

NCR RealPOS 7197 Printer

Release 1.0 to Series II

Migration Guide



B005-0000-2090

Issue A

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Revision Record

Issue	Date	Remarks
A	Aug 2011	First issue

NCR RealPOS 7197 Release 1.0 to Series II Migration Guide

Introduction

The following information is provided as a summary of important points to consider when transitioning to the NCR RealPOS 7197 Series II models from the NCR 7197 Release 1.0 models:

Release 1.0 Models:

- 7197-1001-9001 - Receipt Printer, RS232/USB Dual Interface, Beige
- 7197-2001-9001 – Receipt Printer, RS232/USB Dual Interface, Charcoal

Series II Models:

- 7197-5001-9001 - Rcpt Printer, RS232/USB Dual Interface, Beige, SII
- 7197-6001-9001 – Rcpt Printer, RS232/USB Dual Interface, Charcoal, SII
- 7197-6301-9001 – Receipt Printer, Ethernet, Charcoal, SII



The NCR RealPOS 7197 Series II Printer is a new thermal receipt printer replacing the current NCR 7197 printer. Series II includes all the proven features/functionality of the current 7197 such as the auto-sensing RS232/USB interface, optional two color print, paper low and paper out sensors, and drop in paper loading along with new functions being introduced with Series II:

- Faster thermal print speeds up to 90 lines per second, 300mm per second or 12 inches per second. Speed depending on the application software.
- Additional Flash ROM Memory increase (16M bits flash to 32M bits flash). No change in user defined area i.e. logo, macro, user defined font, etc.
- Unicode font support
- GS1 Barcode Support and * QR Barcode Support
- USB HID/Printer Class support
- Ethernet support
- Thermal Head failure detection
- Vertical mount paper low sensor (Paper low detection in vertical mount position)
- High Speed line synchronized printing
- Reduction in Power Consumption

* Post Release – more information to come.

Detailed information can be found in the NCR RealPOS 7197 Series II Printer Owner's Guide (B005-0000-2068) and Service Manual (B005-0000-2069) available online via the Information Products Publishing web site at www.info.ncr.com.

7197 and 7197 Series II Comparison

Feature	7197 R1 Receipt	7197 Series II Receipt	
2ST Support	No	No	
Print Method	Thermal	Thermal	
RoL media support	No	No	
Maximum Receipt Print Speed (LPS)	170mm per sec. 50 lines per sec.	300mm per sec. 90 lines per sec.	Existing customer will obtain print speed improvements; however, how much of an improvement will depend on how the customer's application sends the data and the interface used.
RS-232 I/F	Standard	Standard	
USB I/F (IO Networks)	Standard	Standard	
RS-485 I/F	Not supported	Not supported	
IBM 4610 emulation	No	No	
Ethernet	No	Yes	Windows support only. No OPOS or JavaPOS support at this time. Current Windows customer would not have to make changes to application. Direct Write customer would have to change from RS232 to a LAN TCPIP interface.
HID USB	No Note: Could be made available via a SCER.	Yes	Minimum RPSW versions required: RPSW 4.0.1.0 RPSW 3.1.2.2 RPSW 3.0.3.9 RS232C user : No impact ION USB user : No impact Non ION user : has to configure the printer to non ION because the default setting is ION.
Double-byte Character Support	Yes	Yes	
Unicode Mode support	No	Yes	RPSW Delayed release – Release /Support date is unknown at this time.
Barcode Generation	UPC-A, UPC-E, JAN 13, JAN 8, Code 39, Code 128, Interleave 2 of 5, Codabar, Code 93, PDF 417	GS1, QR, UPC-A, UPC-E, JAN 13, JAN 8, Code 39, Code 128, Interleave 2 of 5, Codabar, Code 93, PDF 417	To Obtain support for the GS1 and QR databar, the Minimum RPSW versions required: RPSW 4.0.1.0 RPSW 3.1.2.2 RPSW 3.0.3.9
Cash Drawer Port	Yes	Yes	
Dot Pitch	203dpi	203dpi	
Power Option	24V – Terminal Ext. 75Watt Ext.	24V – Terminal Ext. 75Watt Ext.	

Feature	7197 R1 Receipt	7197 Series II Receipt	
	Power Supply	Power Supply	
Low Power Consumption mode	Not supported	Yes	New Modes: Sleep (default) and Power off mode. Data will wake it up while in sleep mode. Feed switch will turn it back on when in power off mode. Data not received if printer is turned off.
Paper Size Supported	58mm or 80mm	58mm or 80mm	
Various Sensors / Controls	Paper Low, Paper out, cover open, Paper Feed, etc.	Paper Low, Paper out, cover open, Paper Feed, etc.	No Application change required to take advantage of the vertical mount paper low status function.
Thermal Print Head failure detection	Not supported	Yes	Minimum RPSW versions required: RPSW 4.0.1.0 RPSW 3.1.2.2 RPSW 3.0.3.9 Need to configure the printer to enable. Also the application needs to be modified to send the head failure detection command and to check the error status.
MICR	N/A	N/A	
Drivers	OPOS, JavaPOS for Windows and Linux, and TAPS for DOS	OPOS, JavaPOS for Windows and Linux, USB printer protocol for Windows and TAPS for DOS	
Operating Systems	Windows XP Professional, Windows XP Embedded, Windows 2000, Windows NT, WEPOS, POSREADY 2009	Windows XP Professional, Windows XP Embedded, Windows 2000, Windows NT, WEPOS, POSREADY 2009	
Cabinet Color	Beige, Charcoal	Beige, Charcoal	

Migration Information

All customers should plan a thorough review of the documentation and testing of the printer in their application environment before any assumptions are made with respect to integration effort.

For some customers, no incremental development may be required and the printer may be deployed as a drop-in replacement for the existing 7197 Release 1.0.

Below is high level information on the new features being offered on the 7197 Series II and migration considerations when transitioning from the 7197 Release 1.0 to 7197 Series II.

Existing customers transitioning to the Series II would have to either change their application, firmware or software to obtain support for the new functionality offered in Series II.

Product ID's

Current Model	New Model	Description
7197-1001-9001	7197-5001-9001	Receipt Printer, RS232/USB Dual Interface, Beige, Series II
7197-2001-9001	7197-6001-9001	Receipt Printer, RS232/USB Dual Interface, Charcoal Gray, Series II
N/A	7197-6301-9001	Receipt Printer, Ethernet, Charcoal Gray, Series II

Housing

The 7197 Series II is 4.4mm longer than the current 7197; however, the bottom cover is designed with a tapered inwards profile to keep the same foot print as the current 7197, which means the Series II will fit into the current POS terminal integration trays.

The ID drawing below provides a summary of the dimensions for the 7197 Series II.



- Series II is ~ 12.44mm/.5inches lower in height than R1. The current 7197 is 157.42mm/6.2 inches (*from the highest point of the printer*), and Series II is 144.90mm/5.7 inches.
- The Series II is ~ 4.42mm/0.17inches longer than the current 7197. The current 7197 is 182.22mm/7.17inches, and Series II is 186.70mm/7.35inches.

- Series II supports the same cables currently supported on the 7197 Release 1.0; however, a new simplified cable retention method has been added to the 7197 Series II printer.



Current Cable Retention Method



Series II Cable Retention Method

Mechanical Changes

The majority of the mechanical changes made were made in order to support the higher speed of the Series II models:

- New thermal head
- Larger motor
- New PCB including faster CPU and new Memory chip

Performance

The 7197 Series II is capable of printing text at up to 90 lines per second or 12 inches per second. This is approximately forty percent faster than the current 7197.

The actual solution throughput is dependent on the speed of the software on the system unit, the communication protocol bandwidth, the available power supplied by the system unit and dot density of the data being printed.

In order to take advantage of the speed of Series II, the application must send all print data to the receipt printer as a continuous stream of data. Adjustments to the NCR OPOS Asyncblock Parameter maybe required to achieve maximum print speed.

USB or the highest baud rate available should be used to achieve maximum print performance.

Failure to use the USB or highest baud rate and sending the continuous data, could result in repeated stop-and-go motion of the printer mechanism.

Power Supply

The 7197 Series II supports the same 75 Watt power supply currently supported on the Release 1.0 models:

- 7167-K410 - 75W printer power supply
- 7167-K411 – 75W printer power supply with US power cord

The 75 Watt power supply is the standard power supply for the 7197 Series II. In order to utilize the full print speed capability of the 7197 Series II, the 75-Watt power supply needs to be used.

55 Watts is the standard when acquiring power from the terminal. A 55 Watt power supply can be used, but expect diminished print speed capability when printing dense graphics. This is no different from R1.

The printer must be configured through the 7197 Series II resident firmware setup menu to tell the type of power supply that is being used.

Improvement in Energy Efficiency

To improve the printer's Energy Efficiency, the 7197 Series II provides the following power consumption modes:

1. *Sleep/Standby Mode (Default setting)*

When ever the printer is in idle condition, it goes to standby mode which reduces the power consumption. It will return to the normal mode as soon as print data is received. This function is automatically controlled by the printer. The customer's application should work without any influences.

Note: Because OPOS/Java POS polls the printer when enabled, an OPOS/Java POS Application must disable the printer when not in use to take advantage of this feature.

2. *Power-Off Mode*

The power consumption of Power-Off Mode is almost same as the power-off condition. To activate this mode, the printer must be configured through the 7197 Series II resident firmware setup menu. Once it is setup, the printer goes to the Power-Off mode when the specified time configured passed in idle condition. To exit this mode, an operator needs to press the form feed key.

Note: Because OPOS/Java POS polls the printer when enabled, an OPOS/Java POS Application must disable the printer when not in use to take advantage of this feature.

From an application's standpoint, it is same condition as the printer power off condition in this mode. Data is not received if printer is turned off.

Receipt Print Modes

Being able to print at the higher speeds has its advantages; however it also has a slight impact on print density. When printing at the high speeds of 80+ lines per second, the print sharpness is comparable to printing at 52 lines per second; however, due to the speed of the printer, customers should expect lower density printing. Slightly lower density has no impact on the longevity of the text on the media.

The 7197 Series II provides two receipt print modes:

- High Speed Print Mode (**12ips**) (Default setting) – Slightly lighter print w/ similar character sharpness as R1.
- High Quality Print Mode (**8ips**) – Same print quality as R1.

Receipt Synchronization Modes

The 7197 Series II provides several types of Receipt Sync. Modes:

- **Disable Receipt Sync (Fastest speed)** - Same as default on 7197 R1. This is the default setting for 7197 Series II.
- **Synchronization Mode 1 - Enabled receipt sync** - wait for status response. Same option as “Enable Sync” on 7197 R1. If application does not feed printer with data fast enough, it will cause printer to “stutter”.
- **Synchronization Mode 2** – Smooth printing for applications that do not send the data fast enough to keep up with the printer will result in slightly slower print than Mode 1.
- **Synchronization Mode 3 - Enabled receipt sync w/print line integrity** – slowest print mode - Intended for use by application that need to guarantee each print operation has completed so an individual operation can be resent after an error, instead of reprinting entire receipt.

Memory

ROM/Flash Memory increases from 16M bits flash to 32M bits flash in Series II. The total flash memory size increased, but the size of the user defined area, for logo, macro, user defined font, user storage, is the same as R1.0: The flash memory of R1 is 2MB, and it is almost fully occupied as follows:

1. FW program area
2. SBCS/DBCS font area
3. Logo Storage
4. User Define Fonts Storage
5. User Storage (Macro etc)

The flash memory of Series II is 4MB. In addition to the above usage, the additional 2MB is used as follows:

1. FW program area for new functions (Energy save, Unicode support, Head Failure Detection, RSS barcode, etc...)
2. FW program area for Ethernet Control
3. Electronic journal (future enhancement)

Wall Mount (7197-K100) and Paper Low Detection

The 7197 R1 cannot detect the paper low correctly in the wall mounting position. Therefore it must be disabled in this position.

A new, optional, wall mount kit has been released for the 7197 Series II models only, which includes mounting plate, screws, wall plug, and paper guides to secure the printer in a vertical position as well as to ensure paper low detection works correctly.

No application change required if the customer's application currently supports paper low.

This kit is not supported on the 7197 Release 1.0 models.

58mm Adapter

The currently released 7167-K058 is not supported by the 7197 Series II models. This kit only supports the Release 1.0 models. A new kit is being released to support the 2ST models and Series II models, 7168-K059.

K059 comes ready to support the 7168 and 7198 printers; however, the tab circled below has to be broken with a pair of pliers in order to be used in the 7197 and 7167 Series II models:



GS1 Data bar Support

GS1 Data Bar symbols can carry more information and identify small items than the current EAN/UPC bar code. GS1 DataBar enables GTIN identification for hard-to-mark products like fresh foods, jewelry and do-it-yourself hardware products and can carry GS1 Application Identifiers such as serial numbers, lot numbers, and expiration dates.

The 7197 Series II supports the below GS1 Data bar family:

- GS1 DataBar Omnidirectional
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional
- GS1 DataBar Limited
- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked

New OPOS/JavaPOS version required to support this new barcode in applications that use OPOS/Java POS.

Printer Drivers

TAPS - No changes were made with TAPS to support the new 7197 Series II printer. There is no 7197 TAPS driver. NCR Engineering has certified the 7197 to run in 7193 Emulation Mode only with the latest release of TAPS. Results when operating the 7197 in 7193 Emulation mode with an earlier release of TAPS are unpredictable; technical support from NCR may be limited and available only on a T&M basis. TAPS does not allow modification of the application to send new 7197 commands, so a customer using TAPS may only take advantage of these features by updating both application and drivers (using NCR OPOS or writing directly to the printer).

NCR OPOS - An NCR OPOS driver (Service Object) was released for the 7197 Native Mode to support printer functionality included in the standard OPOS specification. The NCR OPOS Service Object does not support polling of the printer for resident diagnostic tallies (the NCR OPOS Sender Agent actually provides logs and tallies to the Logs and Tallies Agent without querying the printer).

- The NCR OPOS Service Object does not allow the application to write to user-defined memory resident now on the 7197 printer. This means a customer eyeing the availability of 64KB of space on the printer for enhancements such as printer-resident electronic journal can not take advantage of this feature using NCR OPOS.

If the application is to be modified to take advantage of the 7197 Series II features in 7197 Native Mode the latest version of NCR OPOS should be installed and the 7197 should be selected as the printer type.

Minimum RPSW versions required to take advantage of the 7197 Series II features:

RPSW 4.0.1.0

RPSW 3.1.2.2

RPSW 3.0.3.9

Thermal Head Failure Detection

The 7197 Series II provides a Thermal Head Failure Detection Function. This function is optional and is used to detect the thermal head failure as earlier as possible.

There are two ways to enable this function. One is the power-on auto detection and the other is manual detection by command:

1. *Power-on Detection*

The printer must be configured through the 7197 Series II resident firmware setup menu. Once it is configured, the printer executes the detection whenever it is turned on. The customer's application will need to be modified to check the error status after the detection during the boot sequence.

An application can get the result by either Real Time Status Transmission or Unsolicited Status Update.

2. *Software Status Detection*

The customer's application can execute the thermal head failure detection by the "Execute Head Failure Detection command". The customer's application would need to be modified to send the head failure detection command and check the error status.

Note: NCR OPOS/Java POS provides registry settings to enable these features. They are enabled and disabled together. Errors are reported using currently defined error codes.

Unicode(UTF-16) Mode

The Unicode standard is an encoding scheme used to uniquely identify characters, independent of language, region or code page.

The 7197 Series II printer provides Unicode(UTF-16) Mode support. This new functionality will make it easier for applications *already using* unicode. Unicode would give them the same string for all peripherals and they would not have to translate to the code page before sending to the printer as they do today.

The printer must be configured through the 7197 Series II resident firmware setup menu or Select or Cancel Unicode(UTF-16) Mode command to activate this mode. Default is Code Page mode, so it should not affect existing application.

Existing customers wanting this new functionality would have to make an application and f/w change.

Operating System supported HID and Printer Class USB support

The RealPOS 7197 Release 1.0 models support USB via a virtual serial port emulation driver that had to be installed on the terminal. Series II also supports this interface but in addition supports native operation system for USB.

The native OS interfaces are HID and USB printer class. Selected by printer configuration.

NCR Retail Controls 3.x is required for OPOS use of the HID interface.

For a Direct Write application, use of the HID interface requires the use of Windows Win32 HID API.

Ethernet support

A separate model has been created to support the Ethernet interface. This model only supports Ethernet. It does not contain a dual interface board as with the standard models.

Windows is the only OS for which an NCR supplied driver exists that supports the Ethernet model. No OPOS or JavaPOS support at this time.

Current Windows customers, using Win32 API in their application, would not have to make changes to application; however, a direct write customer would have to change from RS232 to a LAN TCPIP interface.

Need to configure the printer based on the customer network environment.

Also need to configure application to support Ethernet.

The Ethernet interface uses either 10BASE-t, 100BASE-TX protocol. The Ethernet version of the 7197 Series II offers the web configuration which configure the Ethernet settings via Internet browser.

DHCP or Manual assignment of IP Address is controlled by DIP switch setting:

Both OFF – Manual

Both ON – DHCP

For additional information on Ethernet, please see the RealPOS 7197 Series II Owner's Manual.

Cutter Buzzer Function – selectable tone

The 7197 Series II supports the Cutter Buzzer function. The printer must be configured through the 7197 Series II resident firmware setup menu to activate this function. The default is No buzzer with cutting.

Once this function is activated, the printer sounds the buzzer when it cuts paper. No application change is required to support this feature.

This feature can be configured through OPOS/Java POS when using updated OPOS / Java POS software that supports 7197 Series II.

Minimum RPSW versions required:

RPSW 4.0.1.0

RPSW 3.1.2.2

RPSW 3.0.3.9

Questions and Answers

1. Can I upgrade my current 7197 model with the Series II firmware and obtain the new functionality?

Answer: No, the Series II firmware is not compatible with the existing hardware.

2. Will my 7197 Series II model fit into my current NCR RealPOS terminal integration tray?

Answer: Yes

Is the 7197 Series II a drop in replacement for existing 7197 customers? Yes

If yes, what additional functionality will I have without making any software or f/w changes?

Answer: slight speed increase, and new look and feel

3. Has the service strategy changed with the release of Series II?

Answer: No, the service strategy remains the same. The whole unit is the recommended spare part.

4. Can new service old in regards to spare parts?

Answer: Yes, but old does not service new.

5. Will the 7197 Series II firmware support all the interfaces i.e. I/ON USB, RS232, Ethernet, HID?

Answer: Yes

6. Is the new Ethernet Model "Auto sensing"?

Answer: No, the new Ethernet Model has only one interface.

7. Will there be a separate Windows driver to support Series II?

Answer: No

8. Does the 7197 Series II models support the currently released cables and power supplies?

Answer: Yes

9. Does the 7197 Series II models support the currently released 58mm adapter?

Answer: No, a new adapter is being released for the Series II products, 7168-K059-V001. Please see the Printer Ordering and Configuration document for additional information.

10. What can I expect with the higher speed printing?

Answer:

11. Will I obtain the higher speed with no changes to my application?

Answer:

12. Is the 7197 Series II Energy Star Compliant?

Answer: No, in order for the printer to be considered Energy Star Compliant, it would have to be bundled with a power supply. As you know, the power supply must be ordered separately.

13. What is the OPOS version #'s that support the new functionality?

Answer: Minimum RPSW versions required:

RPSW 4.0.1.0

RPSW 3.1.2.2

RPSW 3.0.3.9

Note: No OPOS support for Ethernet at this time.

14. Should I expect the same print quality as Release 1.0 from the Series II models?

Answer: Only if the printer is set to "High Quality Mode". In this mode, the performance will be ~ 8ips. In "High Performance Mode", the print density is a little lighter and the speed can be as high as 12ips.

15. What collateral /information is available on the Series II product:

Answer: Owners Manual, Service Guide, PIM, Sales Training, Migration document, Competitive Analysis, Datasheet, and Ordering and Configuration document.