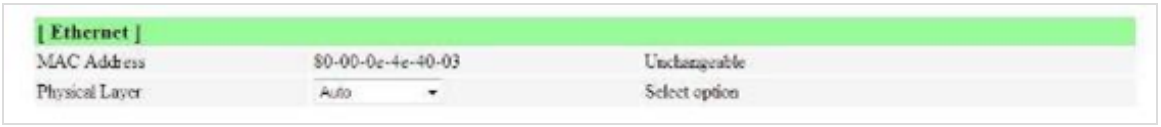
When DHCP is enabled, the printer automatically gets the IP address, the Subnet Mask, and the Default Gateway from a DHCP server. If the printer does not automatically get the IP address, it uses the same IP address as the Manual mode. The DHCP allocated IP address can be seen on the Diagnostics Form of the connected printer.

TCP/UDP setting



Items	Default Value	Detail
Number of TCP Connections	1	Specifies the maximum number of hosts that can be connected. The maximum number of hosts that can be connected is 6.
Time of Time-out (for Link Down)	120 min	Specifies the Link Down time-out. The maximum Link Down time-out is 120 minutes. When the value is set to zero, time–out is disabled.
Time of Time–out (for Idle)	2 min	Specifies the Idle time-out. The maximum Idle time-out is 120 minutes. When the value is set to zero, time-out disabled.
Real Time Command	TCP	Protocol options for Real Time command. The following options in the drop-down list are: • TCP • UDP
TCP port	9100	Specifies the TCP RAW port number. The TCP port number ranges from 1024 to 65535. When "Real Time Command" setting is TCP, it is used by sending and receiving of Real Time Command.
UDP port	3000	Specifies the UDP port number. The UDP port number ranges from 1024 to 65535. This is effective when "Real Time Command" setting is UDP.

Other ethernet setting



Items	Default value	Detail
MAC Address		Displays the MAC address of the printer Ethernet interface. The MAC address for each Ethernet interface is unique and unchangeable.
Physical Layer	Auto	Specifies the Speed and Duplex settings. The following options in the drop-down list are: • Auto • 10 Mbps Half • 10 Mbps Full • 100 Mbps Half • 100 Mbps Full

SNMP Setting

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

SNMP community setting

Items	Default value	Detail
Read Only	public	Displays the SNMP community read-only name. The community name has a maximum length of 16 characters.
Read/Write		Specifies the SNMP community read-write name. The community name has a maximum length of 16 characters.

SNMP IP Trap1 setting

Items	Default value	Detail
TRAP	Disable	Specifies the SNMP TRAP settings. • Enable • Disable
Address	0.0.0.0	Specifies the host address that receives SNMP TRAP.
Community Name		Specifies the SNMP TRAP community name. The community name has a maximum length of 16 characters.

SNMP IP Trap2 setting

Items	Default value	Detail
TRAP	Disable	Specifies the SNMP TRAP settings. Enable Disable
Address	0.0.0.0	Specifies the host address that receives SNMP TRAP.
Community Name		Specifies the SNMP TRAP community name. The community name has a maximum length of 16 characters.

Appendix A: Printer Specifications

Printing Specifications

	Thermal Receipt Station	Slip Station
Print head	• Fixed • 576 Print Elements • Direct Thermal • Fixed Head • Line of Dots	• Bi-directional • Logic Seeking • Serial Dot Matrix • Ribbon cassettes • Forms Insertion
Character Cell	• Standard: 13 x 24 Dots • Compressed: 10 x 24 Dots	• Standard: 10 x 7 Dots • Compressed: 10 x 7 Dots
Character Size	0.0525-inch wide by 0.092-inch high	0.057-inch wide by 0.097-inch high
Character Spacing	15.25 characters per inch (horizontal)	
Character Pitch	• 15.6 characters per inch (Standard) • 20.3 characters per inch (Compressed)	• 13.9 characters per inch (Standard) • 17.1 characters per inch (Compressed)

Columns (maximum)	• For 80-mm paper:
	  • 44 columns (Standard)
	  • 56 columns (Compressed)
	• For 58-mm paper:
	  • 32 columns (Standard)
	  • 42 columns (Compressed)
		• 45 columns (Standard)
		• 55 columns (Compressed)

	Thermal Receipt Station	Slip Station
Print Mode	• Standard • Compressed • Double High • Double Wide • Upside Down • Rotated • Underline • Scalable • Bold • Superscript • Italic • Subscript	• Standard • Compressed • Double Wide • Upside Down • Rotated
Resident Fonts	Code Page 437, 850, 852, 860, 863, 865, 858, 866, 1252, 1256, Katakana, 874, 862, 864, and Space page	Code Page 437, 850, 852, 858, 860, 862, 863, 864, 865, 866, 874, 1252, Katakana and 932 (Option: 936, 949, 950)
Speed	355.6 millimeters per second **Note:** Speed is dependent on the Line Spacing.	300 characters per second at 13.9 CPI **Note:** Speed is dependent on the number of columns (40-column width).
Print Order	Descending	Descending
Line Spacing	• 7.52 lines per inch (default) • 8.47, 8.13, 7.81, 7.25, 7.00, 5.98 lines per inch and variable lines per inch.	• 7.2 lines per inch (default) • 10.3, 9.0, 8.0, 6.5, 6.0, lines per inch and variable lines per inch.
Slew Speed	14 inches per second	5.7 lines per second at 17.1 characters per inch
Print Zone	2.83 inches maximum	3.23 inches maxmum
Noise	57 dBA Sound Pressure (ISO 7779)	62 dBA Sound Pressure (ISO 7779)
Graphics (Optional)	• User-defined Graphics • Logo	User-defined Graphics
Other	No Reverse Paper Feed	• Reverse Paper Feed • Two Form in Sensors

	Thermal Receipt Station	Slip Station
Paper Diameter	80 millimeters maximum	Not applicable
Paper Length	**83 meters** (273 feet)	• Without Check Flip Option: 2.67 inches (minimum) • With Check Flip Option: 3.15 inches (minimum), 8.74 inches (maximum)
Paper Width	• **80 millimeters + 0.5 millimeters / -1.2 millimeters** (3.15 inches + 0.02 inches/ -0.047 inches) • **58 millimeters + 0.5 millimeters / -1 millimeters** (2.28 inches + 0.02 inches/ -0.039 inches)	• Without Check Flip Option: 2.00 inches (minimum), 8.50 inches (maximum) **Note:** Forms with width of more than 170 mm will be extended to the left outer side of the printer. • With Check Flip Option: 2.75 inches (minimum), 3.74 inches (maximum)
Paper Thickness	Not applicable	**0.406 millimeters** (0.016 inches)
Printable Area	2.83 inches maximum	3.22 inches maximum

Power Requirements

The printer receives power from the following:

- host system (integrated)
- 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

Below are the available power modes of the printer:

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

Power from host

The host computer must provide a +24-volt supply to the printer. Voltage variation in the 24-volt line may be within 21.6 volts - 26.4 volts.

! Important: Surge protection must be provided. To provide surge protection, place a 3.2-ampere time delay fuse on the +24-volt line.

Power from external power supply

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

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

Physical and Operating Environment

Temperature and humidity

	Temperature	Humidity
Operating	**5°Celsius to 50°Celsius** (41°Farenheit to 122°Farenheit)	5% to 90%
Storage	**–10°Celsius to 55°Celsius** (14°Farenheit to 131°Farenheit)	10% to 90%
Transit	**–40°Celsius to 60°Celsius** (–40°Farenheit to 140°Farenheit)	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.	

Reliability

The numbers in the table refer to the Mean Cycle Between Failure (MCBF) for the items indicated.

Note: Reliability statistics are based on averages exhibited under lab conditions and do not constitute a warranty.

Component	Reliability
Thermal Receipt Printer	60 million lines
Impact Slip Printer	30 million lines
Impact Print head	200 million characters
Electronics	1,100,000 on-time hours
Communications Card	25,000,000 on-time hours
Knife	2 million cuts
MICR Check Reader	500,000 reads
Flip	500,000 flips
Power Supply	200,000 on-time hours
Flip Mechanism	500,000 cycles

Dimensions and weight

Height	**178 millimeters** (7.01 inches)
Width	**192 millimeters** (7.56 inches)
Depth	**304.5 millimeters** (11.99 inches)
Weight	• Flip model—**3.70 kilograms** (8.2 pounds), • Non-flip model—**3.50 kilograms** (7.7 pounds)

Appendix B: Reflashing 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 web site, *http://www5.ncr.com/support/support_drivers_patches.asp?Class=External\Peripherals\Printer\FlashUtility\display.*

Appendix C: Lean Receipt Utility

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 web site: *http://www5.ncr.com/support/support_drivers_patches.asp?Class=External\Peripherals\Printer\LeanReceiptUtility\display.*

Appendix D: Print Characteristics

Character Size

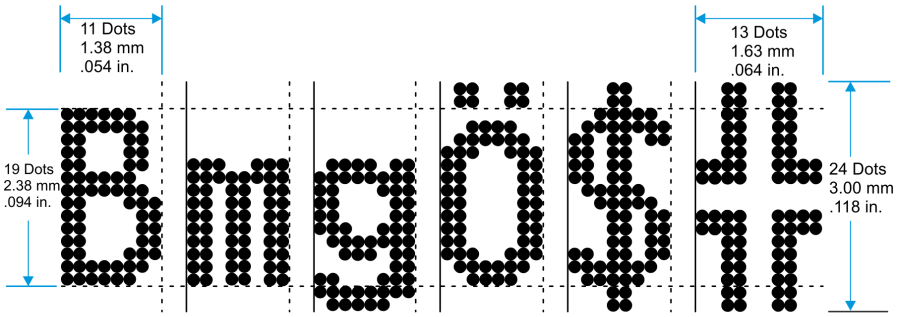
This section shows the dot pattern for characters printed on the receipt station.

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

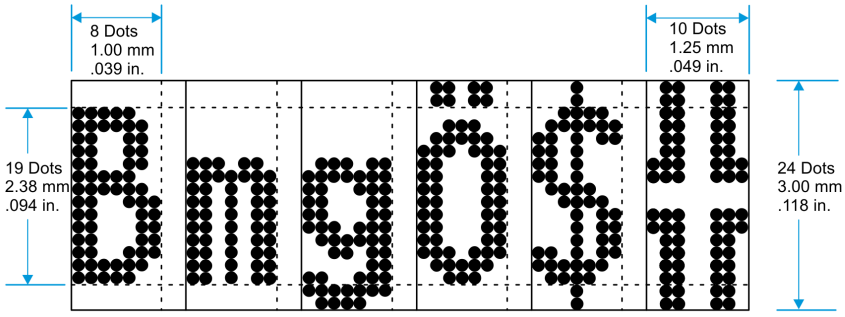


B - Upper Case
m - Lower Case
g - With Descender
Ö - With Ascender
$ - Both Ascender and Desender
# - Graphic Symbol

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.

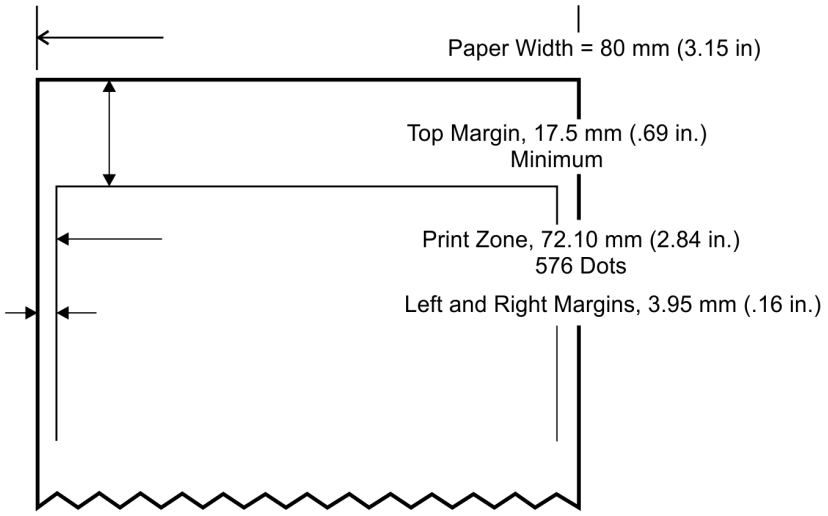
Receipt station

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).



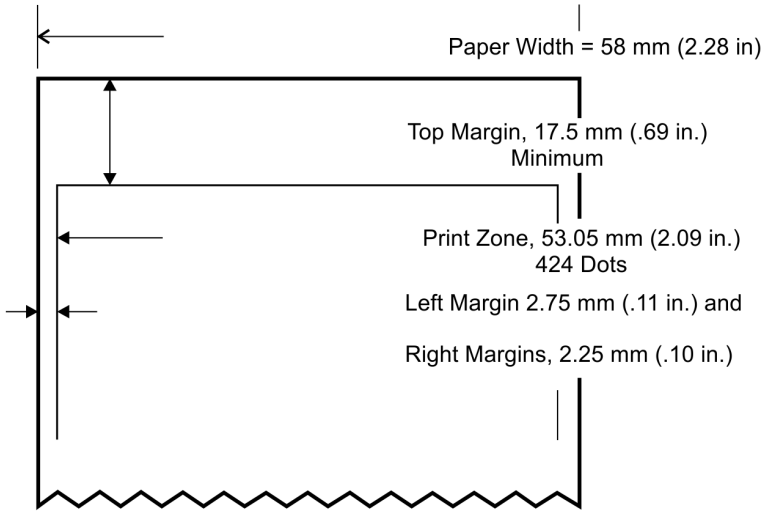
CCP-71054

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).



Appendix E: Thai Font Support

Outline

The NCR 7169 Multifunction Printer supports printing of Thai characters. Code Page 874 (Thai) supports Thai characters, but some of their characters define only a part of one character. Actual Thai character is made up of a combination of some characters, with a maximum of four characters in Code Page 874, for one Thai character. The NCR 7169 Multifunction Printer supports the function which combines Thai characters with Code Page 874's characters.

Validate Thai code page function

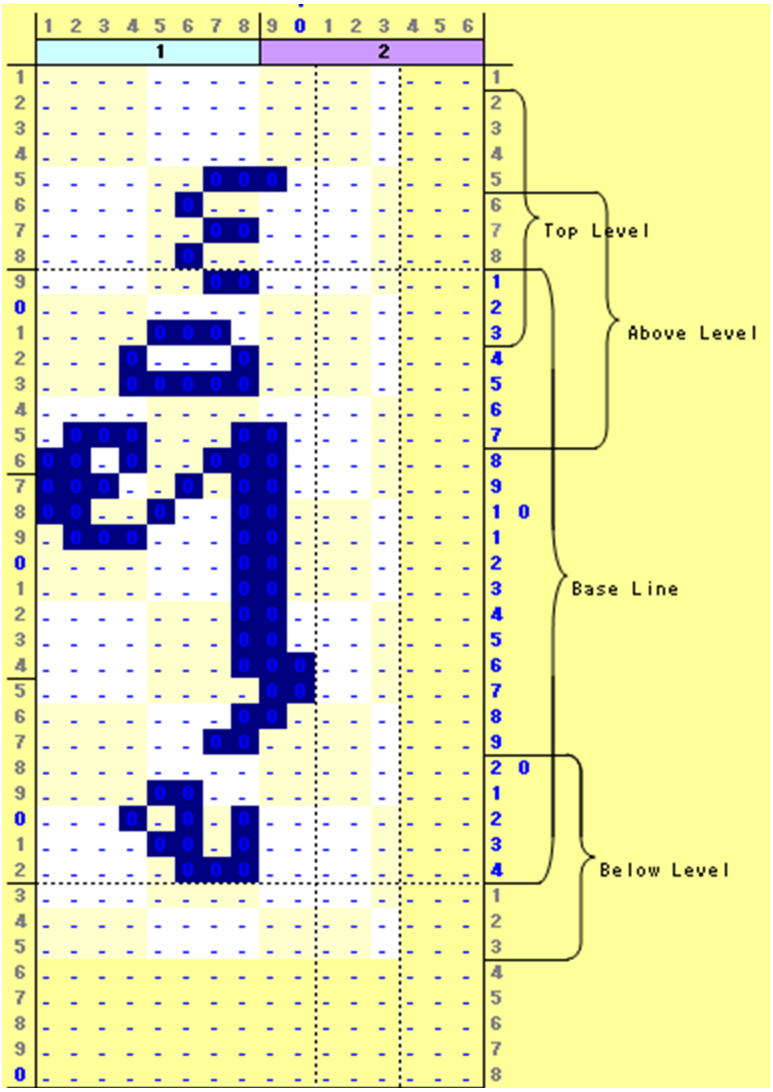
The Thai code page function is validated when the following conditions are selected:

- Online mode
- Asian Mode=OFF
- Code Page=874

Thai Character Configuration

Thai character consists of a maximum of four levels:

- **Top level**—only top or above level characters are allowed to be placed on the Top level, which is the highest layer.
- **Above level**—only topor above level characters are allowed to be placed on the Above level, which exists between the Top level and the Base line.
- **Base line**—only base line characters are allowed to be placed on the Base line, which exists between the Above level and the Below level.
- **Below level**—only below level characters are allowed to be placed on the Below level, which is the lowest layer.


Top Level
Above Level
Base Line
Below Level

Each character type is explained below.

CCP-71043

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 ฬ character is rarely used.
- Each 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 or Above level characters.
- Characters encircled in red and purple, and the ฬ 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.
- Top, Above and Below characters cannot be in the same character.

Thai Character Data Procedure

Thai character data string uses the following format:

```
Base character, <Below character >, <Above character>, <Top character>,
Base character, ...
```

The procedure is as follows:

1. The printer checks whether the received character is the Base character. If the Top, Above, and Below characters are sent before the Base character, these characters are ignored.
2. After receiving the Base character, the printer checks the next character until it receives the next Base character.
3. If the next character is the Below character, the Above character, or the Top character, the printer checks whether these Thai characters are valid for the current Base character. If they are valid, it merges these characters' image with the Base character's image. If it is an invalid character, it will be ignored.

Notes for this Function

This function supports standard pitch font and compressed pitch font. Thai character height is 34 dots. The following command functions change, and are different from other code pages.

SYN	Add *n* Extra Dot Rows.	When CP874 is selected, the line Pitch is 34 + *n* dot.
ESC 2	Set Line Spacing to 1/6 inch.	When CP874 is selected, this command is ignored.
ESC 3	Set Line Spacing.	When CP874 is selected, valid parameter value is >= 34.

The line pitch is changed by the following commands because the code page is changed.

ESC R	Select international character set.
ESC t	Select character code table. **Note:** Same as ESC R.
ESC %	Set or 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 combined, and each character is printed separately.

Appendix F: Arabic Font Support

Overview

The NCR 7169 Multifunction Printer supports the Arabic font (Code Page 1256). It prints each character one by one according to the code number specified. Each Arabic character changes its shape according to the context, which makes it difficult to interpret. The printer provides the functionality to automatically transform Arabic characters according to the context.

To enable this functionality, the printer has to be configured with the following settings:

- Code Page=1256
- Special Font=Mode 4 (Proportional Contextual 1256) or Mode 5 (Fixed Pitch Contextual 1256)

Based on these settings, the following transformation features are available for characters of code page 1256:

- Contextual forms
- Word ligatures
- Reverse the Arabic strings

These features can be used based on the proportional font and with the following conditions:

- Arabic Proportional font exists in the double-byte character set (DBCS) font area.
- Asian Mode is disabled.
- Code page 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 features will be unavailable, and Code page 1256 isolated characters are printed in fixed pitch.

Contextual forms

Arabic letters have contextual forms, depending on the surrounding letters in a 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 in connection to all the characters in that word. This feature is supported in contextual forms.

Word ligatures

Arabic Presentation Forms-A has few characters defined as *word ligatures* for terms frequently used in formulaic expressions in Arabic. For example, the common ampersand (**&**) represents the conjunctive word *and*. The ampersand symbol is a ligature.

Reverse the Arabic strings

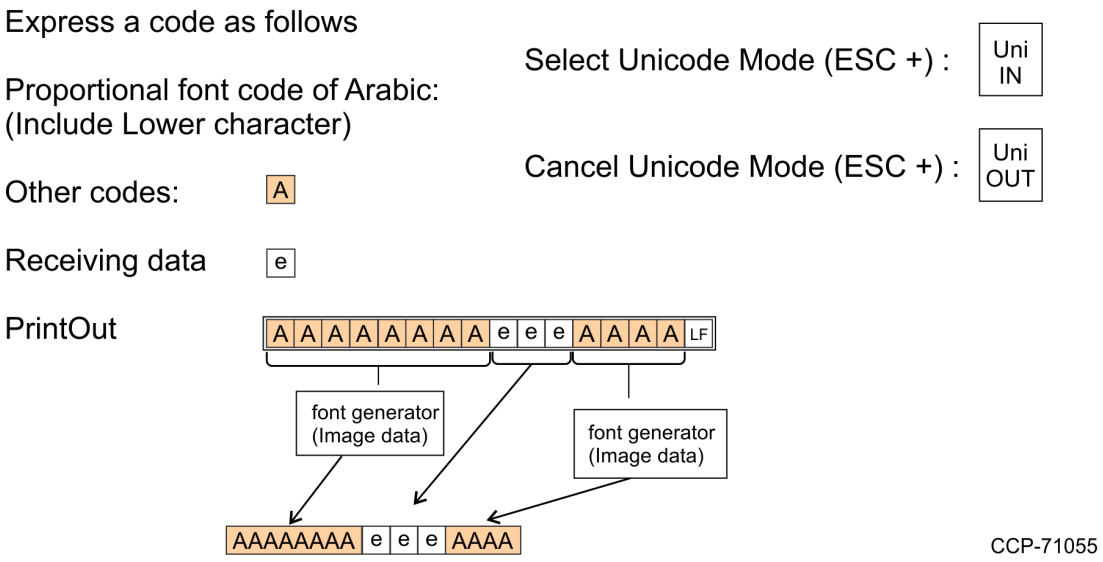
Arabic writing is from right to left, aligning with the right margin. The printer receives data that reverses the Arabic string and prints the data using the Arabic format, which is right to left.

Proportional font

The printer has the following resident proportional characters for Arabic functions (Unicode base). These characters cover the characters of Code page 1256.

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

Proportional font conversion handling of Arabic



Limitations

Because of 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 7169 Multifunction Printer Programmer's Guide (BCC5-0000-5352)*. Please see the command description of Print Characteristic Commands in detail.

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 counterclockwise 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	
ESC E	Select or Cancel emphasized mode	
ESC G	Select double strike	

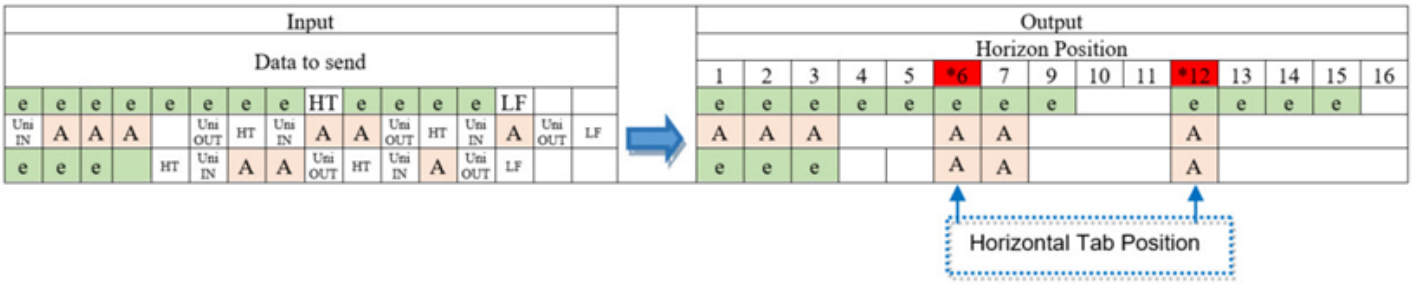
Command	Command name	Remarks
ESC H	Cancel double strike	
ESC I	Select or Cancel italic print	
ESC V	Select or Cancel 90 degrees clockwise rotated print	
ESC {	Select or Cancel upside down printing mode	
US ENQ	Select Superscript or subscript modes	

The following table contains a list of commands that are ignored if the command is sent in the middle of a line that includes an Arabic character.

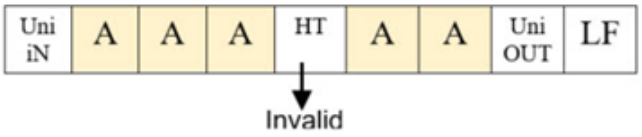
Command	Command name	Remarks
DC2	Select double-wide characters	
ESC -	Select or Cancel underline mode	
ESC r	Select print color	
GS !	Select character size	
GS B	Select or Cancel white/black reverse printing mode	
ESC !	Select print modes	Bit4, Bit5 Invalid

Horizontal positioning commands

Example: HT Horizontal Tab (6,12,18)



Invalid case for horizontal tab

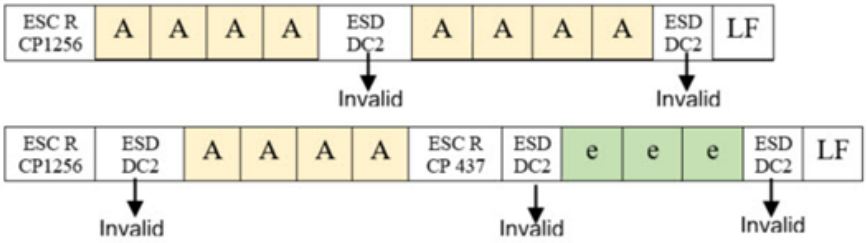


Invalid command (sample)

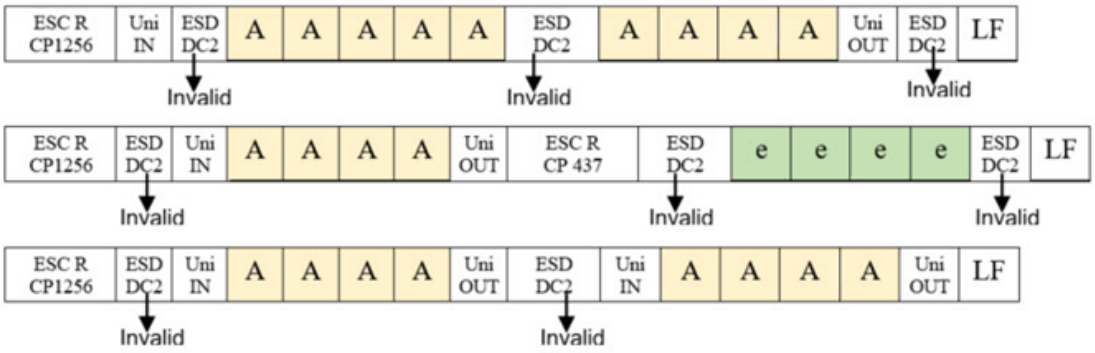
The example below shows the condition for an invalid command.

Example: `ESC DC2`—Select 90 degree counterclockwise rotated print

Code Page1256:



Unicode:



Express a code as follows:

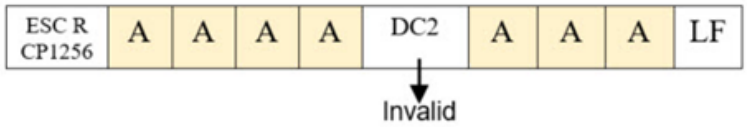
Proportional font code of Arabic (include Lower character)	A
Font code for other Code Page	e

Invalid command in middle of the line (example)

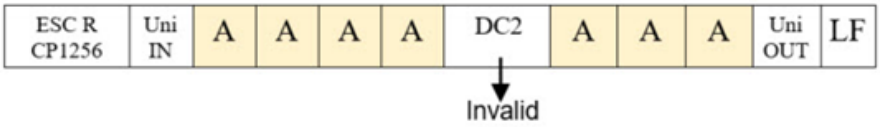
The following example shows the condition for an invalid command in the middle of the line.

Example: `DC2`—Select double-wide characters

Code page 1256:

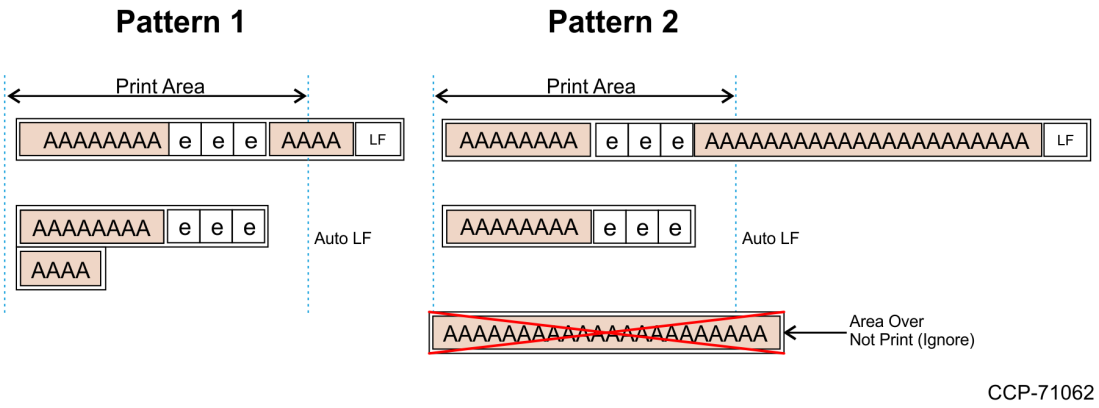


Unicode:



Printing layout (Over the area)

If the Arabic character line exceeds printable area, it will be printed as follows:



Appendix G: Character Sets

Overview

The following character sets are available in NCR 7169 printer:

- PC Code Page 437 (US English)
- PC Code Page 850 (Multilingual)
- PC Code Page 852 (Slavic)
- PC Code Page 860 (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 1252 (Windows Latin #1)
- PC Code Page 1256 (Arabic)-Contextual
- PC Code Page 1256 (Arabic)-Fixed
- PC Code Page Katakana
- Hungary
- PC Code Page 874 (Enhanced Thai)
- Code Page 737 (Greek)
- Code Page 855
- Code Page 928 (Greek)
- Code Page 932
- Code Page 936
- Code Page 949
- Code Page 950
- Code Page 1250

- Code Page 1251
- Romania

Code pages 437, 850, 852, and 858

Code Page 437.

Code Page 850.

Code Page 852.

Code Page 858.

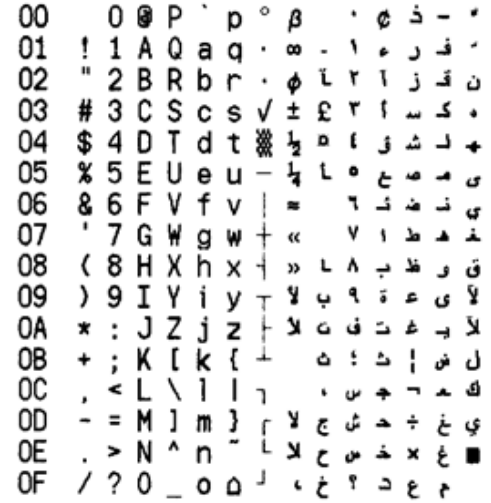
Code pages 860, 862, 863, and 864

Code Page 860.

Code Page 862

Code Page 863.

Code Page 864



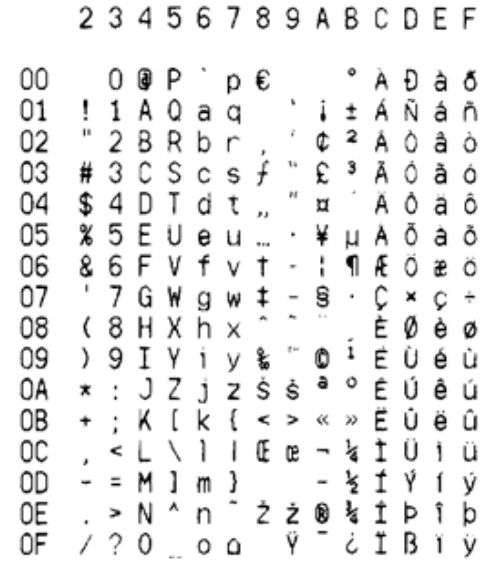
Code pages 865, 866, 874, and 1252

Code Page 865.

Code Page 866.

Code Page 874.

Code Page 1252.



Code page 1256 and Katakana

Code Page 1256

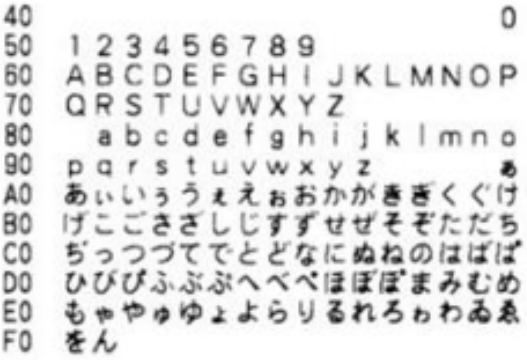
Code Page KATAKANA.

Code page 932 (1 of 9)

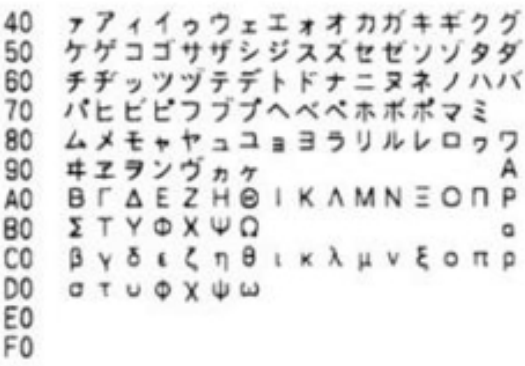
Code page 932

Code page 932-81

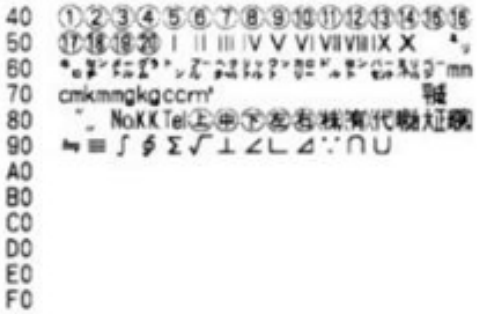
Code page 932-82



Code page 932-83



Code page 932-87



Code page 932 (2 of 9)

Code page 932-84

40	А Б В Г Д Е Ё Ж З И Й К Л М Н О
50	П Р С Т У Ф Х Ц Ч Ш Щ Ъ Ы Ь Э Ю
60	Я
70	а б в г д е ё ж з и й к л м н
80	о п р с т у ф х ц ч ш щ ъ ы ь э
90	ю я —
A0	｜ ┌ ┐ ┘ └ ├ ┬ ┤ ┴ ┼ ━ ｜ ┌ ┐ ┘ └
B0	├ ┬ ┤ ┴ ┼ ├ ┬ ┤ ┴ ┼ ├ ┬ ┤ ┴ ┼
C0	
D0	
E0	
F0	

Code page 932-87

40	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯
50	⑰ ⑱ ⑲ ⑳ Ⅰ Ⅱ Ⅲ Ⅳ Ⅴ Ⅵ Ⅶ Ⅷ Ⅸ Ⅹ ㍉ ㌔ ㌢ ㍍
60	㌘ ㌧ ㌃ ㌶ ㍑ ㍗ ㌍ ㌦ ㌣ ㌫ ㍊ ㌻ ㎜
70	㎝ ㎞ ㎎ ㎏ ㏄ ㎡ 〝 〟 № ㏍ ℡ ㊤ ㊥ ㊦ ㊧ ㊨ ㈱ ㈲ ㈹ ㍾ ㍽ ㍼
80	≒ ≡ ∫ ∮ Σ √ ⊥ ∠ ∟ ⊿ ∵ ∩ ∪
90	
A0	
B0	
C0	
D0	
E0	
F0	

Code page 932-88

40	
50	
60	
70	
80	
90	亜
A0	唖娃阿哀愛挨姶逢葵茜穐悪握渥旭葦
B0	芦鯵梓圧斡扱宛姐虻飴絢綾鮎或粟袷
C0	安庵按暗案闇鞍杏以伊位依偉囲夷委
D0	威尉惟意慰易椅為畏異移維緯胃萎衣
E0	謂違遺医井亥域育郁磯一壱溢逸稲茨
F0	芋鰯允印咽員因姻引飲淫胤蔭

Code page 932-89

40	院陰隠韻吋右宇烏羽迂雨卯鵜窺丑碓
50	臼渦嘘唄欝蔚鰻姥厩浦瓜閏噂云運雲
60	荏餌叡営嬰影映曳栄永泳洩瑛盈穎頴
70	英衛詠鋭液疫益駅悦謁越閲榎厭円
80	園堰奄宴延怨掩援沿演炎焔煙燕猿縁
90	艶苑薗遠鉛鴛塩於汚甥凹央奥往応押
A0	旺横欧殴王翁襖鴬鴎黄岡沖荻億屋憶
B0	臆桶牡乙俺卸恩温穏音下化仮何伽価
C0	佳加可嘉夏嫁家寡科暇果架歌河火珂
D0	禍禾稼箇花苛茄荷華菓蝦課嘩貨迦過
E0	霞蚊俄峨我牙画臥芽蛾賀雅餓駕介会
F0	解回塊壊廻快怪悔恢懐戒拐改

Code page 932 (3 of 9)

Code page 932-8A

40	魁	晦	械	海	灰	界	皆	絵	芥	蟹	開	階	貝	凱	劾	外
50	咳	害	崖	慨	概	涯	碍	蓋	街	該	鎧	骸	浬	馨	蛙	垣
60	柿	蛎	鈎	劃	嚇	各	廓	拡	撹	格	核	殻	獲	確	穫	覚
70	角	赫	較	郭	閣	隔	革	学	岳	楽	額	顎	掛	笠	樫	
80	橿	梶	鰍	潟	割	喝	恰	括	活	渇	滑	葛	褐	轄	且	鰹
90	叶	椛	樺	鞄	株	兜	竃	蒲	釜	鎌	噛	鴨	栢	茅	萱	粥
A0	刈	苅	瓦	乾	侃	冠	寒	刊	勘	勧	巻	喚	堪	姦	完	官
B0	寛	干	幹	患	感	慣	憾	換	敢	柑	桓	棺	款	歓	汗	漢
C0	澗	潅	環	甘	監	看	竿	管	簡	緩	缶	翰	肝	艦	莞	観
D0	諌	貫	還	鑑	間	閑	関	陥	韓	館	舘	丸	含	岸	巌	玩
E0	癌	眼	岩	翫	贋	雁	頑	顔	願	企	伎	危	喜	器	基	奇
F0	嬉	寄	岐	希	幾	忌	揮	机	旗	既	期	棋	棄			

Code page 932-8B

40	機	帰	毅	気	汽	畿	祈	季	稀	紀	徽	規	記	貴	起	軌
50	輝	飢	騎	鬼	亀	偽	儀	妓	宜	戯	技	擬	欺	犠	疑	祇
60	義	蟻	誼	議	掬	菊	鞠	吉	吃	喫	桔	橘	詰	砧	杵	黍
70	却	客	脚	虐	逆	丘	久	仇	休	及	吸	宮	弓	急	救	
80	朽	求	汲	泣	灸	球	究	窮	笈	級	糾	給	旧	牛	去	居
90	巨	拒	拠	挙	渠	虚	許	距	鋸	漁	禦	魚	亨	享	京	供
A0	侠	僑	兇	競	共	凶	協	匡	卿	叫	喬	境	峡	強	彊	怯
B0	恐	恭	挟	教	橋	況	狂	狭	矯	胸	脅	興	蕎	郷	鏡	響
C0	饗	驚	仰	凝	尭	暁	業	局	曲	極	玉	桐	粁	僅	勤	均
D0	巾	錦	斤	欣	欽	琴	禁	禽	筋	緊	芹	菌	衿	襟	謹	近
E0	金	吟	銀	九	倶	句	区	狗	玖	矩	苦	躯	駆	駈	駒	具
F0	愚	虞	喰	空	偶	寓	遇	隅	串	櫛	釧	屑	屈			

Code page 932-8C

40	掘	窟	沓	靴	轡	窪	熊	隈	粂	栗	繰	桑	鍬	勲	君	薫
50	訓	群	軍	郡	卦	袈	祁	係	傾	刑	兄	啓	圭	珪	型	契
60	形	径	恵	慶	慧	憩	掲	携	敬	景	桂	渓	畦	稽	系	経
70	継	繋	罫	茎	荊	蛍	計	詣	警	軽	頚	鶏	芸	迎	鯨	
80	劇	戟	撃	激	隙	桁	傑	欠	決	潔	穴	結	血	訣	月	件
90	倹	倦	健	兼	券	剣	喧	圏	堅	嫌	建	憲	懸	拳	捲	検
A0	権	牽	犬	献	研	硯	絹	県	肩	見	謙	賢	軒	遣	鍵	険
B0	顕	験	鹸	元	原	厳	幻	弦	減	源	玄	現	絃	舷	言	諺
C0	限	乎	個	古	呼	固	姑	孤	己	庫	弧	戸	故	枯	湖	狐
D0	糊	袴	股	胡	孤	虎	誇	跨	鈷	雇	顧	鼓	五	互	伍	午
E0	呉	吾	娯	後	御	悟	梧	檎	瑚	碁	語	誤	護	醐	乞	鯉
F0	交	佼	侯	候	倖	光	公	功	効	勾	厚	口	向			

Code page 932-8D

40	后	喉	坑	垢	好	孔	孝	宏	工	巧	巷	幸	広	庚	康	弘
50	恒	慌	抗	拘	控	攻	昂	晃	更	杭	校	梗	構	江	洪	浩
60	港	溝	甲	皇	硬	稿	糠	紅	紘	絞	綱	耕	考	肯	肱	腔
70	膏	航	荒	行	衡	講	貢	購	郊	酵	鉱	砿	鋼	閤	降	
80	項	香	高	鴻	剛	劫	号	合	壕	拷	濠	豪	轟	麹	克	刻
90	告	国	穀	酷	鵠	黒	獄	漉	腰	甑	忽	惚	骨	狛	込	此
A0	頃	今	困	坤	墾	婚	恨	懇	昏	昆	根	梱	混	痕	紺	艮
B0	魂	些	佐	叉	唆	嵯	左	差	査	沙	瑳	砂	詐	鎖	裟	坐
C0	座	挫	債	催	再	最	哉	塞	妻	宰	彩	才	採	栽	歳	済
D0	災	采	犀	砕	砦	祭	斎	細	菜	裁	載	際	剤	在	材	罪
E0	財	冴	坂	阪	堺	榊	肴	咲	崎	埼	碕	鷺	作	削	咋	搾
F0	昨	朔	柵	窄	策	索	錯	桜	鮭	笹	匙	冊	刷			

Code page 932-8E

40	察	拶	撮	擦	札	殺	薩	雑	皐	鯖	捌	錆	鮫	皿	晒	三
50	傘	参	山	惨	撒	散	桟	燦	珊	産	算	纂	蚕	讃	賛	酸
60	餐	斬	暫	残	仕	仔	伺	使	刺	司	史	嗣	四	士	始	姉
70	姿	子	屍	市	師	志	思	指	支	孜	斯	施	旨	枝	止	
80	死	氏	獅	祉	私	糸	紙	紫	肢	脂	至	視	詞	詩	試	誌
90	諮	資	賜	雌	飼	歯	事	似	侍	児	字	寺	慈	持	時	次
A0	滋	治	爾	璽	痔	磁	示	而	耳	自	蒔	辞	汐	鹿	式	識
B0	鴫	竺	軸	宍	雫	七	叱	執	失	嫉	室	悉	湿	漆	疾	質
C0	実	蔀	篠	偲	柴	芝	屡	蕊	縞	舎	写	射	捨	赦	斜	煮
D0	社	紗	者	謝	車	遮	蛇	邪	借	勺	尺	杓	灼	爵	酌	釈
E0	錫	若	寂	弱	惹	主	取	守	手	朱	殊	狩	珠	種	腫	趣
F0	酒	首	儒	受	呪	寿	授	樹	綬	需	囚	収	周			

Code page 932-8F

40	宗	就	州	修	愁	拾	洲	秀	秋	終	繍	習	臭	舟	蒐	衆
50	襲	讐	蹴	輯	週	酋	酬	集	醜	什	住	充	十	従	戎	柔
60	汁	渋	獣	縦	重	銃	叔	夙	宿	淑	祝	縮	粛	塾	熟	出
70	術	述	俊	峻	春	瞬	竣	舜	駿	准	循	旬	楯	殉	淳	
80	準	潤	盾	純	巡	遵	醇	順	処	初	所	暑	曙	渚	庶	緒
90	署	書	薯	藷	諸	助	叙	女	序	徐	恕	鋤	除	傷	償	勝
A0	匠	升	召	哨	商	唱	嘗	奨	妾	娼	宵	将	小	少	尚	庄
B0	床	廠	彰	承	抄	招	掌	捷	昇	昌	昭	晶	松	梢	樟	樵
C0	沼	消	渉	湘	焼	焦	照	症	省	硝	礁	祥	称	章	笑	粧
D0	紹	肖	蕉	蒋	蕪	衝	裳	訟	証	詔	詳	象	賞	醤	鉦	鍾
E0	鐘	障	鞘	上	丈	丞	乗	冗	剰	城	場	壌	嬢	常	情	擾
F0	条	杖	浄	状	畳	穣	蒸	譲	醸	錠	嘱	埴	飾			

Code page 932 (4 of 9)

Code page 932-90

40	拭植殖燭織職色触食蝕辱尻伸信侵唇
50	娠寝審心慎振新晋森榛浸深申疹真神
60	秦紳臣芯薪親診身辛進針震人仁刃塵
70	壬尋甚尽腎訊迅陣靭笥諏須酢図厨
80	逗吹垂帥推水炊睡粋翠衰遂酔錐錘随
90	瑞髄崇嵩数枢趨雛据杉椙菅頗雀裾澄
A0	摺寸世瀬畝是凄制勢姓征性成政整星
B0	晴棲栖正清牲生盛精聖声製西誠誓請
C0	逝醒青静斉税脆隻席惜戚斥昔析石積
D0	籍績脊責赤跡蹟碩切拙接摂折設窃節
E0	説雪絶舌蝉仙先千占宣専尖川戦栓撰
F0	栓栴泉洗染潜煎煽旋穿箭線

Code page 932-91

40	繊羨腺舛船薦詮賎践選遷銭銑閃鮮前
50	善漸然全禅繕膳糎噌塑岨措曾曽楚狙
60	疏踈礎祖租粗素組蘇訴阻遡鼠僧創双
70	叢倉喪壮奏爽宋層匝惣想捜掃挿掻
80	操早曹巣槍槽漕燥争痩相窓糟総綜聡
90	草荘葬蒼藻装走送遭鎗霜騒像増憎臓
A0	蔵贈造促側則即息捉束測足速俗属賊
B0	族統卒袖其揃存孫尊損村遜他多太汰
C0	詑唾堕妥惰打柁舵楕陀駄騨体堆対耐
D0	岱帯待怠態戴替泰滞胎腿苔袋貸退逮
E0	隊黛鯛代台大第醍醐鷹滝瀧卓啄宅托
F0	択拓沢濯琢託鐸濁諾茸凧蛸只

Code page 932-92

40	叩但達辰奪脱巽竪辿棚谷狸鱈樽誰丹
50	単嘆坦担探旦歎淡湛炭短端箪綻耽胆
60	蛋誕鍛団壇弾断暖檀段男談値知地弛
70	恥智池痴稚置致蜘遅馳築畜竹筑蓄
80	逐秩窒茶嫡着中仲宙忠抽昼柱注虫衷
90	註酎鋳駐樗瀦猪苧著貯丁兆凋喋寵帖
A0	帳庁弔張彫徴懲挑暢朝潮牒町眺聴脹
B0	腸蝶調諜超跳銚長頂鳥勅捗直朕沈珍
C0	賃鎮陳津墜椎槌追鎚痛通塚栂掴槻佃
D0	漬柘辻蔦綴鍔椿潰坪壺嬬紬爪吊釣鶴
E0	亭低停偵剃貞呈堤定帝底庭廷弟悌抵
F0	挺提梯汀碇禎程締艇訂諦蹄逓

Code page 932-93

40	邸鄭釘鼎泥摘擢敵滴的笛適鏑溺哲徹
50	撤轍迭鉄典填天展店添纏甜貼転顛点
60	伝殿澱田電兎吐堵塗妬屠徒斗杜渡登
70	菟賭途都鍍砥砺努度土奴怒倒党冬
80	凍刀唐塔塘套宕島嶋悼投搭東桃棟棟
90	盗淘湯涛灯燈当痘祷等答筒糖統到董
A0	蕩藤討謄豆踏逃透鐙陶頭騰闘働動同
B0	堂導憧撞洞瞳童胴萄道銅峠鴇匿得徳
C0	涜特督禿篤毒独読栃橡凸突椴届鳶苫
D0	寅酉瀞噸屯惇敦沌豚遁頓呑曇鈍奈那
E0	内乍凪薙謎灘捺鍋楢馴縄畷南楠軟難
F0	汝二尼弐迩匂賑肉虹廿日乳入

Code page 932-94

40	如尿韮任妊忍認濡禰祢寧葱猫熱年念
50	捻撚燃粘乃廼之埜嚢悩濃納能脳膿農
60	覗蚤巴把播覇杷波派琶破婆罵芭馬俳
70	廃拝排敗杯盃牌背肺輩配倍培媒梅
80	楳煤狽買売賠陪這蝿秤矧萩伯剥博拍
90	柏泊白箔粕舶薄迫曝漠爆縛莫駁麦函
A0	箱硲箸肇筈櫨幡肌畑畠八鉢溌発醗髪
B0	伐罰抜筏閥鳩噺塙蛤隼伴判半反叛帆
C0	搬斑板氾汎版犯班畔繁般藩販範釆煩
D0	頒飯挽晩番盤磐蕃蛮匪卑否妃庇彼悲
E0	扉批披斐比泌疲皮碑秘緋罷肥被誹費
F0	避非飛樋簸備尾微枇毘琵眉美

Code page 932-95

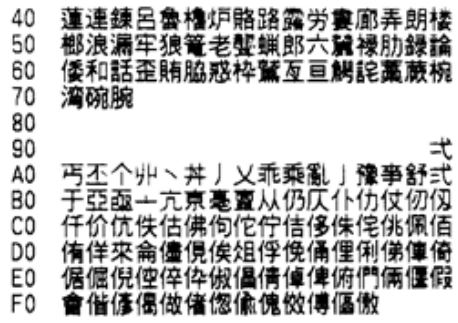
40	鼻柊稗匹疋髭彦膝菱肘弼必畢箆逼桧
50	姫媛紐百謬俵彪標氷漂瓢票表評豹廟
60	描病秒苗錨鋲蒜蛭鰭品彬斌浜瀕貧賓
70	頻敏瓶不付埠夫婦富冨布府怖扶敷
80	斧普浮父符腐膚芙譜負賦赴阜附侮撫
90	武舞葡蕪部封楓風葺蕗伏副復幅服福
A0	腹複覆淵弗払沸仏物鮒分吻噴墳憤扮
B0	焚粉糞紛雰文聞丙併兵塀幣平弊柄
C0	並蔽閉陛米頁僻壁癖碧別瞥蔑箆偏変
D0	片篇編辺返遍便勉娩弁鞭保舗鋪圃捕
E0	歩甫補輔穂募墓慕戊暮母簿菩倣俸包
F0	呆報奉宝峰峯崩庖抱捧放方朋

Code page 932 (5 of 9)

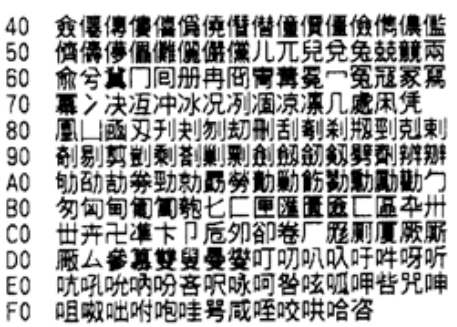
Code page 932-96

Code page 932-97

Code page 932-98



Code page 932-99



Code page 932-9A

Code page 932-9B

Code page 932 (6 of 9)

Code page 932-9C

Code page 932-9D

Code page 932-9E

Code page 932-9F

Code page 932-E0

Code page 932-E1

Code page 932 (7 of 9)

Code page 932-E2

Code page 932-E3

Code page 932-E4

Code page 932-E5

Code page 932-E6

Code page 932-E7

Code page 932 (8 of 9)

Code page 932-E8

Code page 932-E9

Code page 932-EA

Code page 932-ED

Code page 932-EE

Code page 932-FA

Code page 932 (9 of 9)

Code page 932-FB

40	沍涛渓清涜淼淘湿滌渓澀澱漸濆瀧濡
50	瀬炅炫弦焉煜熕熨燁熙爆煮狄状猴猪獲
60	珣珉珎珣琿琇琅琦琪琳琮琢璉璟瓶畯
70	卑皖皓皐皦益皖矻砠砿硯碆磴礼神
80	祥禔福禎竑竕靖竫箏糘紿絜綷線緒縕
90	罇羨羽苙荵茂菇華葊萌薮憃薑膪薫蕘
A0	蛙蠣褒訒諚詹誦閹諟諸諤諷謦贈頼贋
B0	赶赳軌迩逸遖郎都鄉鄧釮釗釵釭鈇彭
C0	鈔鉛鈐鉍鈷鈿鉐銑鉄鉑鈸鋤銚鉢鉸鋭
D0	鋼鋪鋲錚錆鋸錙錣錺錻鑁鋅鐔鋼錄鍛鍰
E0	鍗鍖鐓鑞鎧鎰鐚鐓閙隆隗隰隋霆霊霞
F0	靆靨靑靖顗顕飯飼餧館餬騨髙

Code page 932-FC

40	鬮鮴鮨鮱鮭鮃鯵鯲鯱鯛鰕鶴鶺鷆黑
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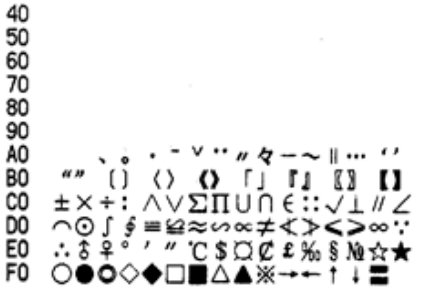
A0	
B0	
C0	
D0	
E0	
F0	

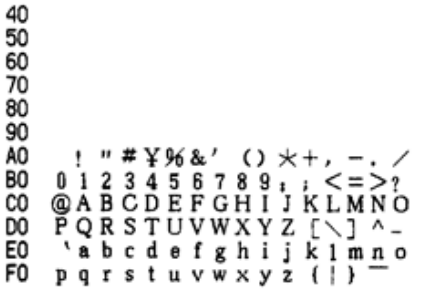
Code page 936 simple Chinese (1 of 12)

A140 - A1FF

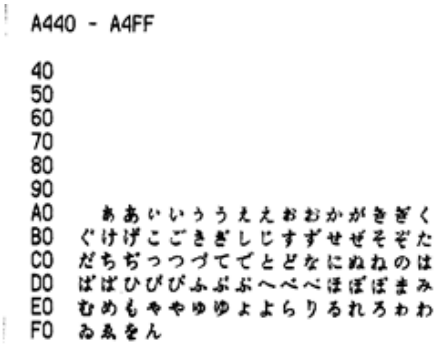


A240 - A2FF

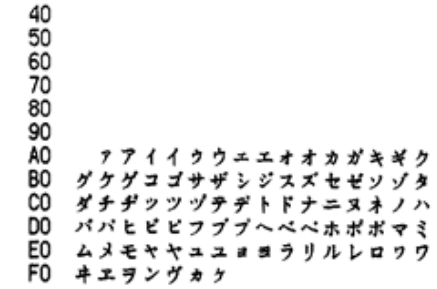
A340 - A3FF



A440 - A4FF

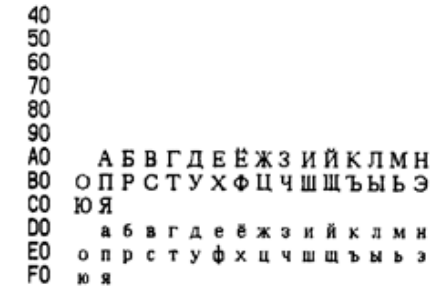


A540 - A5FF



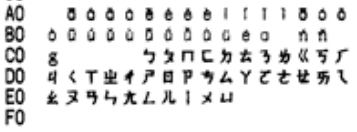
A640 - A6FF

A740 - A7FF

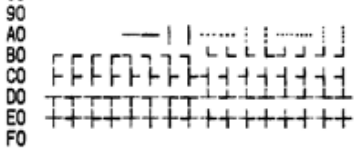


Code page 936 simple Chinese (2 of 12)

A840 - A8FF



A940 - A9FF



AA40 - AAFF

AB40 - ABFF

AC40 - ACFF

AD40 - ADFF

AE40 - AEFF

AF40 - AFFF

Code page 936 simple Chinese (3 of 12)

B040 - B0FF

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A0	啊阿埃挨哎唉哀皑癌蔼矮艾碍爱隘
B0	鞍氨安俺按暗岸胺案肮昂盎凹敖熬翱
C0	袄傲奥懊澳芭捌扒叭吧笆八疤巴拔跋
D0	靶把耙坝霸罢爸白柏百摆佰败拜稗斑
E0	班搬扳般颁板版扮拌伴瓣半办绊邦帮
F0	梆榜膀绑棒磅蚌镑傍谤苞胞包褒剥

B140 - B1FF

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A0	薄雹保堡饱宝抱报暴豹鲍爆杯碑悲
B0	卑北辈背贝钡倍狈备惫焙被奔苯本笨
C0	崩绷甭泵蹦进逼鼻比鄙笔彼碧蓖蔽毕
D0	毙毖币庇痹闭敝弊必辟壁臂避陛鞭边
E0	编贬扁便变卞辨辩辫遍标彪膘表鳖憋
F0	别瘪彬斌濒滨宾摈兵冰柄丙秉饼炳

B240 - B2FF

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A0	病并玻菠播拨钵波博勃搏铂箔伯帛
B0	舶脖膊渤泊驳捕卜哺补埠不布步簿部
C0	怖擦猜裁材才财睬踩采彩菜蔡餐参蚕
D0	残惭惨灿苍舱仓沧藏操糙槽曹草厕策
E0	侧册测层蹭插叉茬茶查碴搽察岔差诧
F0	拆柴豺搀掺蝉馋谗缠铲产阐颤昌猖

B340 - B3FF

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A0	场尝常长偿肠厂敞畅唱倡超抄钞朝
B0	嘲潮巢吵炒车扯撤掣彻澈郴臣辰尘晨
C0	忱沉陈趁衬撑称城橙成呈乘程惩澄诚
D0	承逞骋秤吃痴持匙池迟弛驰耻齿侈尺
E0	赤翅斥炽充冲虫崇宠抽酬畴踌稠愁筹
F0	仇绸瞅丑臭初出橱厨躇锄雏滁除楚

B440 - B4FF

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A0	础储矗搐触处揣川穿椽传船喘串疮
B0	窗幢床闯创吹炊捶锤垂春椿醇唇淳纯
C0	蠢戳绰疵茨磁雌辞慈瓷词此刺赐次聪
D0	葱囱匆从丛凑粗醋簇促蹿篡窜摧崔催
E0	脆瘁粹淬翠村存寸磋撮搓措挫错搭达
F0	答瘩打大呆歹傣戴带殆代贷袋待逮

B540 - B5FF

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A0	怠耽担丹单郸掸胆旦氮但惮淡诞弹
B0	蛋当挡党档裆刀捣蹈倒岛祷导到稻悼
C0	道盗德得的蹬灯登等瞪凳邓堤低滴迪
D0	敌笛狄涤翟嫡抵底地蒂第帝弟递缔颠
E0	掂滇碘点典靛垫电佃甸店惦奠淀殿碉
F0	叼雕凋刁掉吊钓调跌爹碟蝶迭谍叠

B640 - B6FF

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A0	丁盯叮钉顶鼎锭定订丢东冬董懂动
B0	栋侗恫冻洞兜抖斗陡豆逗痘都督毒犊
C0	独读堵睹赌杜镀肚度渡妒端短锻段断
D0	缎堆兑队对墩吨蹲敦顿囤钝盾遁掇哆
E0	多夺垛躲朵跺舵剁惰堕蛾峨鹅俄额讹
F0	娥恶厄扼遏鄂饿恩而儿耳尔饵洱二

B740 - B7FF

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A0	贰发罚筏伐乏阀法珐藩帆番翻樊矾
B0	钒繁凡烦反返范贩犯饭泛坊芳方肪房
C0	防妨仿访纺放菲非啡飞肥匪诽吠肺废
D0	沸费芬酚吩氛分纷坟焚汾粉奋份忿愤
E0	粪丰封枫蜂峰锋风疯烽逢冯缝讽奉凤
F0	佛否夫敷肤孵扶拂辐幅氟符伏俘服

Code page 936 simple Chinese (4 of 12)

B840 - B8FF

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A0	浮涪福袱弗甫抚辅俯釜斧脯腑府腐
B0	赴副覆赋复傅付阜父腹负富讣附妇缚
C0	咐噶嘎该改概钙盖溉干甘杆柑竿肝赶
D0	感秆敢赣冈刚钢缸肛纲岗港杠篙皋高
E0	膏羔糕搞镐稿告哥歌搁戈鸽胳疙割革
F0	葛格蛤阁隔铬个各给根跟耕更庚羹

B940 - B9FF

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A0	埂耿梗工攻功恭龚供躬公宫弓巩汞
B0	拱贡共钩勾沟苟狗垢构购够辜菇咕箍
C0	估沽孤姑鼓古蛊骨谷股故顾固雇刮瓜
D0	剐寡挂褂乖拐怪棺关官冠观管馆罐惯
E0	灌贯光广逛瑰规圭硅归龟闺轨鬼诡癸
F0	桂柜跪贵刽辊滚棍锅郭国果裹过哈

BA40 - BAFF

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A0	骸孩海氦亥害骇酣憨邯韩含涵寒函
B0	喊罕翰撼捍旱憾悍焊汗汉夯杭航壕嚎
C0	豪毫郝好耗号浩呵喝荷菏核禾和何合
D0	盒貉阂河涸赫褐鹤贺嘿黑痕很狠恨哼
E0	亨横衡恒轰哄烘虹鸿洪宏弘红喉侯猴
F0	吼厚候后呼乎忽瑚壶葫胡蝴狐糊湖

BB40 - BBFF

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A0	弧虎唬护互沪户花哗华猾滑画划化
B0	话槐徊怀淮坏欢环桓还缓换患唤痪豢
C0	焕涣宦幻荒慌黄磺蝗簧皇凰惶煌晃幌
D0	恍谎灰挥辉徽恢蛔回毁悔慧卉惠晦贿
E0	秽会烩汇讳诲绘荤昏婚魂浑混豁活伙
F0	火获或惑霍货祸击圾基机畸稽积箕

BC40 - BCFF

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A0	肌饥迹激讥鸡姬绩缉吉极棘辑籍集
B0	及急疾汲即嫉级挤几脊己蓟技冀季伎
C0	祭剂悸济寄寂计记既忌际妓继纪嘉枷
D0	夹佳家加荚颊贾甲钾假稼价架驾嫁歼
E0	监坚尖笺间煎兼肩艰奸缄茧检柬碱硷
F0	拣捡简俭剪减荐槛鉴践贱见键箭件

BD40 - BDFF

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A0	舰舰剑饯渐溅涧建僵姜将浆江疆蒋
B0	桨奖讲匠酱降蕉椒礁焦胶交郊浇骄娇
C0	嚼搅铰矫侥脚狡角饺缴绞剿教酵轿较
D0	叫窖揭接皆秸街阶截劫节桔杰捷睫竭
E0	洁结解姐戒藉芥界借介疥诫届巾筋斤
F0	金今津襟紧锦仅谨进靳晋禁近烬浸

BE40 - BEFF

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A0	尽劲荆兢茎睛晶鲸京惊精粳经井警
B0	景颈静境敬镜径痉靖竟竞净炯窘揪究
C0	纠玖韭久灸九酒厩救旧臼舅咎就疚鞠
D0	拘狙疽居驹菊局咀矩举沮聚拒据巨具
E0	距踞锯俱句惧炬剧捐鹃娟倦眷卷绢撅
F0	攫抉掘倔爵觉决诀绝均菌钧军君峻

BF40 - BFFF

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A0	俊竣浚郡骏喀咖卡咯开揩楷凯慨刊
B0	堪勘坎砍看康慷糠扛抗亢炕考拷烤靠
C0	坷苛柯棵磕颗科壳咳可渴克刻客课肯
D0	啃垦恳坑吭空恐孔控抠口扣寇枯哭窟
E0	苦酷库裤夸垮挎跨胯块筷侩快宽款匡
F0	筐狂框矿眶旷况亏盔岿窥葵奎魁傀

Code page 936 simple Chinese (5 of 12)

C040 - C0FF

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A0	馈愧溃坤昆捆困括扩廓阔垃拉喇蜡
B0	腊辣啦莱来赖蓝婪栏拦篮阑兰澜谰揽
C0	览懒缆烂滥琅榔狼廊郎朗浪捞劳牢老
D0	佬姥酪烙涝勒乐雷镭蕾磊累儡垒擂肋
E0	类泪棱楞冷厘梨犁黎篱狸离漓理李里
F0	鲤礼莉荔吏栗丽厉励砾历利傈例俐

C140 - C1FF

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A0	痢立粒沥隶力璃哩俩联莲连镰廉怜
B0	涟帘敛脸链恋炼练粮凉梁粱良两辆量
C0	晾亮谅撩聊僚疗燎寥辽潦了撂镣廖料
D0	列裂烈劣猎琳林磷霖临邻鳞淋凛赁吝
E0	拎玲菱零龄铃伶羚凌灵陵岭领另令溜
F0	琉榴硫馏留刘瘤流柳六龙聋咙笼窿

C240 - C2FF

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A0	隆垄拢陇楼娄搂篓漏陋芦卢颅庐炉
B0	掳卤虏鲁麓碌露路赂鹿潞禄录陆戮驴
C0	吕铝侣旅履屡缕虑氯律率滤绿峦挛孪
D0	滦卵乱掠略抡轮伦仑沦纶论萝螺罗逻
E0	锣箩骡裸落洛骆络妈麻玛码蚂马骂嘛
F0	吗埋买麦卖迈脉瞒馒蛮满蔓曼慢漫

C340 - C3FF

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A0	谩芒茫盲氓忙莽猫茅锚毛矛铆卯茂
B0	冒帽貌贸么玫枚梅酶霉煤没眉媒镁每
C0	美昧寐妹媚门闷们萌蒙檬盟锰猛梦孟
D0	眯醚靡糜迷谜弥米秘觅泌蜜密幂棉眠
E0	绵冕免勉娩缅面苗描瞄藐秒渺庙妙蔑
F0	灭民抿皿敏悯闽明螟鸣铭名命谬摸

C440 - C4FF

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A0	摹蘑模膜磨摩魔抹末莫墨默沫漠寞
B0	陌谋牟某拇牡亩姆母墓暮幕募慕木目
C0	睦牧穆拿哪呐钠那娜纳氖乃奶耐奈南
D0	男难囊挠脑恼闹淖呢馁内嫩能妮霓倪
E0	泥尼拟你匿腻逆溺蔫拈年碾撵捻念娘
F0	酿鸟尿捏聂孽啮镊镍涅您柠狞凝宁

C540 - C5FF

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A0	拧宁牛扭钮纽脓浓农弄奴努怒女暖
B0	虐疟挪懦糯诺哦欧鸥殴藕呕偶沤啪趴
C0	爬帕怕琶拍排牌徘湃派攀潘盘磐盼畔
D0	判叛乓庞旁耪胖抛咆刨炮袍跑泡呸胚
E0	培裴赔陪配佩沛喷盆砰抨烹澎彭蓬棚
F0	硼蓬膨朋鹏捧碰坯砒霹批披劈琵毗

C640 - C6FF

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A0	啤脾疲皮匹痞僻屁譬篇偏片骗飘漂
B0	瓢票撇瞥拼频贫品聘乒坪苹萍平凭瓶
C0	评屏坡泼颇婆破魄迫粕剖扑铺仆莆葡
D0	菩蒲埔朴圃普浦谱曝瀑期欺栖戚妻七
E0	凄漆柒沏其棋奇歧畦崎脐齐旗祈祁骑
F0	起岂乞企启契砌器气迄弃汽泣讫掐

C740 - C7FF

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A0	恰洽牵扦钎铅千迁签仟谦乾黔钱钳
B0	前潜遣浅谴堑嵌欠歉枪呛腔羌墙蔷强
C0	抢橇锹敲悄桥瞧乔侨巧鞘撬翘峭俏窍
D0	切茄且怯窃钦侵亲秦琴勤芹擒禽寝沁
E0	青轻氢倾卿清擎晴氰情顷请庆琼穷秋
F0	丘邱球求囚酋泅趋区蛆曲躯屈驱渠

Code page 936 simple Chinese (6 of 12)

C840 - C8FF

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A0	取娶龋趣去圈颧权醛泉全痊拳犬券
B0	劝缺炔瘸却鹊榷确雀裙群然燃冉染瓤
C0	壤攘嚷让饶扰绕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	揉柔肉茹蠕儒孺如辱乳汝入褥软阮蕊
F0	瑞锐闰润若弱撒洒萨腮鳃塞赛三叁

C940 - C9FF

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A0	伞散桑嗓丧搔骚扫嫂瑟色涩森僧莎
B0	砂杀刹沙纱傻啥煞筛晒珊苫杉山删煽
C0	衫闪陕擅赡膳善汕扇缮墒伤商赏晌上
D0	尚裳梢捎稍烧芍勺韶少哨邵绍奢赊蛇
E0	舌舍赦摄射慑涉社设砷申呻伸身深娠
F0	绅神沈审婶甚肾慎渗声生甥牲升绳

CA40 - CAFF

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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噬适仕侍释饰氏
D0	市恃室视试收手首守寿授售受瘦兽蔬
E0	枢梳殊抒输叔舒淑疏书赎孰熟薯暑曙
F0	署蜀黍鼠属术述树束戍竖墅庶数漱

CB40 - CBFF

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A0	恕刷耍摔衰甩帅栓拴霜双爽谁水睡
B0	税吮瞬顺舜说硕朔烁斯撕嘶思私司丝
C0	死肆寺嗣四伺似饲巳松耸怂颂送宋讼
D0	诵搜艘擞嗽苏酥俗素速粟僳塑溯宿诉
E0	肃酸蒜算虽隋随绥髓碎岁穗遂隧祟孙
F0	损笋蓑梭唆缩琐索锁所塌他

CC40 - CCFF

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A0	獭挞蹋踏胎苔抬台泰酞太态汰坍摊
B0	贪瘫滩坛檀痰潭谭谈坦毯袒碳探叹炭
C0	汤塘搪堂棠膛唐糖倘躺淌趟烫掏涛滔
D0	绦萄桃逃淘陶讨套特藤腾疼誊梯剔踢
E0	锑提题蹄啼体替嚏惕涕剃屉天添填田
F0	甜恬舔腆挑条迢眺跳贴铁帖厅听烃

CD40 - CDFF

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A0	汀廷停亭庭挺艇通桐酮瞳同铜形童
B0	桶捅筒统痛偷投头透凸秃突图徒途涂
C0	屠土吐兔湍团推颓腿蜕褪退吞屯臀拖
D0	托脱鸵陀驮驼椭妥拓唾挖哇蛙洼娃瓦
E0	袜歪外豌弯湾玩顽丸烷完碗挽晚皖惋
F0	宛婉万腕汪王亡枉网往旺望忘妄威

CE40 - CEFF

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A0	巍微危韦违桅围唯惟为潍维苇萎委
B0	伟伪尾纬未蔚味畏胃喂魏位渭谓尉慰
C0	卫瘟温蚊文闻纹吻稳紊问嗡翁瓮挝蜗
D0	涡窝我斡卧握沃巫呜钨乌污诬屋无芜
E0	梧吾吴毋武五捂午舞伍侮坞戊雾晤物
F0	勿务悟误昔熙析西硒矽晰嘻吸锡牺

CF40 - CFFF

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A0	稀息希悉膝夕惜熄烯溪汐犀檄袭席
B0	习媳喜铣洗系隙戏细瞎虾匣霞辖暇峡
C0	侠狭下厦夏吓掀锨先仙鲜纤咸贤衔舷
D0	闲涎弦嫌显险现献县腺馅羡宪陷限线
E0	相厢镶香箱襄湘乡翔祥详想响享项巷
F0	橡像向象萧硝霄削哮嚣销消宵淆晓

Code page 936 simple Chinese (7 of 12)

D040 - D0FF

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A0	小孝校肖啸笑效楔些歉蝎鞋协挟携
B0	邪斜胁谐写械卸蟹懈泄泻谢屑薪芯锌
C0	欣辛新忻心信衅星腥猩惺兴刑型形邢
D0	行醒幸杏性姓兄凶胸匈汹雄熊休修羞
E0	朽嗅锈秀袖绣墟戌需虚嘘须徐许蓄酗
F0	叙旭序畜恤絮婿绪续轩喧宣悬旋玄

D140 - D1FF

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A0	选癣眩绚靴薛学穴雪血勋熏循旬询
B0	寻驯巡殉汛训讯逊迅压押鸦鸭呀丫芽
C0	牙蚜崖衙涯雅哑亚讶焉咽阉烟淹盐严
D0	研蜒岩延言颜阎炎沿奄掩眼衍演艳堰
E0	燕厌砚雁唁彦焰宴谚验殃央鸯秧杨扬
F0	佯疡羊洋阳氧仰痒养样漾邀腰妖瑶

D240 - D2FF

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A0	摇尧遥窑谣姚咬舀药要耀椰噎耶爷
B0	野冶也页掖业叶曳腋夜液一壹医揖铱
C0	依伊衣颐夷遗移仪胰疑沂宜姨彝椅蚁
D0	倚已乙矣以艺抑易邑屹亿役臆逸肄疫
E0	亦裔意毅忆义益溢诣议谊译异翼翌绎
F0	茵荫因殷音阴姻吟银淫寅饮尹引隐

D340 - D3FF

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A0	印英樱婴鹰应缨莹萤营荧蝇迎赢盈
B0	影颖硬映哟拥佣臃痈庸雍踊蛹咏泳涌
C0	永恿勇用幽优悠忧尤由邮铀犹油游酉
D0	有友右佑釉诱又幼迂淤于盂榆虞愚舆
E0	余俞逾鱼愉渝渔隅予娱雨与屿禹宇语
F0	羽玉域芋郁吁遇喻峪御愈欲狱育誉

D440 - D4FF

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A0	浴寓裕预豫驭鸳渊冤元垣袁原援辕
B0	园员圆猿源缘远苑愿怨院曰约越跃钥
C0	岳粤月悦阅耘云郧匀陨允运蕴酝晕韵
D0	孕匝砸杂栽哉灾宰载再在咱攒暂赞赃
E0	脏葬遭糟凿藻枣早澡蚤躁噪造皂灶燥
F0	责择则泽贼怎增憎曾赠扎喳渣札轧

D540 - D5FF

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A0	铡闸眨栅榨咋乍炸诈摘斋宅窄债寨
B0	瞻毡詹粘沾盏斩辗崭展蘸栈占战站湛
C0	绽樟章彰漳张掌涨杖丈帐账仗胀蛰障
D0	招昭找沼赵照罩兆肇召遮折哲蛰辙者
E0	锗蔗这浙珍斟真甄砧臻贞针侦枕疹诊
F0	震振镇阵蒸挣睁征狰争怔整拯正政

D640 - D6FF

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A0	镁症郑证芝枝支吱蜘知肢脂汁之织
B0	职直植殖执值侄址指止趾只旨纸志挚
C0	掷至致置帜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诌
E0	粥轴肘帚咒皱宙昼骤珠株蛛朱猪诸诛
F0	逐竹烛煮拄瞩嘱主著柱助蛀贮铸筑

D740 - D7FF

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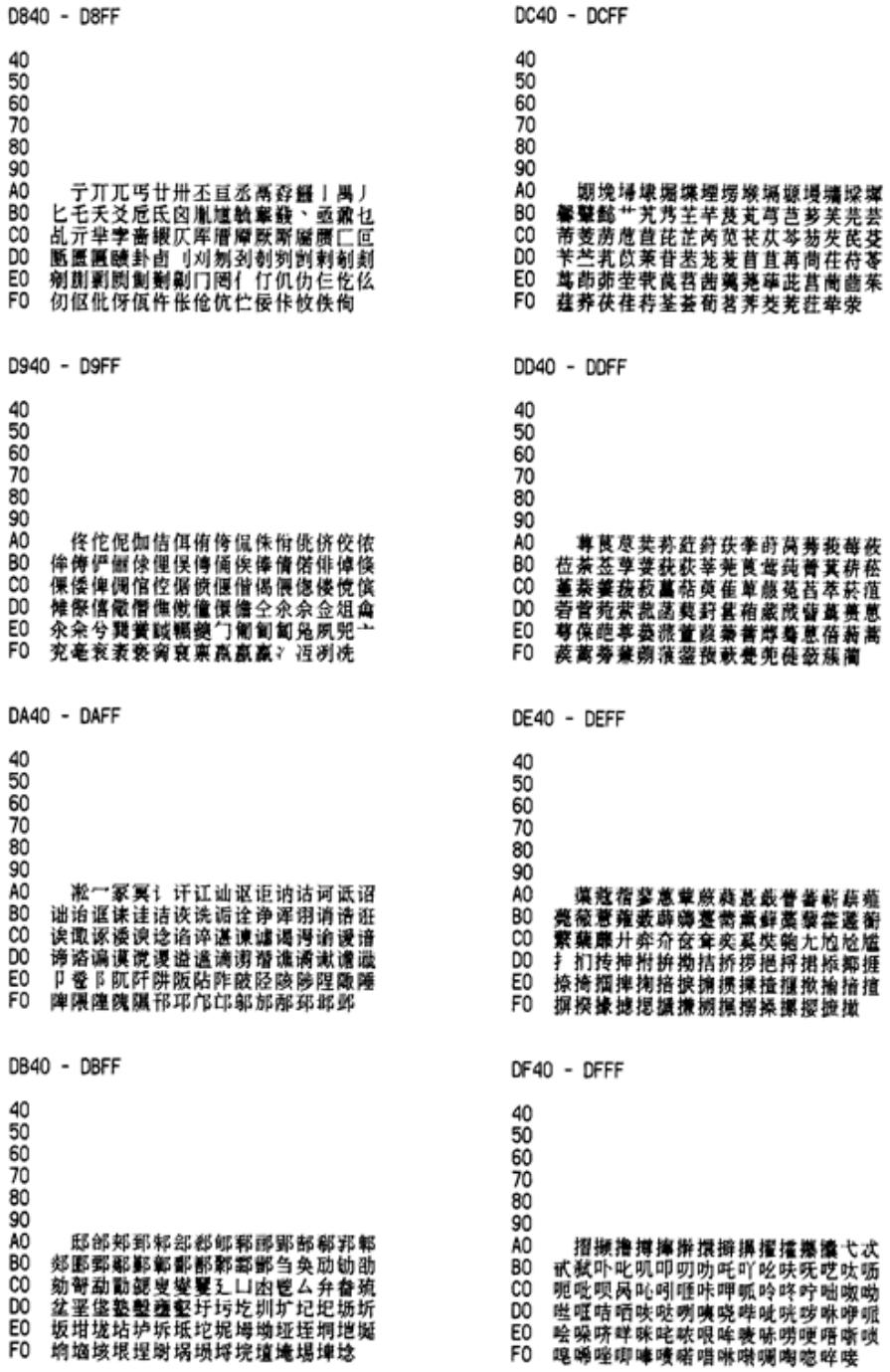
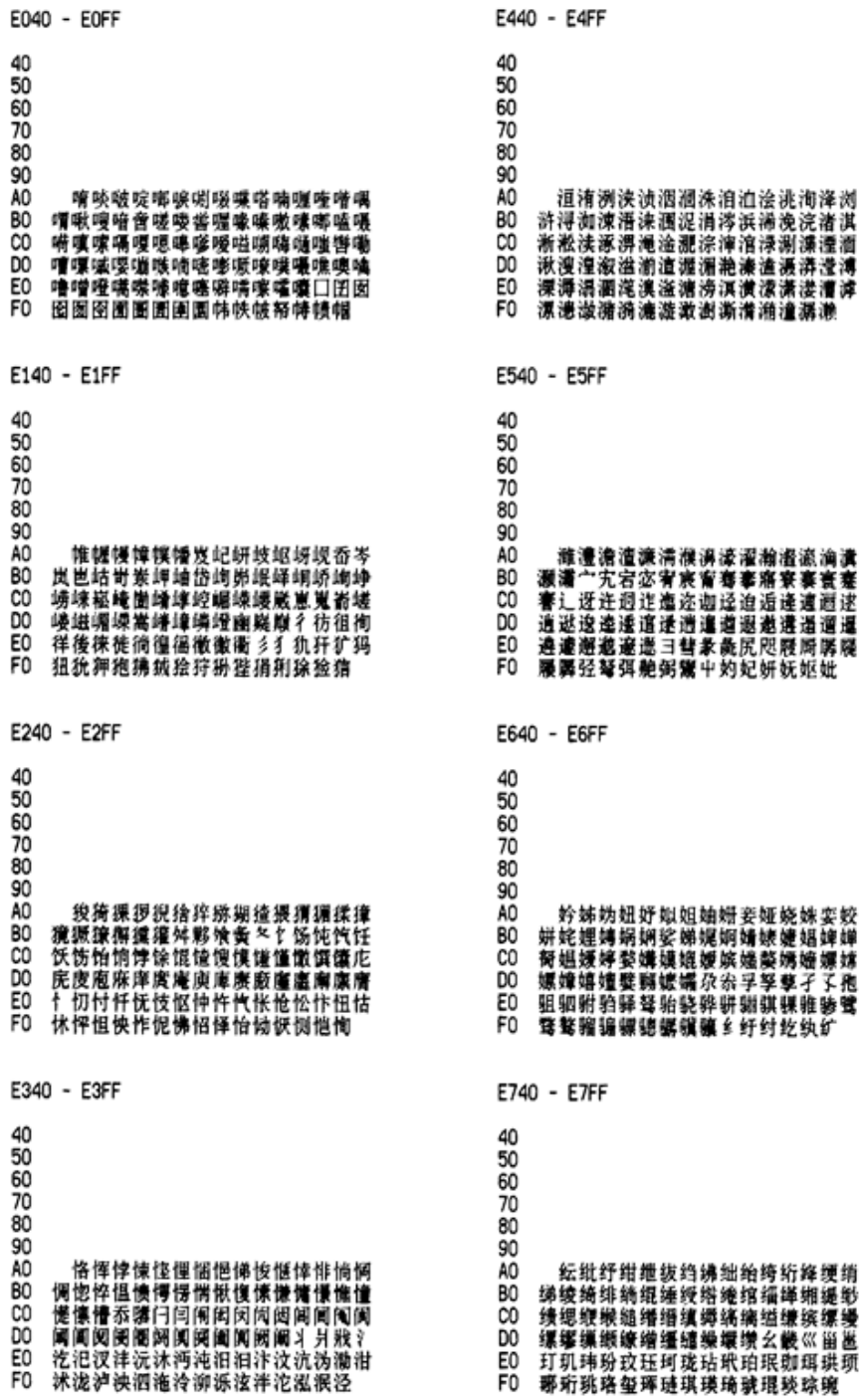
A0	住注祝驻抓爪拽专砖转撰赚篆桩庄
B0	装妆撞壮状椎锥追赘坠缀谆准捉拙卓
C0	桌琢茁酌啄着灼浊兹咨资姿滋淄孜紫
D0	仔籽滓子自渍字鬃棕踪宗综总纵邹走
E0	奏揍租足卒族祖诅阻组钻纂嘴醉最罪
F0	尊遵昨左佐柞做作坐座

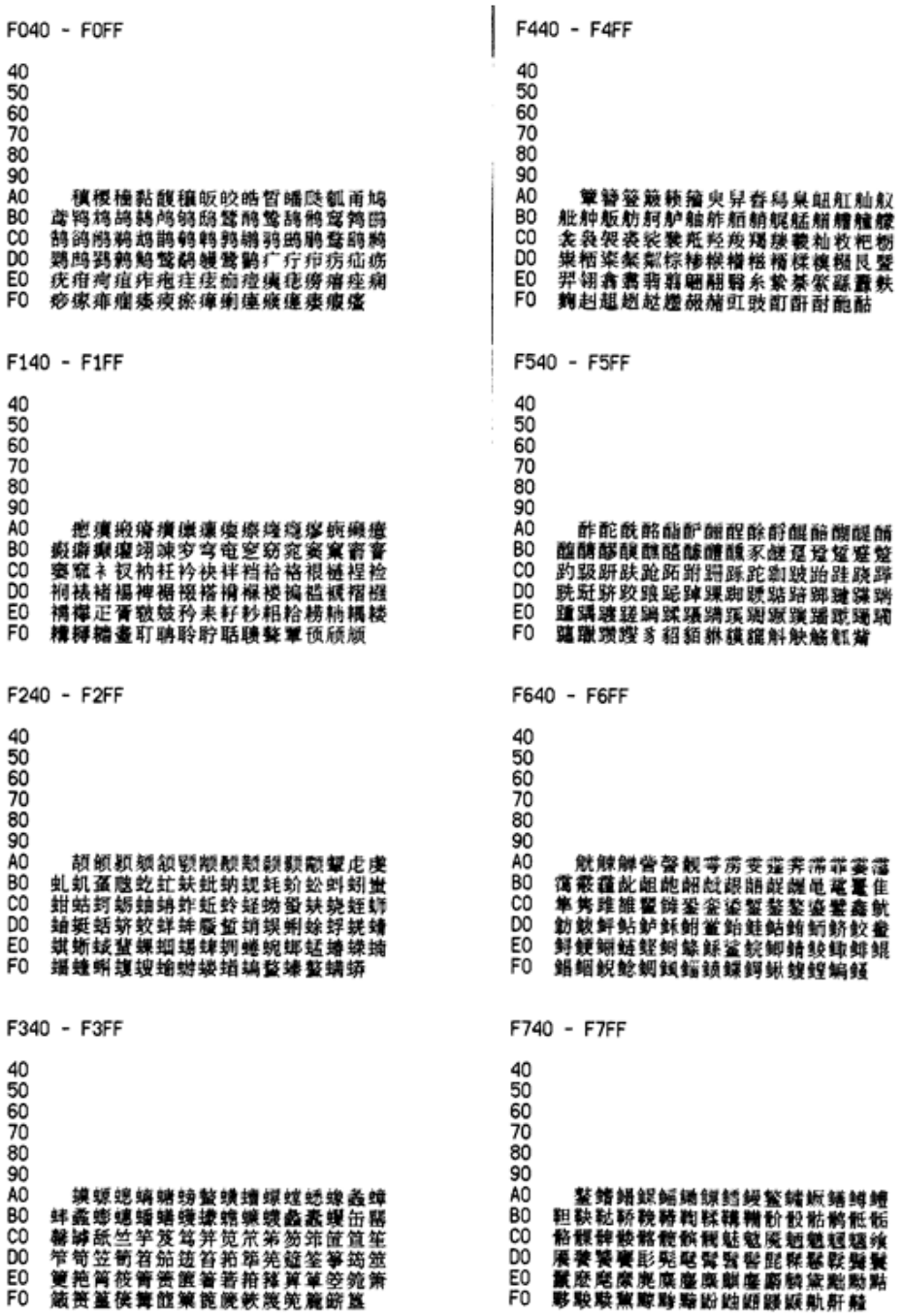
Code page 936 simple Chinese (8 of 12)



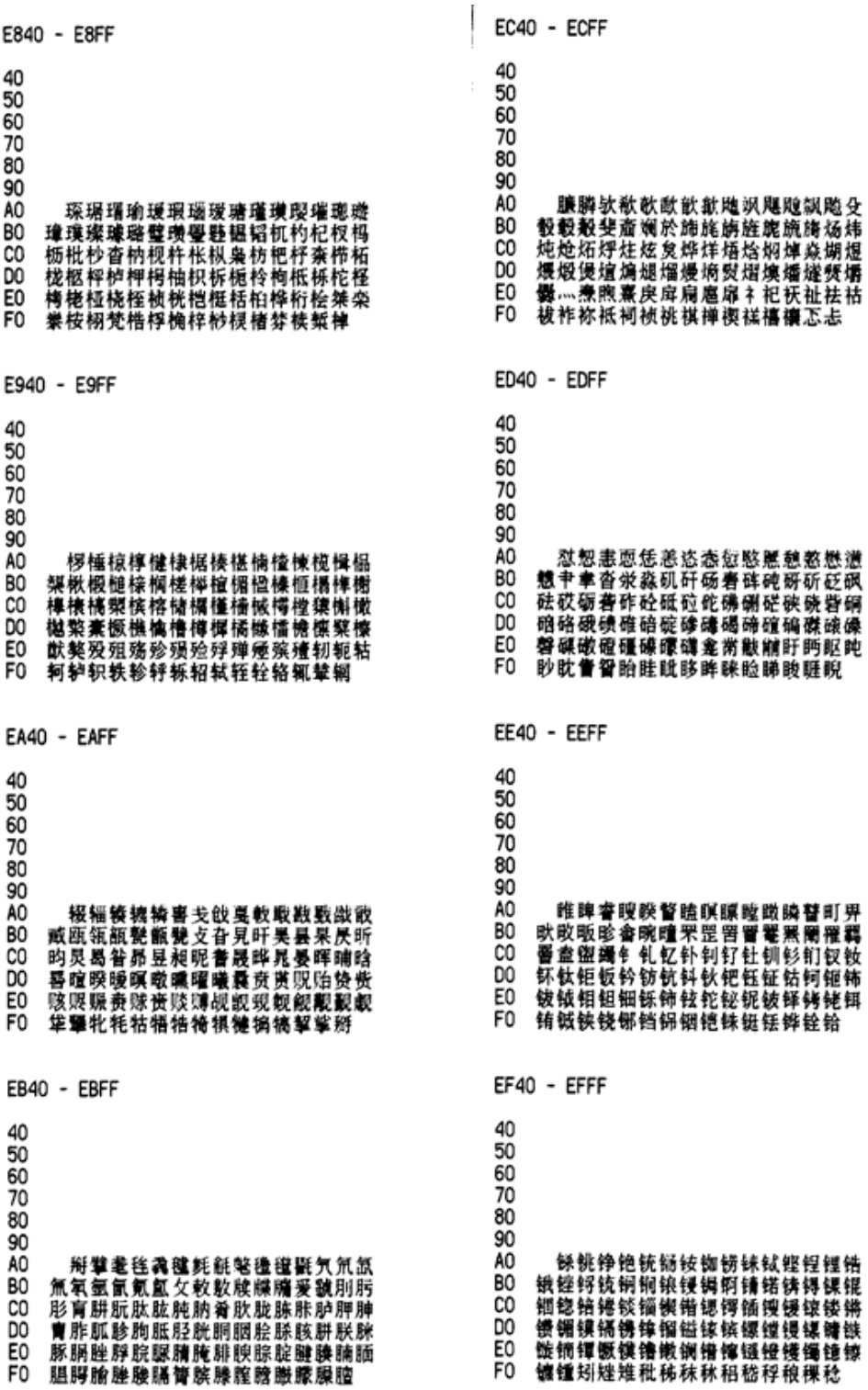
Code page 936 simple Chinese (9 of 12)



Code page 936 simple Chinese (10 of 12)



Code page 936 simple Chinese (11 of 12)



Code page 936 simple Chinese (12 of 12)

F840 - F8FF

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A0
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F0

F940 - F9FF

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A0
B0
C0
D0
E0
F0

FA40 - FAFF

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A0
B0
C0
D0
E0
F0

FB40 - FBFF

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A0
B0
C0
D0
E0
F0

FC40 - FCFF

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A0
B0
C0
D0
E0
F0

FD40 - FDFF

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A0
B0
C0
D0
E0
F0

FE40 - FEFF

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FF40 - FFFF

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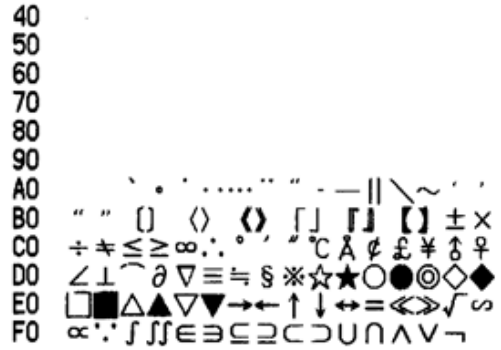
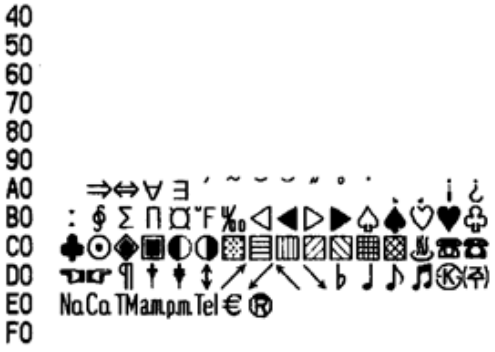
Code page 949 Korean (1 of 16)

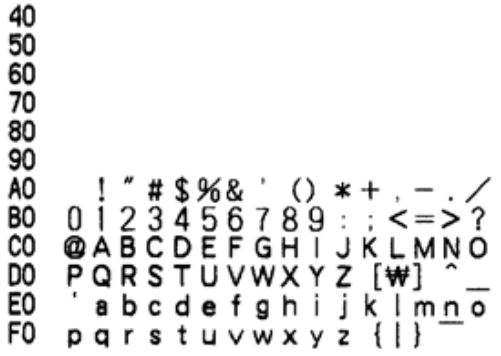
A140 - A1FF



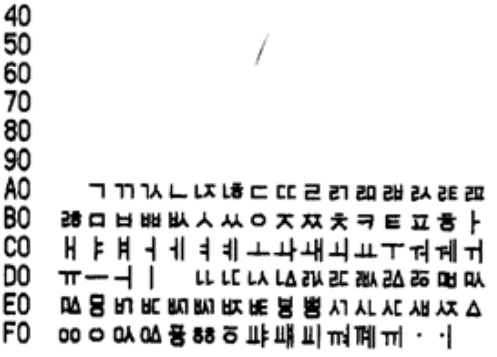
A240 - A2FF



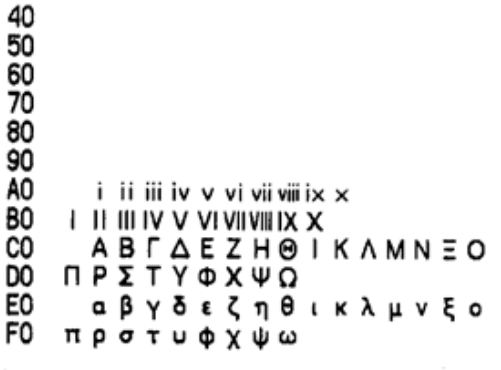
A340 - A3FF



A440 - A4FF

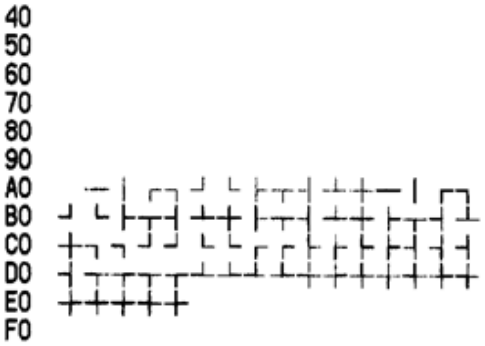


A540 - A5FF

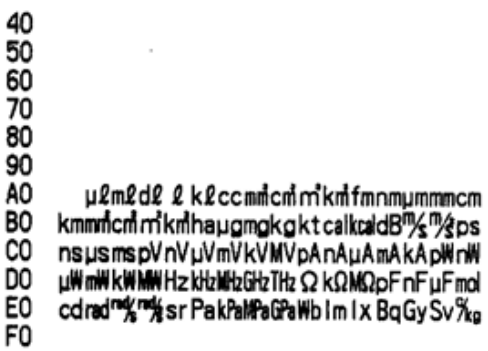


Code page 949 Korean (2 of 16)

A640 - A6FF



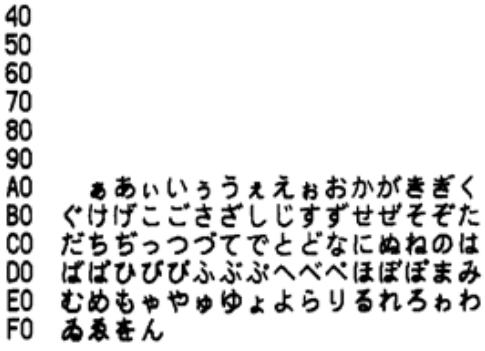
A740 - A7FF



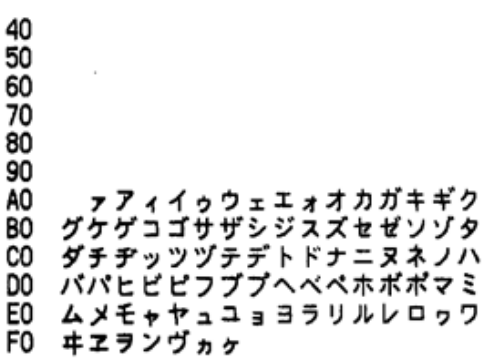
A840 - A8FF

A940 - A9FF

AA40 - AAFF



AB40 - ABFF



Code page 949 Korean (3 of 16)

AC40 - ACFF

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A0	А Б В Г Д Е Ё Ж З И Й К Л М Н
B0	О П Р С Т У Ф Х Ц Ч Ш Щ Ъ Ы Ь Э
C0	Ю Я
D0	а б в г д е ё ж з и й к л м н
E0	о п р с т у ф х ц ч ш щ ъ ы ь э
F0	ю я

AD40 - ADFF

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A0	
B0	
C0	
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E0	
F0	

AE40 - AEFF

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A0	
B0	
C0	
D0	
E0	
F0	

AF40 - AFFF

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A0	
B0	
C0	
D0	
E0	
F0	

B040 - B0FF

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A0	가각간갇갈갉갊감갑값갓갔강갖갗
B0	같갚갛개객갠갤갬갭갯갰갱갸걕갼걀
C0	걋걍걔걘걜거걱건걷걸걺검겁것겄겅
D0	겆겉겊겨격겪견겯결겸겹겻겼경곁계
E0	곈곌곕곗곘고곡곤곧골곪곬곯곱곳공
F0	곶과곽관괄괆

B140 - B1FF

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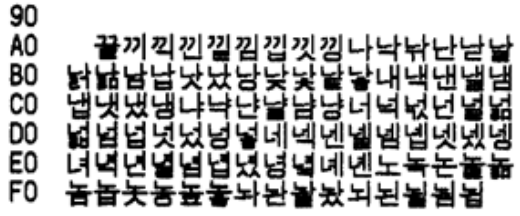
A0	괌괍괏광괘괜괠괩괬괭괴괵괸괼굄
B0	굅굇굉교굔굘굡굣구국군굳굴굵굻굼
C0	굽굿궁궂귀궉권궐궜궝궤궷귀귁귄귿
D0	귈귐귑귓규균귤그극근귿글긁긂긇금
E0	긍긔기긱긴긷길긺김깁깃깄깊까깍
F0	깎깐깔깖깜깝깟깠깡깥깨깩깬깰깸

Code page 949 Korean (4 of 16)

B240 - B2FF

B340 - B3FF

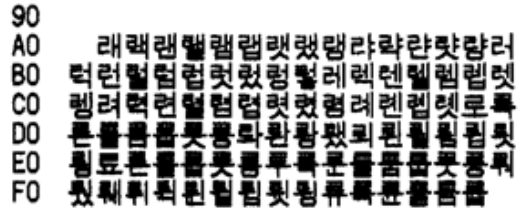


B440 - B4FF

B540 - B5FF

B640 - B6FF

B740 - B7FF



Code page 949 Korean (5 of 16)

B840 - B8FF

B940 - B9FF

BA40 - BAFF

BB40 - BBFF

BC40 - BCFF

BD40 - BDFF

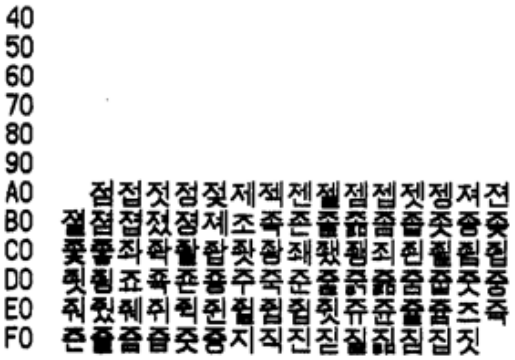
Code page 949 Korean (6 of 16)

BE40 - BEFF

BF40 - BFFF

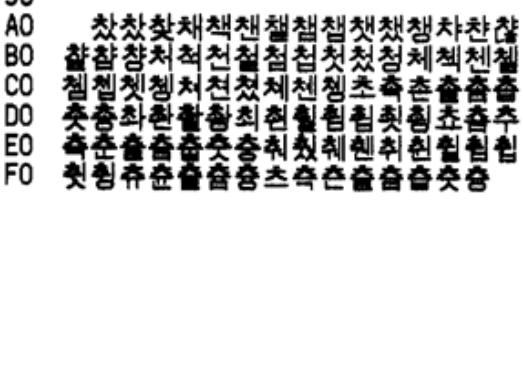
C040 - C0FF

C140 - C1FF



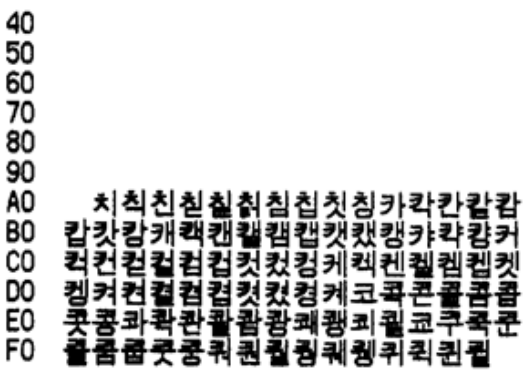
C240 - C2FF

C340 - C3FF



Code page 949 Korean (7 of 16)

C440 - C4FF

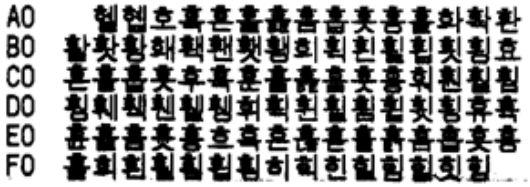


C540 - C5FF

C640 - C6FF

C740 - C7FF

C840 - C8FF



C940 - C9FF

Code page 949 Korean (8 of 16)

CA40 - CAFF

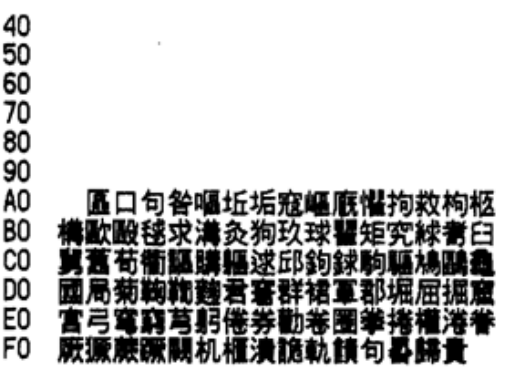
CB40 - CBFF

CC40 - CCFF

CD40 - CDFF

CE40 - CEFF

CF40 - CFFF



Code page 949 Korean (9 of 16)

D040 - D0FF

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A0	鬼龜叫圭奎揆槻珪硅窺竅糾葵規赳
B0	逵閨勻均畇筠菌鈞龜橘克剋劇戟棘極
C0	隙僅劤勤懃斤根槿瑾筋芹菫覲謹近饉
D0	契今妗擒昤檎琴禁禽芩衾衿襟金錦伋
E0	及急扱汲級給亘兢矜肯企伎其冀嗜器
F0	圻基埼夔奇妓寄岐崎己幾忌技旗旣

D140 - D1FF

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A0	萁期杞棋棄機欺氣汽沂淇玘琦琪璂
B0	璣畸磯箕碕祁祇祈祺箕紀綺羈耆耭肌
C0	記譏豈起錡鎎飢饑騎騏驥麒緊佶吉拮
D0	桔金喫儺喇奈娜懦懶拏拿癩羅蘿螺裸
E0	邏那樂洛烙珞落諾酪駱亂卵暖欄爛蘭
F0	闌難鸞捏捺南嵐枏楠湳濫男藍襤拉

D240 - D2FF

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A0	納臘蠟衲囊娘廊朗浪狼郎乃來內奈
B0	奈耐冷女年撚秊念恬拈捻寧寗努勞奴
C0	弩怒擄櫓爐瑙盧老蘆虜路露駑魯鷺碌
D0	祿綠菉錄鹿論壟弄濃籠聾膿農惱牢磊
E0	腦賂雷尿壘屢樓淚漏累縷陋嫩訥杻紐
F0	勒肋凜凌稜綾能菱陵尼泥匿溺多茶

D340 - D3FF

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A0	丹亶但單團壇彖斷旦檀段湍短端簞
B0	緞蛋袒鄲鍛撻澾獺疸達啖坍憺擔曇淡
C0	湛潭澹痰聃膽蕁覃談譚錟沓畓答踏遝
D0	唐堂塘幢戇撞棠當糖螳黨代垈坮大對
E0	岱帶待戴擡玳臺袋貸隊黛宅德悳倒刀
F0	到圖堵塗導屠島嶋度徒悼挑掉搗桃

D440 - D4FF

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A0	棹櫂淘渡滔濤燾盜睹禱稻萄覩賭跳
B0	蹈逃途道都鍍陶韜毒瀆牘犢獨督禿篤
C0	纛讀墩惇敦旽暾沌焞燉豚頓乭突仝冬
D0	凍動同憧東桐棟洞潼疼瞳童胴董銅兜
E0	斗杜科痘荳藚讀豆逗頭屯臀芚遁遯鈍
F0	得嶝橙燈登等藤謄鄧騰喇懶拿癩羅

D540 - D5FF

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A0	蘿螺裸邏樂洛烙珞絡落諾酪駱丹亂
B0	卵欄爛瀾襴闌鸞剌辣嵐擥攬欖濫籃纜
C0	藍襤覽拉臘蠟廊朗浪狼琅瑯螂郎來崍
D0	徠萊冷掠略亮倆兩凉梁樑粮粱糧良諒
E0	輛量侶儷勵呂廬慮戾旅櫚濾礪藜蠣閭
F0	驪麗黎力曆歷瀝礫轢靂憐戀攣漣

Code page 949 Korean (10 of 16)

D640 - D6FF

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A0	煉璉練聯蓮蝀連鍊冽列劣洌烈裂廉
B0	斂殮濂簾獵令伶囹寧岑嶺怜玲笭羚翎
C0	聆逞鈴零靈領齡例澧禮醴隷勞怒撈擄
D0	櫓潞瀘爐盧老蘆虜路輅露魯鷺鹵碌祿
E0	綠菉錄鹿麓論壟弄朧瀧瓏籠聾儡瀨牢
F0	磊賂賚賴雷了僚寮廖料燎療瞭聊蓼

D740 - D7FF

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A0	遼鬧龍壘婁屢樓淚漏瘻累縷蔞褸鏤
B0	陋劉旒柳榴流溜瀏琉瑠留瘤硫謬類六
C0	戮陸侖倫崙淪綸輪律慄栗率隆勒肋凜
D0	凌楞稜綾菱陵俚利厘吏唎履悧李梨浬
E0	犁狸理璃異痢籬罹羸莉裏裡里釐離鯉
F0	吝潾燐璘藺躪隣鱗麟林淋琳臨霖砬

D840 - D8FF

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A0	立笠粒摩瑪痲碼磨馬魔麻寞幕漠膜
B0	莫邈万卍娩巒帊慢挽晚曼滿漫灣瞞萬
C0	蔓蠻輓饅鰻唜抹末沫茉襪靺亡妄忘忙
D0	望網罔芒茫莽輞邙埋妹媒寐昧枚梅每
E0	煤黴買賣邁魅脈貊陌驀麥孟氓猛盲盟
F0	萌冪覓免冕勉棉沔眄眠綿緬面麵滅

D940 - D9FF

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A0	蔑冥名命明暝椧溟皿瞑茗蓂螟酩銘
B0	鳴袂侮冒募姆帽慕摸摹暮某模母毛牟
C0	牡瑁眸矛耗芼茅謀謨貌木沐牧目睦穆
D0	鶩歿沒夢朦蒙卯墓妙廟描昴杳渺猫妙
E0	苗錨務巫憮撫武楙武毋無珷畝
F0	繆舞茂蕪誣貿霧鵡墨默們刎吻問文

DA40 - DAFF

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A0	汶紊紋閔蚊門雯勿沕物味媚尾嵋彌
B0	微未梶楣漠漫眉米美薇謎迷靡黴岷悶
C0	愍憫敏旻旼民泯玟珉緡閔密蜜謐剝博
D0	拍搏撲朴樸泊珀璞箔粕縛膊舶薄迫雹
E0	駁伴半反叛拌搬攀斑槃泮潘班畔瘢盤
F0	盼磐磻礬絆般蟠返頒飯勃拔撥渤潑

DB40 - DBFF

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A0	發跋醱鉢髮魃倣傍坊妨尨幇彷房放
B0	方旁昉枋榜滂磅紡肪膀舫芳蒡蚌訪謗
C0	邦防龐倍俳北培徘拜排杯湃焙盃背胚
D0	裴裵裨賠陪配陪伯佰帛柏栢白百魄幡
E0	樊煩燔番磻繁蕃藩飜伐筏罰閥凡帆梵
F0	氾汎泛犯範范法琺僻劈壁擘檗璧癖

Code page 949 Korean (11 of 16)

DC40 - DCFF

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A0	璧碧闢霹便卞弁變辨辯邊別瞥鱉鼈
B0	丙倂兵屛幷昞昺柄棅炳甁病秉竝輧餠
C0	騈保堡報寶普步洑湺潽珤甫菩補褓譜
D0	輔伏僕匐卜宓復服福腹茯蔔複覆輹輻
E0	馥鰒本乶俸奉封峯峰捧棒烽熢琫縫蓬
F0	蜂逢鋒鳳不付俯傅剖副否咐埠夫婦

DD40 - DDFF

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A0	孚孵富府復扶敷斧浮溥父符簿缶腐
B0	腑膚艀芙莩訃負賦賻赴趺部釜阜附駙
C0	鳧北分吩噴墳奔奮忿憤扮昐汾焚盆粉
D0	糞紛芬賁雰不佛弗彿拂崩朋棚硼繃鵬
E0	丕備匕匪卑妃婢庇悲憊扉批斐枇榧比
F0	毖毗毘沸泌琵痺砒碑秕秘粃緋翡肥

DE40 - DEFF

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A0	脾臂菲蜚裨誹譬費鄙非飛鼻嚬嬪彬
B0	斌檳殯浜濱瀕牝玭貧賓頻憑氷聘騁乍
C0	事些仕伺似使俟僿史司唆嗣四士奢娑
D0	寫寺射巳師徙思捨斜斯柶査梭死沙泗
E0	渣瀉獅砂社祀祠私篩紗絲肆舍莎蓑蛇
F0	裟詐詞謝賜赦辭邪飼駟麝削數朔索

DF40 - DFFF

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A0	傘刪山散汕珊産疝算蒜酸霰乷撒殺
B0	煞薩三參杉森滲芟蔘衫揷澁鈒颯上傷
C0	像償商喪嘗孀尙峠常床庠廂想桑橡湘
D0	爽牀狀相祥箱翔裳觴詳象賞霜塞璽賽
E0	嗇塞穡索色牲生甥省笙墅壻嶼序庶徐
F0	恕抒捿敍暑曙書栖棲犀瑞筮絮緖署

E040 - E0FF

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A0	胥舒薯西誓逝鋤黍鼠夕奭席惜昔晳
B0	析汐淅潟石碩蓆釋錫仙僊先善嬋宣扇
C0	敾旋渲煽琁瑄璇璿癬禪線繕羨腺膳船
D0	蘚蟬詵跣選銑鐥饍鮮卨屑楔泄洩渫舌
E0	薛褻設說雪齧剡暹殲纖蟾贍閃陝攝涉
F0	燮葉城姓宬性惺成星晟猩珹盛省筬

E140 - E1FF

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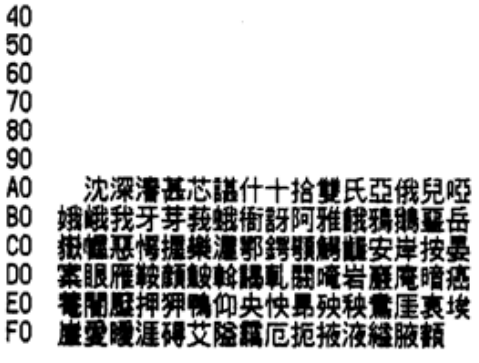
A0	聖聲腥誠醒世勢歲洗稅笹細說貰召
B0	嘯塑宵小少巢所掃搔昭梳沼消溯瀟炤
C0	燒甦疏疎瘙笑篠簫素紹蔬蕭蘇訴逍遡
D0	邵銷韶騷俗屬束涑粟續謖贖速孫巽損
E0	蓀遜飡率宋悚松淞訟誦送頌刷殺灑碎
F0	鎖衰釗修受嗽囚垂壽嫂守岫峀帥愁

Code page 949 Korean (12 of 16)

E240 - E2FF

E340 - E3FF

E440 - E4FF



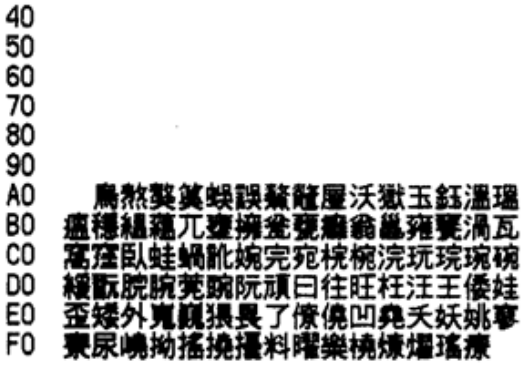
E540 - E5FF

E640 - E6FF

E740 - E7FF

Code page 949 Korean (13 of 16)

E840 - E8FF



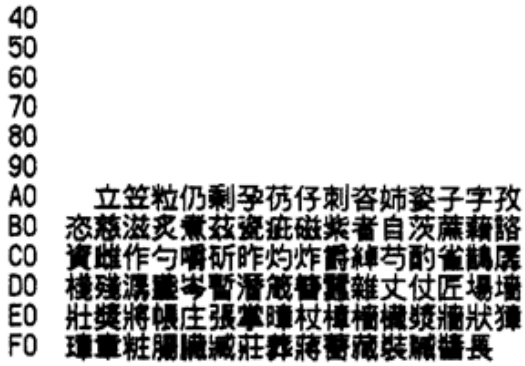
E940 - E9FF

EA40 - EAFF

EB40 - EBFF

EC40 - ECFF

ED40 - EDFF



Code page 949 Korean (14 of 16)

EE40 - EEFF

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A0	障再哉在宰才材栽梓渽滓災縡裁財
B0	載齋齎爭箏諍錚佇低儲咀姐底抵杵楮
C0	樗沮渚狙猪疽箸紵苧菹著藷詛貯躇這
D0	邸雎齟勣吊嫡寂摘敵滴狄炙的積笛籍
E0	績翟荻謫賊赤跡蹟迪迹適鏑佃佺傳全
F0	典前剪塡塼奠專展廛悛戰栓殿氈澱

EF40 - EFFF

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A0	煎琠田甸畑癲筌箋箭篆纏詮輾轉鈿
B0	銓錢鐫電顚顫餞切截折浙癤竊節絕占
C0	岾店漸点粘霑鮎點接摺蝶丁井亭停偵
D0	呈姃定幀庭廷征情挺政整旌晶晸柾楨
E0	檉正汀淀淨渟湞瀞炡玎珽町睛碇禎程
F0	穽精綎艇訂諪貞鄭酊釘鉦鋌錠霆靖

F040 - F0FF

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A0	靜頂鼎制劑啼堤帝弟悌提梯濟祭第
B0	臍薺製諸蹄醍除際霽題齊俎兆凋助嘲
C0	弔彫措操早晁曺曹朝條棗槽漕潮照燥
D0	爪璪眺祖祚租稠窕粗糟組繰肇藻蚤詔
E0	調趙躁造遭釣阻雕鳥族簇足鏃存尊卒
F0	拙猝倧宗從悰慫棕淙琮種終綜縱腫

F140 - F1FF

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A0	踪踵鍾鐘佐坐左座挫罪主住侏做姝
B0	胄呪周嗾奏宙州廚晝朱柱株注洲湊澍
C0	炷珠疇籌紂紬綢舟蛛註誅走躊輳週酎
D0	酒鑄駐竹粥俊儁准埈寯峻晙樽浚準濬
E0	焌畯竣蠢逡遵雋駿茁中仲衆重卽櫛楫
F0	汁葺增憎曾拯烝甑症繒蒸證贈之只

F240 - F2FF

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A0	咫地址志持指摯支旨智枝枳止池沚
B0	漬知砥祉祗紙肢脂至芝芷蜘誌識贄趾
C0	遲直稙稷織職唇嗔塵振搢晉晋桭榛殄
D0	津溱珍瑨璡畛疹盡眞瞋秦縉縝臻蔯袗
E0	診賑軫辰進鎭陣陳震侄叱姪嫉帙桎瓆
F0	疾秩窒膣蛭質跌迭斟朕什執潗緝輯

F340 - F3FF

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A0	鏶集徵懲澄且侘借叉嗟嵯差次此磋
B0	箚茶蹉車遮捉搾着窄錯鑿齪撰澯燦璨
C0	瓚竄簒纂粲纘讚贊鑽餐饌刹察擦札紮
D0	僭參塹慘慙懺斬站讒讖倉倡創唱娼廠
E0	彰愴敞昌昶暢槍滄漲猖瘡窓脹艙菖蒼
F0	債埰寀寨彩採砦綵菜蔡采釵冊柵策

Code page 949 Korean (15 of 16)

F440 - F4FF

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A0	責凄妻悽處倜刺剔尺慽戚拓擲斥滌
B0	瘠脊蹠陟隻仟千喘天川擅泉淺玔穿舛
C0	薦賤踐遷釧闡阡韆凸哲喆徹撤澈綴輟
D0	轍鐵僉尖沾添甛瞻簽籤詹諂堞妾帖捷
E0	牒疊睫諜貼輒廳晴淸聽菁請靑鯖切剃
F0	替涕滯締諦逮遞體初剿哨憔抄招梢

F540 - F5FF

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A0	椒楚樵炒焦硝礁礎秒稍肖艸苕草蕉
B0	貂超酢醋醮促囑燭矗蜀觸寸忖村邨叢
C0	塚寵悤憁摠總聰蔥銃撮催崔最墜抽推
D0	椎楸樞湫皺秋芻萩諏趨追鄒酋醜錐錘
E0	鎚雛騶鰍丑畜祝竺筑築縮蓄蹙蹴軸逐
F0	春椿瑃出朮黜充忠沖蟲衝衷悴膵萃

F640 - F6FF

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A0	贅取吹嘴娶就炊翠聚脆臭趣醉驟鷲
B0	側仄厠惻測層侈値嗤峙幟恥梔治淄熾
C0	痔痴癡稚穉緇緻置致蚩輜雉馳齒則勅
D0	飭親七柒漆侵寢枕沈浸琛砧針鍼蟄秤
E0	稱快他咤唾墮妥惰打拖朶楕舵陀馱駝
F0	倬卓啄坼度托拓擢晫柝濁濯琢琸託

F740 - F7FF

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A0	鐸呑嘆坦彈憚歎灘炭綻誕奪脫探眈
B0	耽貪塔搭榻宕帑湯糖蕩兌台太怠態殆
C0	汰泰笞胎苔跆邰颱宅擇澤撑攄兎吐土
D0	討慟桶洞痛筒統通堆槌腿褪退頹偸套
E0	妬投透鬪慝特闖坡婆巴把播擺杷波派
F0	爬琶破罷芭跛頗判坂板版瓣販辦鈑

F840 - F8FF

40	
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A0	阪八叭捌佩唄悖敗沛浿牌狽稗覇貝
B0	彭澎烹膨愎便偏扁片篇編翩遍鞭騙貶
C0	坪平枰萍評吠嬖幣廢弊斃肺蔽閉陛佈
D0	包匍匏咆哺圃布怖抛抱捕暴泡浦疱砲
E0	胞脯苞葡蒲袍褒逋鋪飽鮑幅暴曝瀑爆
F0	輻俵剽彪慓杓標漂瓢票表豹飇飄驃

F940 - F9FF

40	
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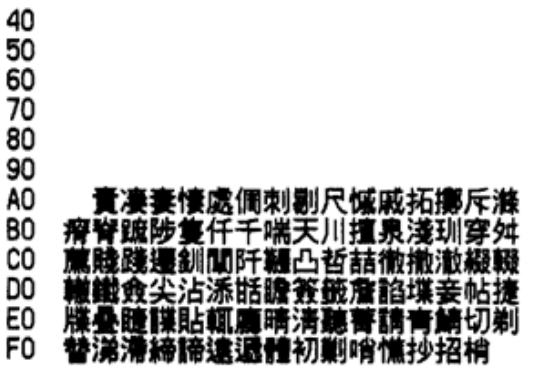
A0	品稟楓諷豊風馮彼披疲皮被避陂匹
B0	弼必泌珌畢疋筆苾馝乏逼下何厦夏廈
C0	昰河瑕荷蝦賀遐霞鰕壑學虐謔鶴寒恨
D0	悍旱汗漢澣瀚罕翰閑閒限韓割轄函含
E0	咸啣喊檻涵緘艦銜陷鹹合哈盒蛤閤闔
F0	陜亢伉姮嫦巷恒抗杭桁沆港缸肛航

Code page 949 Korean (16 of 16)

F440 - F4FF

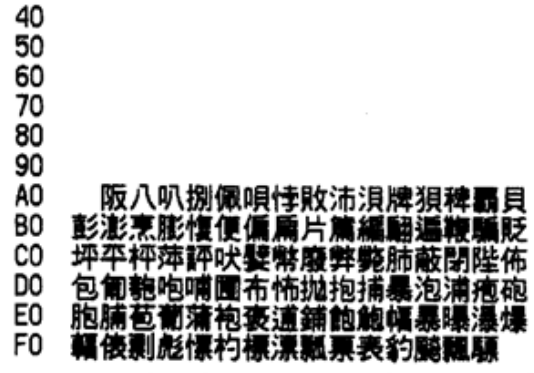


F540 - F5FF

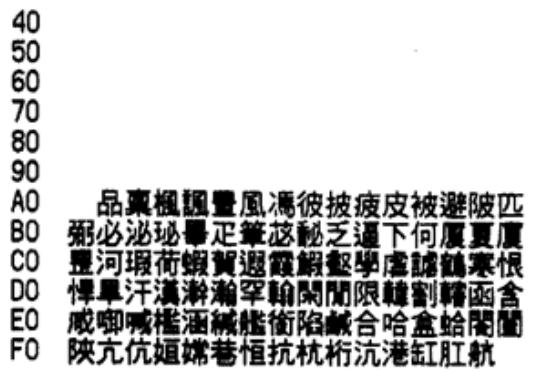
F640 - F6FF

F740 - F7FF

F840 - F8FF



F940 - F9FF

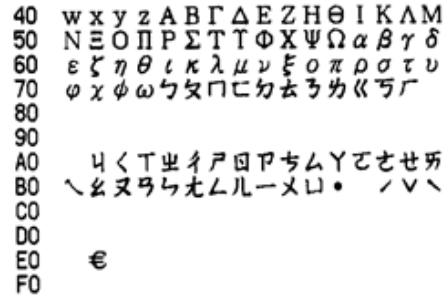


Code page 950 traditional Chinese (1 of 12)

A140 - A1FF

A240 - A2FF

A340 - A3FF



A440 - A4FF

40	一乙丁七乃九了二人儿入八几刀刁力
50	匕十卜又三下丈上丫丸凡久么也乞于
60	亡兀刃勺千叉口土士夕大女子孑孓寸
70	小尢尸山川工己已巳巾干廾弋弓才
80	
90	
A0	丑丐不中丰丹之尹予云井互五亢仁
B0	什仃仆仇仍今介仄元允內六兮公冗凶
C0	分切刈勻勾勿化匹午升卅卞厄友及反
D0	壬天夫太夭孔少尤尺屯巴幻廿弔引心
E0	戈戶手扎支文斗斤方日曰月木欠止歹
F0	毋比毛氏水火爪父爻片牙牛犬王丙

A540 - A5FF

40	世丕且丘主乍乏乎以付仔仕他仗代令
50	仙仞充兄冉冊冬凹出凸刊加功包匆北
60	匝仟半卉卡占卯卮去可古右召叮叩叨
70	叼司叵叫另只史叱台句叭叻四囚外
80	
90	
A0	央失奴奶孕它尼巨巧左市布平幼弁
B0	弘弗必戊打扔扒扑斥旦旡本未末札正
C0	母民氏永汁汀氾犯玄玉瓜瓦甘生用甩
D0	田由甲申疋白皮皿目矛矢石示禾穴立
E0	丞丟乒乓乩亙交亦亥仿伉伙伊伕伍伐
F0	休伏仲件任仰仳份企伋光兇兆先全

A640 - A6FF

40	共再冰列刑划刎刖劣匈匡匠印危吉吏
50	同吊吐吁吋各向名合吃后吆吒因回囝
60	圳地在圭圬圯圩夙多夷夸妄奸妃好她
70	如妁字存宇守宅安寺尖屹州帆并年
80	
90	
A0	式弛忙忖戎戌戍成扣扛托收早旨旬
B0	旭曲曳有朽朴朱朵次此死氖汝汗汙江
C0	池汐汕污汎汍汎灰牟牝百竹米糸缶羊
D0	羽老考而耒耳聿肉肋肌臣自至臼舌舛
E0	舟艮色艾虫血行衣西阡串享位住佇佗
F0	佞伴佛何估佐佑伽伺伸佃佔似但佣

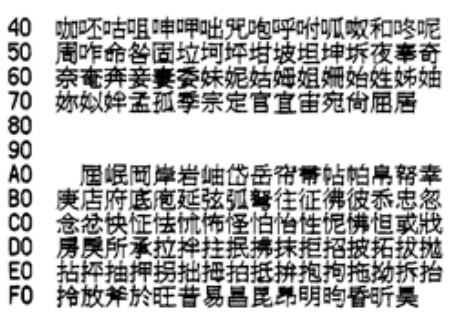
A740 - A7FF

40	作你伯低伶余佝佈佚兌克免兵冶冷別
50	判利刪刨劫助努劬匣即卵吝吭吞吾否
60	呎吧呆呃吳呈呂君吩告吹吻吸吮吵吶
70	吠吼呀吱含吟听囪困囤囫坊坑址坍
80	
90	
A0	均坎圾坐坏圻壯夾妝妒妨妞妣妙妖
B0	妍妤妓妊妥孝孜孚孛完宋宏尬局屁尿
C0	尾岐岑岔岌巫希序庇床廷弄弟彤形彷
D0	役忘忌志忍忱快忸忪戒我抄抗抖技扶
E0	抉扭把扼找批扳抒扯折扮投抓抑抆改
F0	攻攸旱更束李杏材村杜杖杞杉杆杠

Code page 950 traditional Chinese (2 of 12)

A840 - A8FF

A940 - A9FF



AA40 - AAFF

AB40 - ABFF

AC40 - ACFF

AD40 - ADFF

AE40 - AEFF

AF40 - AFFF

Code page 950 traditional Chinese (3 of 12)

B040 - B0FF

B140 - B1FF

B240 - B2FF

B340 - B3FF

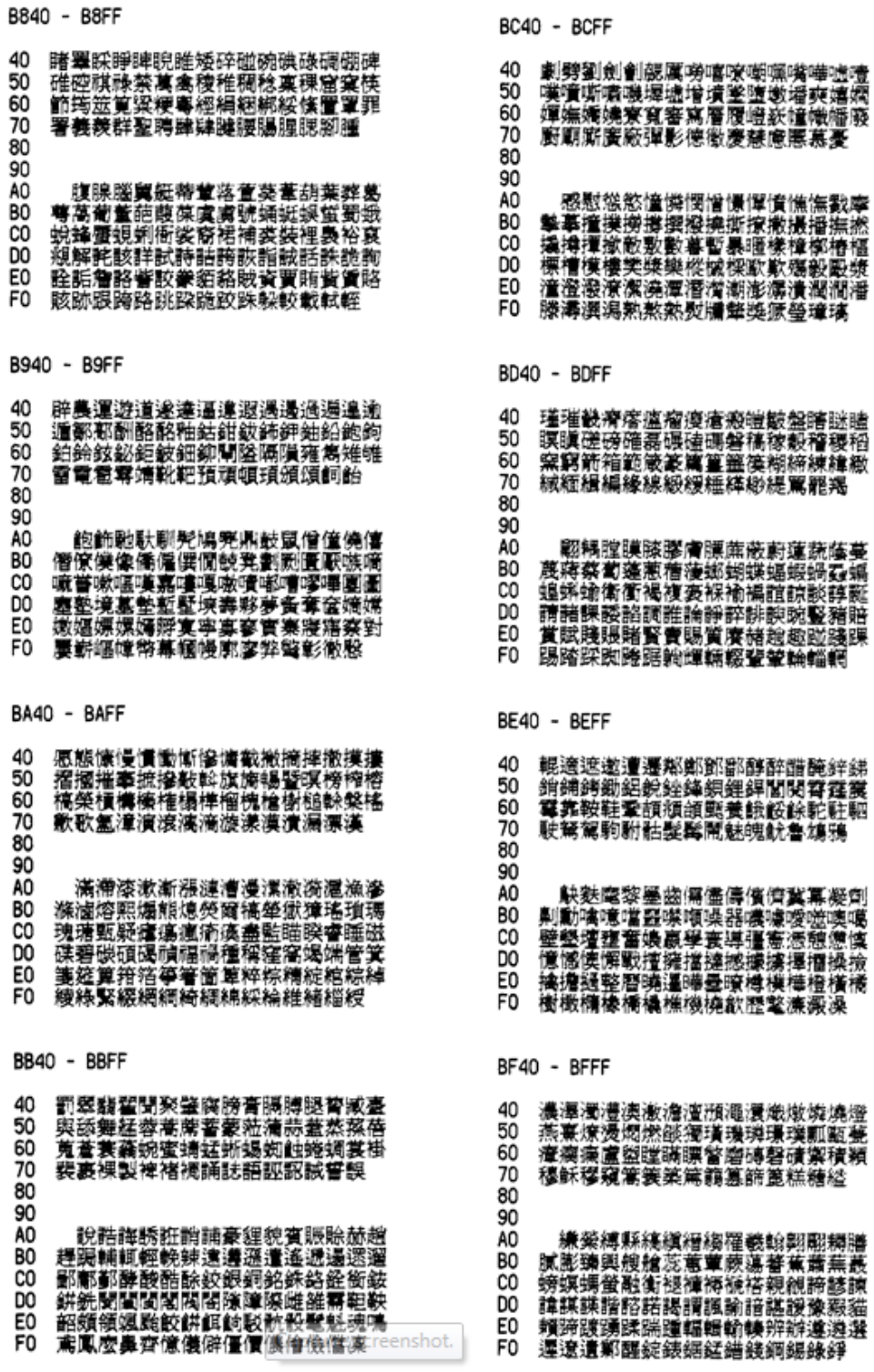
B440 - B4FF

B540 - B5FF

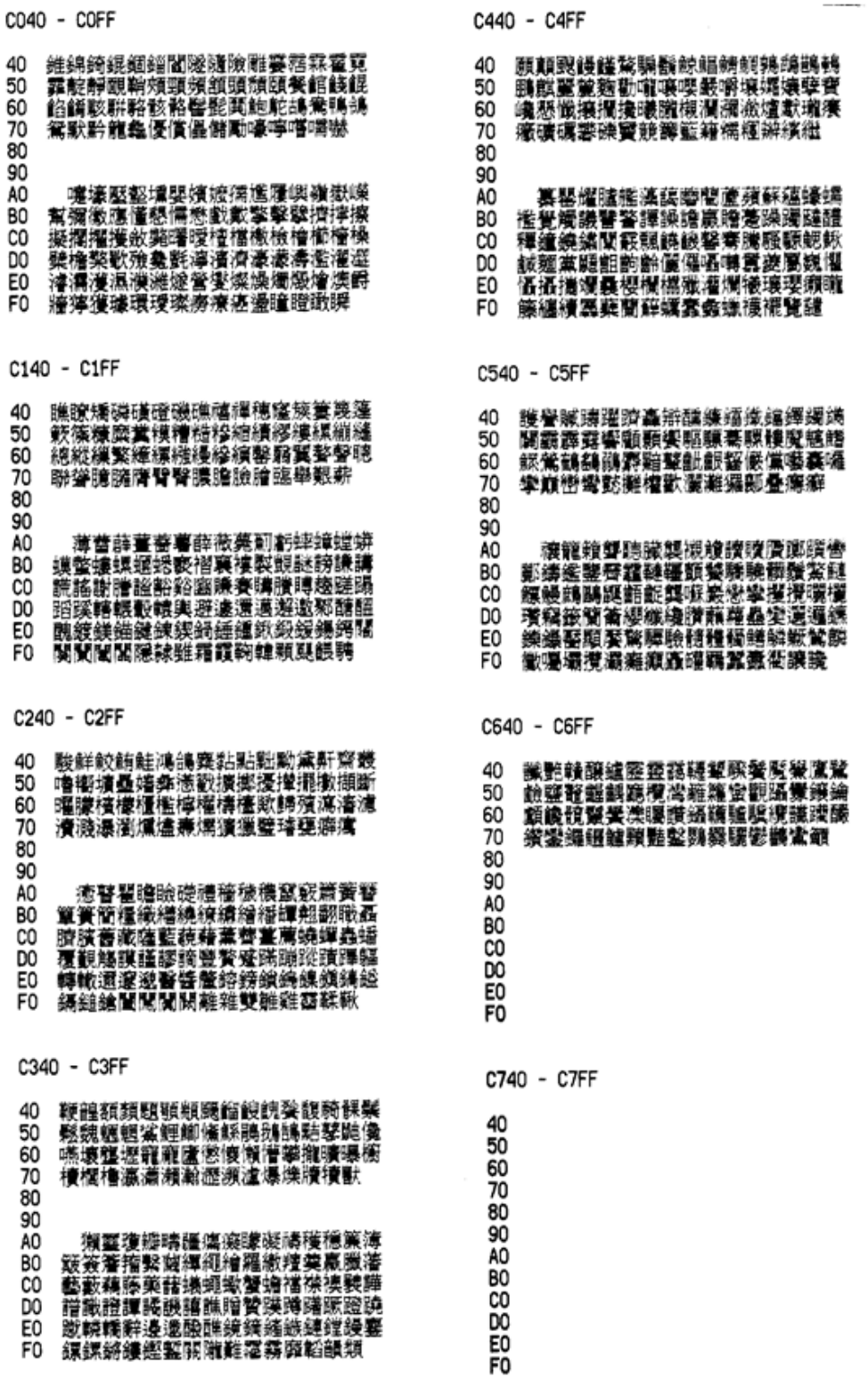
B640 - B6FF

B740 - B7FF

Code page 950 traditional Chinese (4 of 12)



Code page 950 traditional Chinese (5 of 12)



Code page 950 traditional Chinese (6 of 12)

C840 - C8FF

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

C940 - C9FF

40	乂乜凵匚厂万丌毛亍口兀中彳丐冇与
50	乳亓仂仉仈允勾卬厷勹卅夘央尐市无旻
60	毋气爿非并乩仜仩仡仝仚刊匾冊打圣
70	处夯宁宄尒尻屴屳帄庀庆忉戍扔氖
80	
90	
A0	永汎汕汐犮犯圭内妃防伎优伙仵伉
B0	伶伫价伀伝伂伬伢伾伴佰佱刘刨别
C0	劭劻匹卝呼吁囡囚圯圪均卉改奼奾奴
D0	奾奸她孖尕妒妒屹屻屾屺岨岡屾帄开庄异弯
E0	忕忔忏扜扦抌抓抪扦挖抆投抭均抦晃旮杠
F0	杌杓杶机杲杷杴氖汆汜汏汊汥汍污

CA40 - CAFF

40	汌汘牣犴犻玎甩甶乞网艸芊芳芃芀虍
50	襾邙邢邘邛邽邴阢阨阼阱阪佥侔佢佞体佤
60	佟侔侠侈侶佘佼侀侒侔侅侚剎剔剋劭
70	劬匎卤卻匿厝呹咊咙咻呔呶呅吽呀吪吭
80	
90	
A0	咔咿哅哃吩呇囧囧囵坻坽垃坋垒
B0	夆奕婩妧妠妗妡妡妦妧妍实毫椗烜
C0	岍岟岈岈吻岭邑岟岊岍岩巫帊帗庢庳庖庠
D0	庤庠弇弫彸彸忒忐忤忨忧忮忸忡忭忣
E0	忺忸忦忻怀怜戺扑扰抚抌抎扳抶扱抵
F0	扰抗捐扷抪抮扮攸旰旰昀昊昆杆杯

CB40 - CBFF

40	杙杕杭杈杷杼杭杌毒氙氚汸汗汫汕沅沈
50	沏沢沆汨沚沟沏沏沘汳汢汴沇灴灱灴
60	犰犴犽狃狆狁狌狂玕玕玓玽玗玝玝盯粤疗
70	疟卑祁耘肊肩胧肽肭彤芊芷芺苺苣芧
80	
90	
A0	芊芃芄豸迟迆邡邡邶邾邡邻阪阨阯
B0	陇弗侘佼侅饮侀侗佶侲侔侄侵佻侨侪佾
C0	侑佷侁佸侐侻佣侔侍侔佾侘佳采侻冷
D0	刵刲刨刺刱劼匆匈匋匿匾匣匾匯唏呿咁咧唌
E0	唪哂唿咀唪呬呴呦咱呯唳咄咘唿哫哈
F0	圂圉坯垹垞坫垵垌垣垮垢垭垏垭坳壶垀

CC40 - CCFF

40	垞垥婆帟妵妹姘姎姐婶姁姣姒妊姖妱
50	妽妹姊婆娑孢孳恣宕屎屇岮岟岠岵岓
60	岨岬峽峋峪峭峒峪峭峔峖峧岐岥岫岦岟
70	弭弸驸弼条徂徐徒忘怱悒怦估例悵
80	
90	
A0	恍悕怗怳怚怞恛恄恞怍恟恤恦恞恠恍
B0	恰恚悪抗拙拑抾抪拶拚拫挹挹挑拻拺挾
C0	抾敫斯旂昉畋昄昒昀昀昱昊昏昒昅昀昤
D0	盼留朊桁杭枎枎杶杻杷杓杗枋枒杶杴杽
E0	杭栝栲栘栲栜栻栻杹杴杶杲殀殉毚毂沓沆
F0	泣泮泙泺泏泖泚泯泱泃泃泗泃泆泭泲

CD40 - CDFF

40	泓泝诊怂林杼泞洞洹泳洇汩泄泩泐
50	炔炘炅炄炆炄妹炖炊畎炸犴狄狁狁狐狉
60	狜狒狍狙狌狢珲珩玭玦玢玲珏珩玲跑珼
70	眨眚畐痳症酐眨盱盱盵矸矻矶砭砥
80	
90	
A0	矽祂矧秏穸穿芳籼釘盯龛肮胯胩胝
B0	胭勒芟芜苑苞茫苹芙茅芮茎茸芙茹芟
C0	芠苓茨茳芟芍芒虰蚴虮豕迍迂迍迍
D0	迭迕迭郊郠邯邵郃陆陷阼陋陋倀倓倢倨
E0	僳倡倕倓傀傳傰倪倢倓侹倍倭倭侹侹
F0	剄剿勉勂匷瑰庠厩軍厘暄咽喃咳哏

CE40 - CEFF

40	啁荀哳咪哞呿啕哆晝訾畚嘑嗜吡哞啕
50	垵垞垟垤垌垘垴堍埰埵埡埒垚堊埜埴
60	夏奏娬娮娼娀娉姝娩娧婀娣娠婚婀婤
70	婩娂娞婀娙娶婆宪屠峻峘峂嵷峋峒
80	
90	
A0	庵峯峯峇峔崚嵣峮崤峪峭峪崮峔崏
B0	帡帢幂鬲帮屏庴庢庇庞庶庶庵幸嘉悉悉
C0	惚恔恲惰悟悃惺愔恛恫恍悾恟惚惆惚惦惴
D0	惆恮屠局鄠挍挹挥揨挺挴搕挶挌拸拶拻
E0	掁抶拺捸捐掀拻战敗哳旂翘眩晡昵昜
F0	昦晰昳晌異畚昜昧昜胍胸柩柲桦栜

CF40 - CFFF

40	桓棺柸柘柀枷棍柫柤桐梘栻枳柷梱柮
50	栻栴栲桁桱桑枭栻柆枸枯柦桐栲栻
60	栘桧桝柒欹殂畛投毖毘鼋氟豪汶洴涯
70	澳洼淆洒淩洸洶洄洙洛洚洲洓洟
80	
90	
A0	涓涛涇洨洒澔洇淖澹渺诟沂妵姐
B0	烷蒐煞疋烨烽焩舲舸粏舸犊舳舺舅猜
C0	狻猪狙狪獬狣狣狣狣狣狣狣狣狣狣狣狣
D0	玿玸珅珶玷玸珧瑚旗瓟瓻鹆畋疵疵莊婚盥
E0	眈眩昀眅眸眇盼盱矧妖砆研砒砂砐矽
F0	矽磬研砐舫种酘祆矜秕种秭秖粉铯

Code page 950 traditional Chinese (7 of 12)

D040 - D0FF

D140 - D1FF

D240 - D2FF

D340 - D3FF

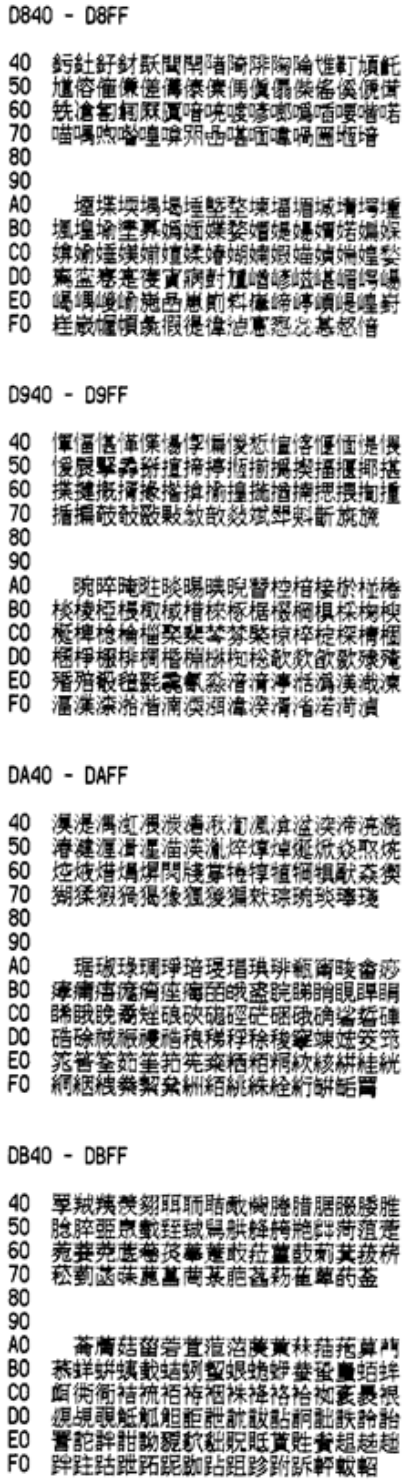
D440 - D4FF

D540 - D5FF

D640 - D6FF

D740 - D7FF

Code page 950 traditional Chinese (8 of 12)



Code page 950 traditional Chinese (9 of 12)

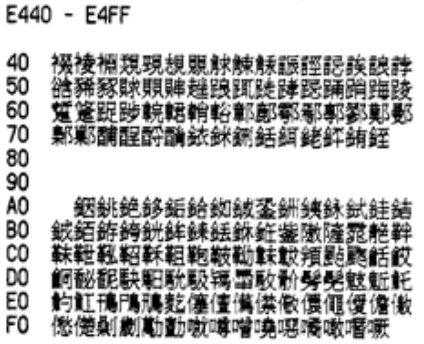
E040 - E0FF

E140 - E1FF

E240 - E2FF

E340 - E3FF

E440 - E4FF

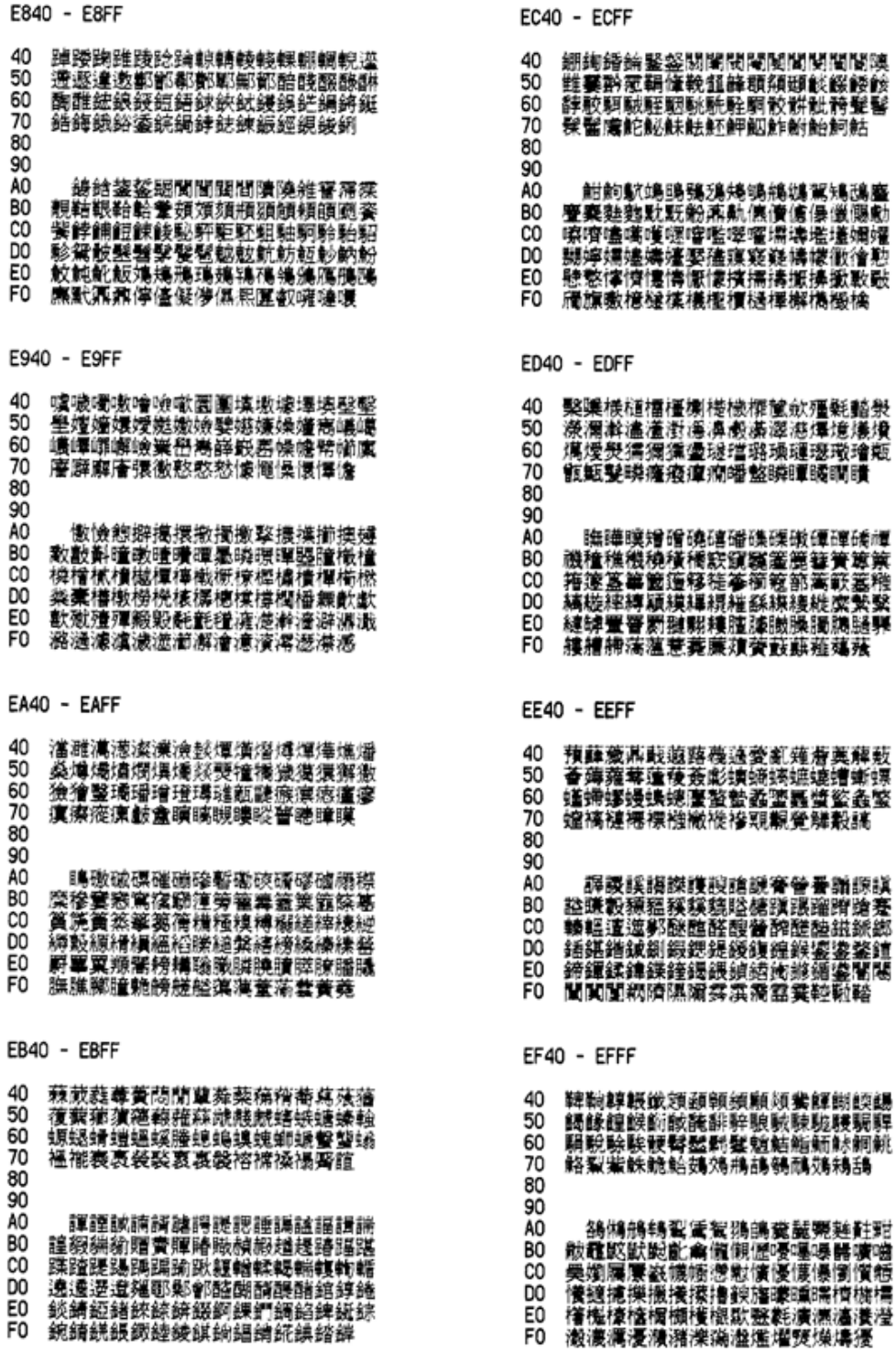


E540 - E5FF

E640 - E6FF

E740 - E7FF

Code page 950 traditional Chinese (10 of 12)



Code page 950 traditional Chinese (11 of 12)