NCR 7197 to 7199 Thermal Receipt Station Printer

Migration Guide

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Preface

Audience

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

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Revision Record

Issue	Date	Remarks
A	Mar 2017	First Issue
B	Dec 2017	• Updated the Knife Comparison section • Added notes on ESC/POS Emulation Support
C	Oct 2018	Updated the Paper Low Sensor section
D	May 2023	Converted to Guild template
E	Jul 2024	Converted to Voyix template

NCR 7197 to 7199 Printer Migration

The information provided in this publication is a summary of the important points to consider when transitioning from the NCR 7197 Printer series to the NCR 7199 Receipt Printer.

The NCR 7199 printer is a new thermal receipt printer, replacing the NCR 7197 series. The NCR 7199 printer includes the following features:

- Prints at faster thermal speeds. Depending on the application software, its printing speed can reach up to 105 lines per second.
- Prints 16 Grayscale logo with Watermark images.
- Supports all Asian fonts.
- Supports health check by Smart maintenance.
- Includes USB 2.0 High Speed Type A & Type B.
- Detects paper jams.
- Supports both front and top paper exit.
- Consumes lower power during idle time.
- Reduces footprint size by approximately 28%.

For more information, refer to the *NCR 7199 Thermal Receipt Station Printer User Guide* (BCC5-0000-5172), which is available online through the Information Products Publishing website at **https://onlinehelp.ncrvoyix.com/**.

Migration Issues

For some customers who would use the 7199 printer, no additional development may be required and the printer may be deployed as a drop—in replacement for the existing 7197 printer series.

But for all customers, a thorough review of the documentation and testing of the printer in their application environments should be planned before any assumptions are made with respect to integration effort.

This section contains information about the major migration considerations identified when transitioning from the 7197 printer series to the 7199 printer.

Power supply

The 7199 printer supports four different power modes:

- Terminal Power Low
- Terminal Power High
- 60W Power Supply
- 75W Power Supply

The 60 Watt and 75 Watt external power supplies are available as kits. To use the full print speed capability of the 7199 printer, the 75W power supply needs to be used. All power modes support full–speed printing at normal graphic density. The terminal power and 60W power supply can be used, but with diminished print speed capability when printing dense graphics. The printer must be configured through the 7199's resident firmware setup menu or by using a configuration utility that identifies the type of power supply being used.

Footprint reduction

The 7199 printer's foot print and size are reduced by approximately 21% and 28% respectively from 7197 Series II. The printer dimensions have reduced from W 145.5mm x D 186.7mm x H 144.9mm (7197 Series II) to W 132mm x D 163mm x H 125.8mm (7199 printer).

Mounting flexibility

The 7199 printer supports flexible mounting options, front paper exit on table, top paper exit on table and front exit on wall to accommodate customer counter layout or space constraint. The 7199 can be wall—mounted directly without using an additional mounting plate. Customers can purchase screws and wall plugs locally for wall mounting.

Paper low sensor

The following is a comparison between the paper low sensor of the 7197 and 7199 printers:

- 7199 printer—uses an Optical sensor. Adjust paper low detection through the 7199 Configuration Utility or Offline Printer Configuration. If using OPOS or JavaPOS, configure the paper low setting through a Profile option.
- 7197 printer—uses a Mechanical sensor. Adjust paper low detection by adjusting the screw on the sensor assembly.

Both the 7199 and the 7197 printers have the paper low default setting of 15 feet.

Paper jam detection

The 7199 printer detects paper jams by monitoring the paper jam sensor located at the backside of the paper platen. The sensor can detect and report the error during the initial jam or when paper starts to roll around the platen. Paper jam errors are reported to a system in the same manner as the paper end error.

All Asian fonts

Both the 7199 and 7197 printers support all Asian fonts (Japanese, Korean, Traditional Chinese and Simplify Chinese). In the 7197 printer, users would still need to download the font from the NCR product site and flash it to the printer.

The 7199 printer uses a configuration utility to set Asian font mode. Because of this new feature, an application needs to send a new parameter to specify which Asian font the printer uses when it is in Asian font mode

Printer model ID

The following is a comparison between the status ID of the 7197 and the 7199 printers:

- 7197 printer—returns a response to the printer status ID command with either a 7194 or a 7197 signature depending on the printer configuration setting.
- 7199 printer—returns a response to the printer status ID command with a 7199 signature, but can also be configured to return the same ID as 7197.

The response is helpful to customers who are using a 3rd—party software that checks the status ID. If used, the printer setting should be set with the same default value as the 7197 printer.

Three—colored LED indication

The 7197 Printer Series II only uses a single LED color to determine its behavior. The printer status can be determined by observing if its green LED is blinking slow or fast.

The 7199 printer uses three colored LEDs to determine its printer status:

- Green—indicates that the printer is online without errors.
- Amber—indicates that the printer is in the recoverable error condition; for example, the receipt paper is low, the printer runs out of receipt paper, the printer cover is open, and so forth.
- Red—indicates that the printer is in the unrecoverable error condition; for example, a memory error, and so forth.

Each error indication in the amber and red colors has different blink patterns that enable an operator to identify the error. For more information about the blink patterns, refer to the *NCR 7199 Thermal Receipt Station Printer User Guide* (BCC5-0000-5172).

Compatible top margin mode

The gap between the thermal head position and paper cut position of the 7199 printer is narrower compared to the 7197 printer, resulting to a narrower blank space at the top of the 7199 receipt. This narrower blank space yields a paper consumption reduction of approximately 4.8 mm. This feature is available only when the printer's Compatible Top Margin Mode is disabled.

If an existing application uses the blank space or pre—print data in the next transaction, it causes an unexpected result, such as a cut position issue caused by the gap difference. To avoid this issue, the 7199 printer secures the default gap size by using the firmware control. By default, the Compatible Top Margin Mode is set to *Enable*, and must not be changed so that the issue can be prevented.

Built—in cable management

The following is a comparison between the cables of the 7197 and the 7199 printers:

- 7197 printer—has an added cable restraint connected by a screw adjacent to the cable ports.
- 7199 printer—has an integrated cable restraint positioned on both sides (left and right), separating the power cable and the LAN/USB cables.

Power cable cradle

The following is a comparison between the power cable cradle of the 7197 and the 7199 printers:

- 7197 printer—can have power cable mis–orientations.
- 7199 printer—can prevent power cable mis–insertion through the self–orientation capability of the cradle.

Print head replacement

The print head of the 7199 printer can be easily replaced. To replace the print head, do the following:

1. Push down the lower paper guide edges until the paper guide flips.
2. Pull both print head latches to detach the print head from the main frame.
3. Pull the print head out until it separates with the main frame and detach the flex cable connector.

Top cover

The following is a comparison between the 7197 and the 7199 printers when opening the top covers:

- 7197 printer—its latches are located in the left and right sides. Its user would need to open the top cover using both hands.
- 7199 printer—its latches are located at the middle of the top cover, almost near the printer mouth. Its user would only need one hand to open the top cover.

Knife

The following are comparisons between the knife of the 7197 and the 7199 printers:

	Life	Knife Type
7197	About one million cuts	Scissor type **Note** For partial cut, it leaves an uncut paper that measures **0.08 ± 0.05 in.** (2.0 ± 1.2 mm) at the right side of the receipt.
7199	About two million cuts	Guillotine type **Note** For partial cut, it leaves an uncut paper that measures **0.08 ± 0.05 in.** (2.0 ± 1.2 mm) at the center of the receipt.

Diagnostic mode

The following is a comparison between the 7197 and the 7199 printers on entering the diagnostic mode:

- 7197 printer—enters the diagnostic mode by setting dip–switch positions and then powering on the printer while holding the feed button.
- 7199 printer—enters the diagnostic mode by powering on the printer while holding the feed button. There are no dip–switches on the 7199 printer.

Notes

This section contains additional notes about the 7199 printer components.

Printer drivers

An NCR OPOS driver (Service Object) was released for the 7197 Native Mode to support printer functionality included in the standard OPOS specification. The 7199 Native Mode is only supported with NCR OPOS Retail Controls 3.x. This mode can be identified by a Profile

Programmatic ID of NCROposSO.POSPrinter. The 7199 mode is not supported in the legacy OPOS 2.x implementation which is identified with a Programmatic ID of NCRPrinter.POSPrinter.

The 7199 Model selection is available only in the OPOS versions of Retail Platform Software for Windows (RPSW) versions 4.2.1.1 and 5.2.1.1 or later. The NCR OPOS Service Object does not permit the application to write to the user–defined memory that is now resident on the 7199 printer. This feature means that a customer checking the availability of 64KB of space on the printer for enhancements, such as printer–resident electronic journal cannot take advantage of this feature using NCR OPOS.

If a customer plans to continue using their current release of the NCR OPOS Service Object, the OPOS Profile for one of the single sided receipt printer models that the 7199 is compatible with that existed in previous releases of software 7193, 7197, 7197 Series II. If the application is to be modified to take advantage of the 7199 features, the latest version of NCR OPOS should be installed and the 7199 should be selected as the printer type.

Performance

The 7199's improved performance features a faster thermal print mechanism, where the application and driver sends data to the printer, and the speed of communication is increased. The 7199 printer is capable of printing text at up to 105 lines per second, 17 percent faster than the 7197 Printer Series II and more than 17.5 times faster than most impact printers. Older applications originally developed for slower impact printers often send information to the printer line–by–line. On slower printers, waiting until the end of the transaction before starting to print the receipt would have added a significant amount of time to the length of the transaction. Faster thermal printers can now produce the same receipt in seconds (adjustments to the NCR OPOS Asyncblock Parameter maybe required to achieve maximum print speed).

Unsolicited Status message

The Unsolicited Status Update (USU) is designed to provide updated state information from the printer to the host PC without requiring the host to request the state information. This design permits applications or intermediate drivers such as OPOS or JavaPOS Control Objects to monitor the state of the printer, and take appropriate action without periodically polling the printer to determine the current state of the printer. This function is available on the HID USB, the ION USB and the RS–232 interface.

Health check

The 7199 printer has the ability to check the health condition of the thermal head, the feed motor and the sensors together with the Smart Maintenance Application. There are two ways to check the printer's health:

1. Direct check—Smart Maintenance Application directly gets the maintenance information through the interface that is connected to the printer, and checks the health condition.
2. Indirect check—Smart Maintenance Application scans QR bar code consists of the maintenance information printed by the printer, and checks the health condition.

USB Type–B support

The 7199 supports NonION (HID and Printer Class) USB and ION USB. The printer must be configured through the 7199's resident firmware setup menu to activate this interface. Default is ION USB.

The 7199 supports USB Type–B 2.0 High Speed mode and Full Speed mode. Default is Full Speed mode which has less power consumption while the printer is in idle condition.

USB Type–A support

The 7199 supports USB Type–A mass storage class. This interface is used to update the firmware, to configure the printer, and to enable ECO functions using USB memory device in off–line mode.

When the 7199 printer is connected to a system through the USB–Type–B interface, USB Type–A interface is not available even though a USB memory device is installed. USB Type–B must be disconnected when the firmware and the settings are to be updated through USB Type–A.

16 Grayscale image printing or watermark printing

The 7199 supports printing a 16 grayscale image pre—registered into the memory. Registering 16 grayscale images are available on both RAM and the flash memory up to 256K bytes. To register and print 16 grayscale images, an application needs to send the new commands.

The 7199 also supports Watermark functionality. The 16 grayscale images registered into the memory can be used as Watermark. To enable Watermark and specify the 16 grayscale image file, an application needs to send the new command.

Images registered in the flash memory by legacy logo commands supported in both 7199 and 7197 Series II are eliminated once a new 16 grayscale image is registered. To use these functions, the NCR OPOS software must be updated with the versions that natively support the 7199 printer, and profiles created with the configuration of Grayscale and Watermark.

Improvement in Energy Efficiency

To improve its Energy Efficiency, the 7199 printer supports the following modes:

- Standby Mode—By default, this mode is set to *Enable*. Whenever the printer is in idle condition, it goes to Standby Mode which reduces the power consumption. It returns to the normal mode as soon as print data is received. This function is automatically controlled by the printer. A running application should work without being affected. The power consumption of the 7199 in Standby Mode is improved by 30 % compared to the 7197 Series II.
- Power—Off Mode—By default, this mode is set to *Disable*. The power consumption of the Power—Off Mode is almost the same as the power—off condition. To activate this mode, the printer must be configured through the 7199's resident firmware setup menu. Once it is set up, the printer goes to the Power—Off mode when the specified time passes the idle condition. To exit this mode, an operator needs to press the form feed key. From an application, this mode has the same condition as the printer power—off condition.

ESC/POS Emulation support

The 7199 supports ESC/POS emulation mode. To activate this mode, configure the printer through the 7199 diagnostic setup menu or configuration command. The default emulation mode is NCR 7199 emulation mode.