Kit Instructions

Imaging Assembly (Compact Scanner)

7878-K153
Issue A

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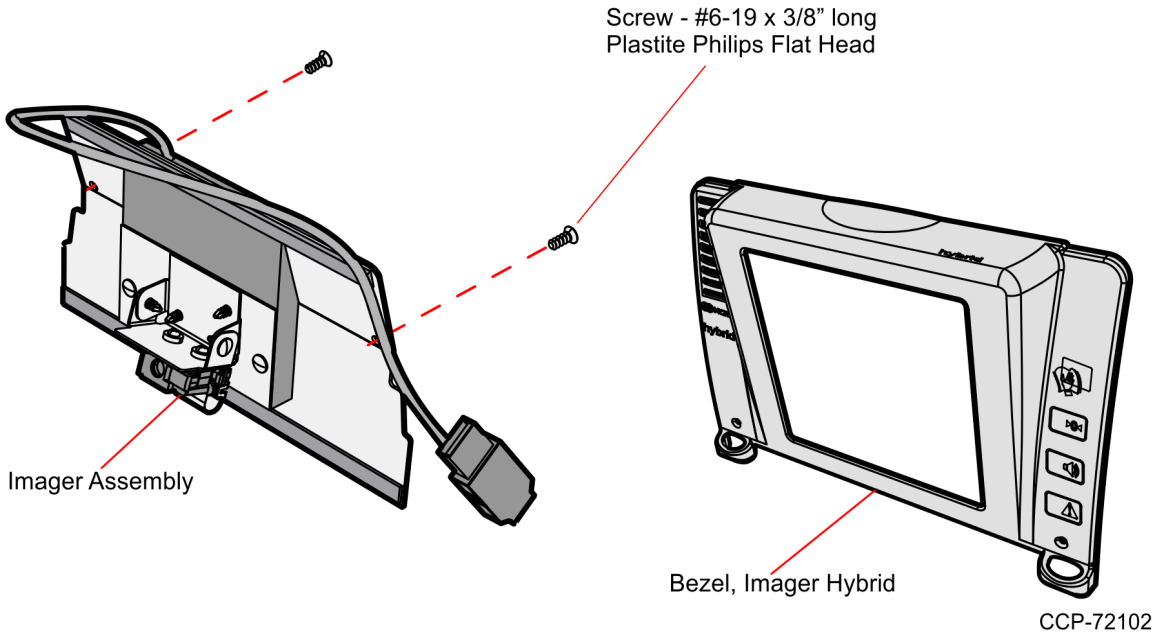
Revision Record

Issue	Date	Remarks
A	Aug 2017	First Issue

Imaging Assembly (Compact Scanner)

This Imaging Assembly (7878-K153) provides imaging capabilities for the NCR RealScan 78 Compact Bi–Optic Scanners. This document explains how to install the kit on the 7878 scanner.

Kit Contents



Tools Needed

- Phillips Screw Driver #2
- USB Flash Drive

Software Tools Needed

- Firmware — 497-0472618 or later versions
- NCR Scanner Flash Drive Prep Tool or NCR Scanner Flash Tool

Note: These tools are available for download at the NCR scanner website *http://www5.ncr.com/support/support_drivers_patches.asp?Class=retail_RealScan*

Installation Procedures

Warning: Disconnect the AC power cord before disassembling the Scanner.

These are the general steps to install the Imaging Assembly to the NCR RealScan™ 78 Bi–Optic Scanner (7878) :

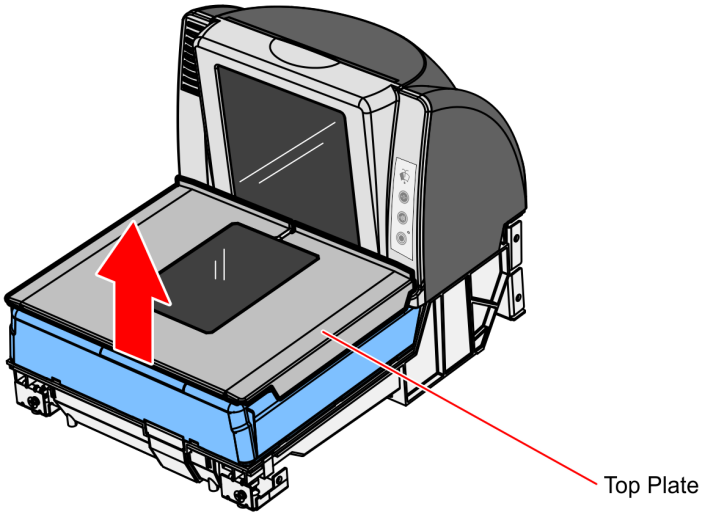
1. Remove the Top Plate.
2. Remove the Front Bezel.
3. Remove the Tower Cover.
4. Install the Imaging Assembly.
5. Re–install the Tower Cover.
6. Install the New Hybrid Front Bezel.
7. Reinstall the Top Plate.

For detailed instructions, refer to the succeeding sections.

Remove the Top Plate

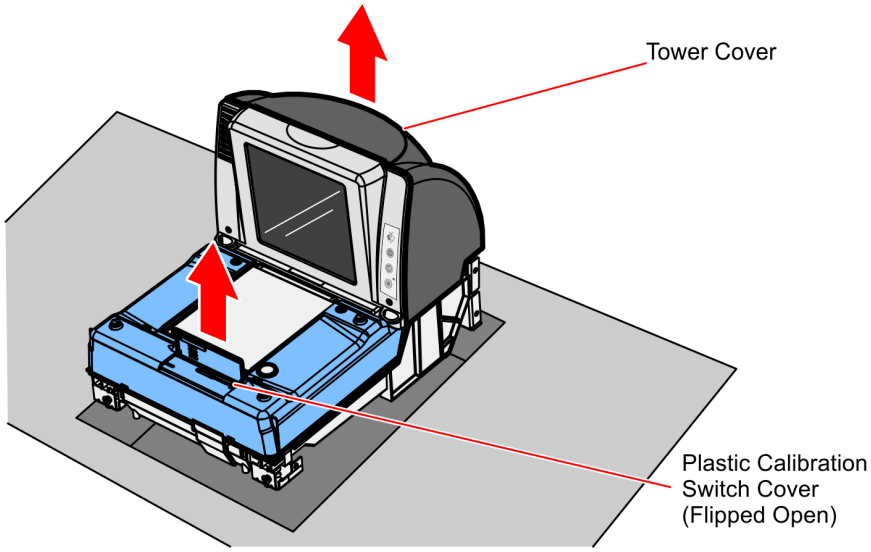
To remove the Top Plate, do the following:

1. Hold the front edge of the Top Plate until your fingers are underneath it.
2. Lift the Top Plate to remove it from the Scanner.



CCP-72103

3. If the Scanner is in a Checkstand, lift out the Scanner by grasping the back of the Tower Cover with one hand and the plastic Calibration Switch Cover with the other hand.



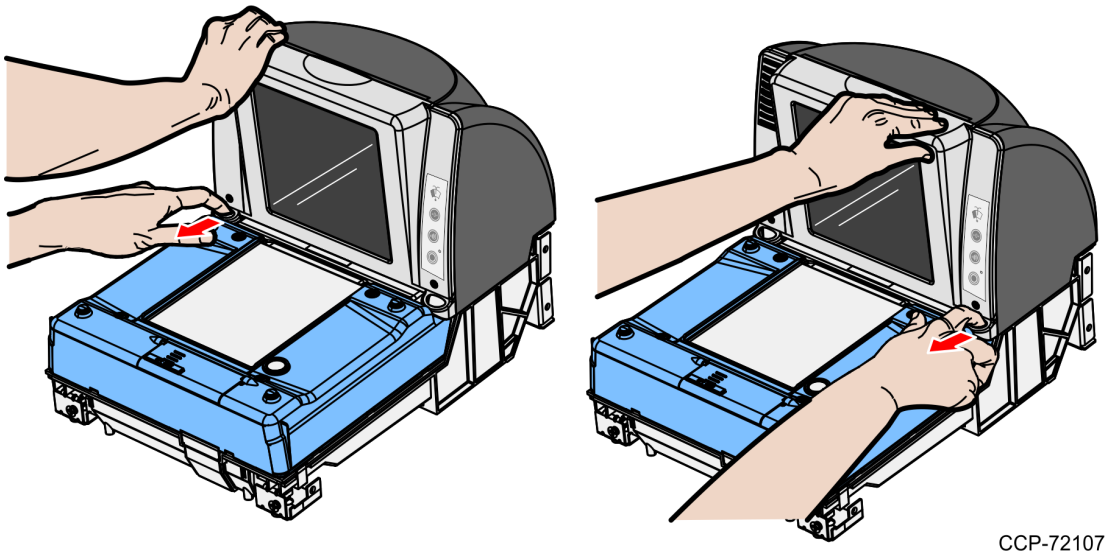
CCP-72106

4. Disconnect all cables from the back of the Scanner.

Remove the Front Bezel

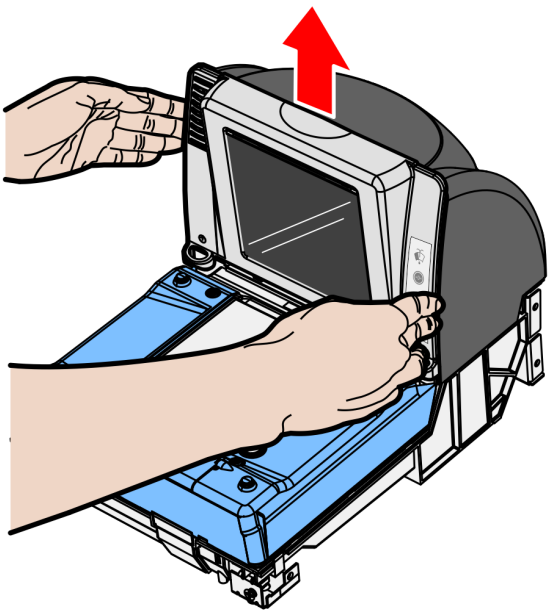
To remove the Front Bezel, do the following:

1. Place one hand and slightly apply pressure on the top corner of the Front Bezel and use the other hand to pull the snap features at the bottom.



CCP-72107

2. Lift the Front Bezel straight up to remove it from the Inner Tower.

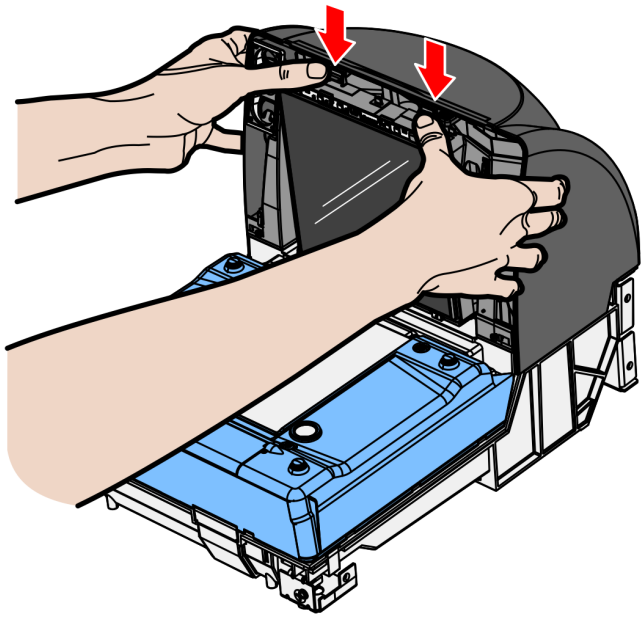


CCP-72108

Remove the Tower Cover

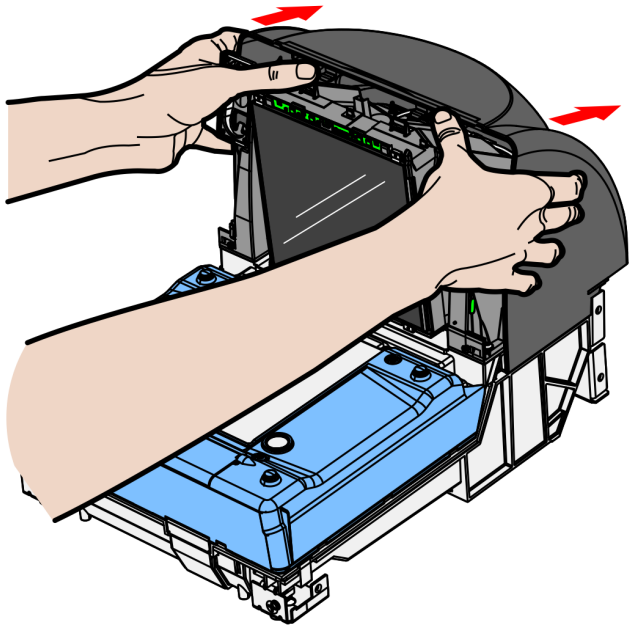
The Tower Cover covers the Vertical Optics Assembly. It is fastened to the 7878 Mounting Bracket without screws.

1. Depress the two tabs at the top of the Tower Cover to disengage the snap features.



CCP-72109

2. Slide the Tower Cover towards the rear then lift it up until detached.

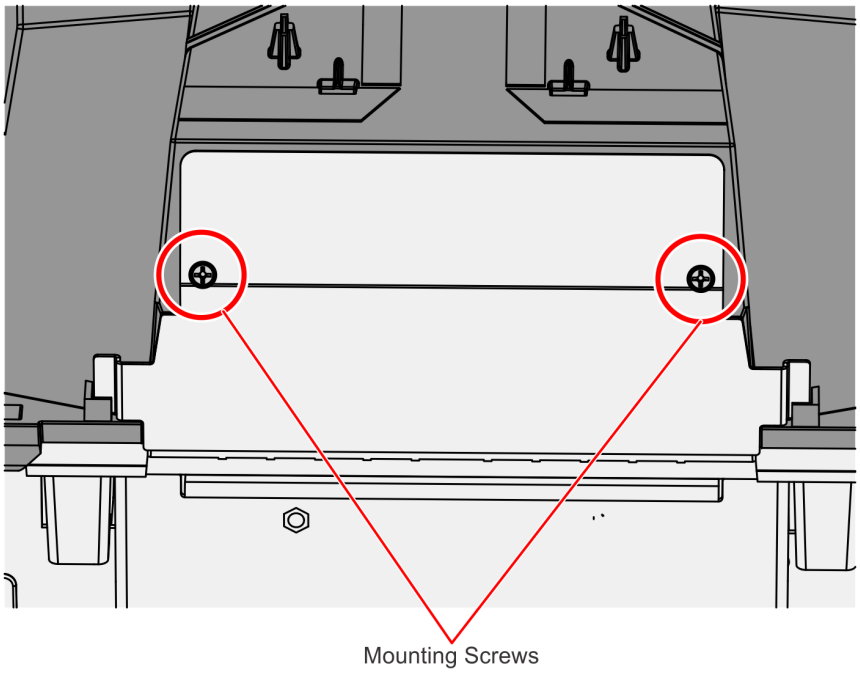


CCP-72110

Install the Imaging Assembly

To install the Imaging Assembly, do the following:

1. Remove the Blank Plate that is found at the back of the Optics Assembly.

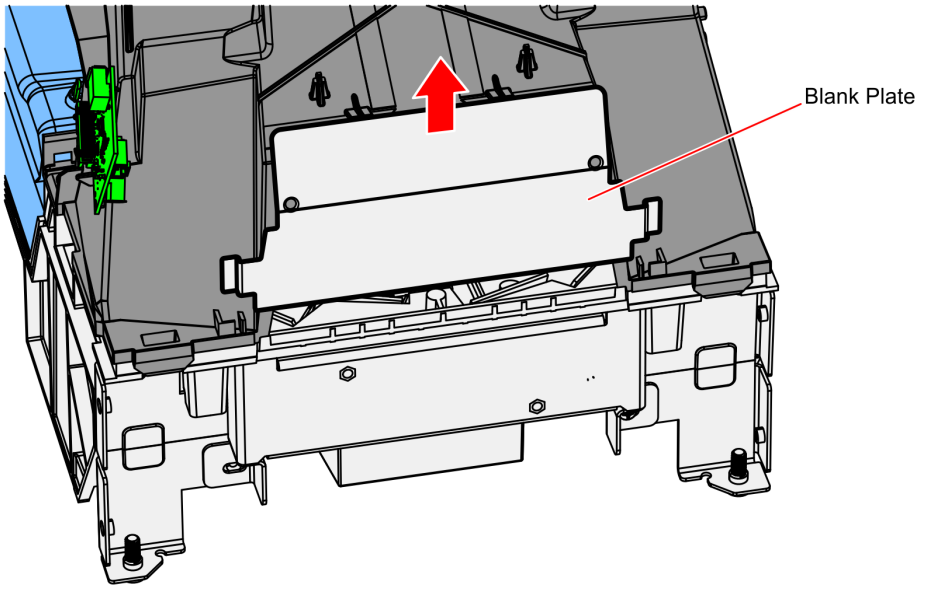


CCP-72111

   a. Remove the two Phillip screws indicated in the above image.

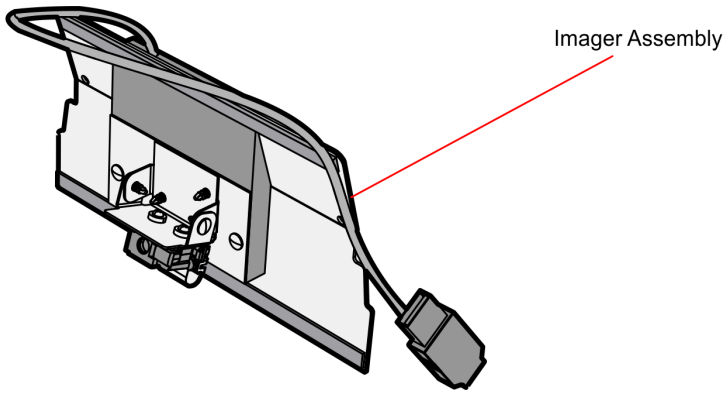
Note: Set aside the screws as they are needed upon installation of the Imager kit.

b. Slide the Blank Plate upward and then remove it from the Optics Assembly. Discard the Blank Plate.



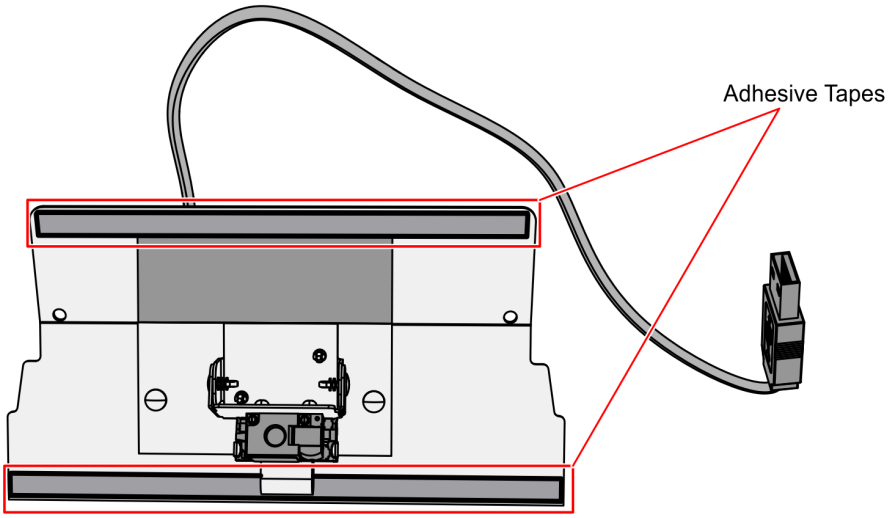
CCP-72113

c. After discarding the Blank Plate, prepare the Imager Assembly for installation.



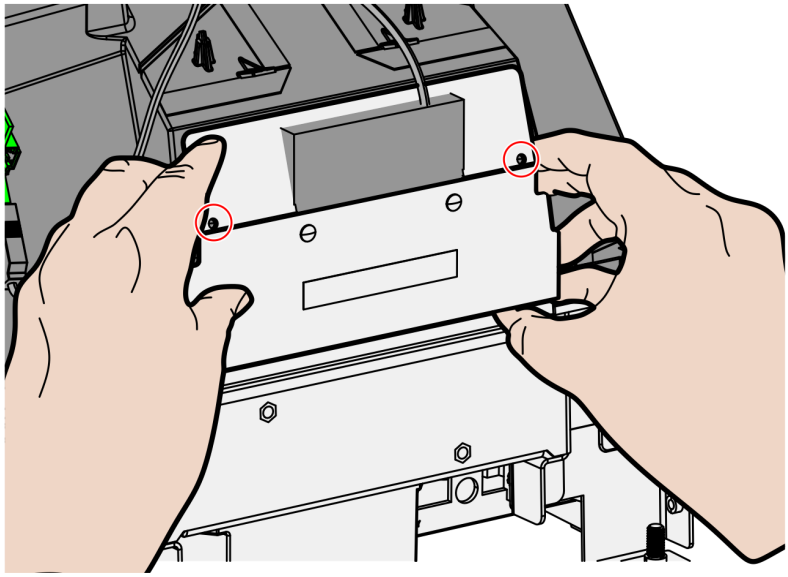
CCP-72129

2. Remove the liner from one side of the adhesive tapes. Adhesive tapes are found on top and bottom edges of the Imager Assembly.



CCP-72114

3. Align the holes of the Imager Mount with the mounting holes of the Optics Assembly.

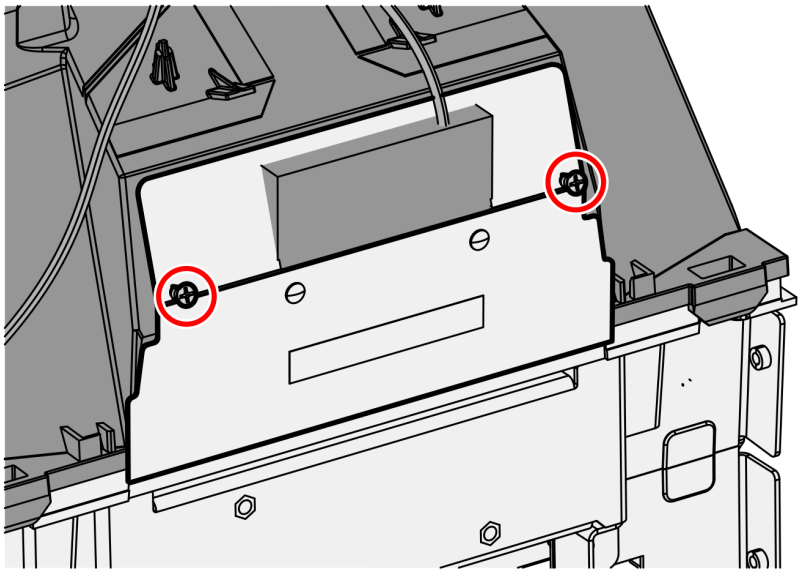


CCP-72115

4. Press the top and bottom edges of the Imager Mount to make them stick to the Optics Assembly.

Note: Ensure that the tapes on the Imager Assembly adequately adhere to the Optics Assembly. Spaces or openings between the Imager Assembly and the Optics Assembly should be avoided to prevent dust or debris from entering the optics chamber.

5. Holding the Imager Mount in place, insert the flat head screws to the mounting holes.

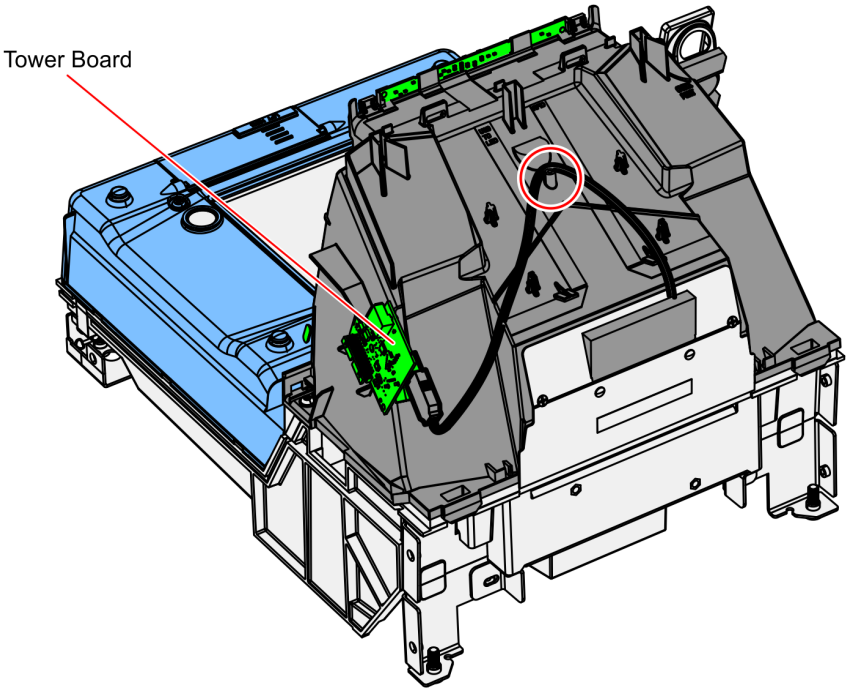


CCP-72116

6. Tighten both screws to 6.25 lbs–in.

Note: Do not overtighten the screws to avoid breaking the mount.

7. Route the Imager USB cable through the cable guide on the Optics Module, and then connect the Imager USB cable to the lower rear–facing tower USB peripheral port on the Tower Board.

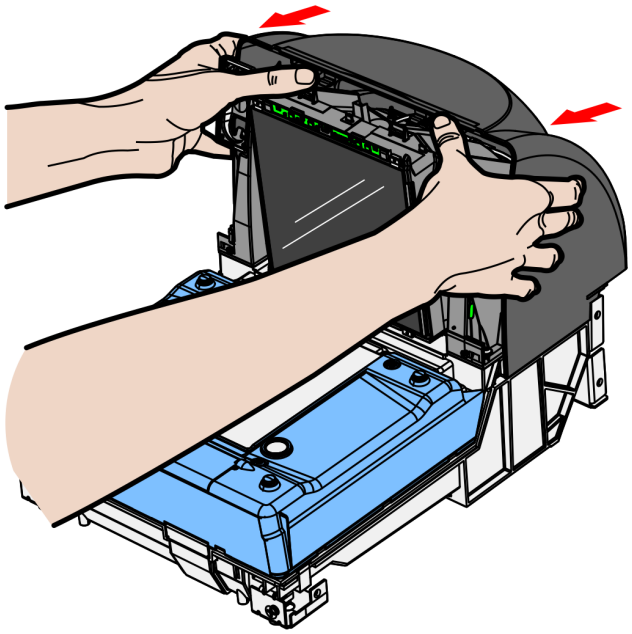


CCP-72117

Re-install Tower Cover

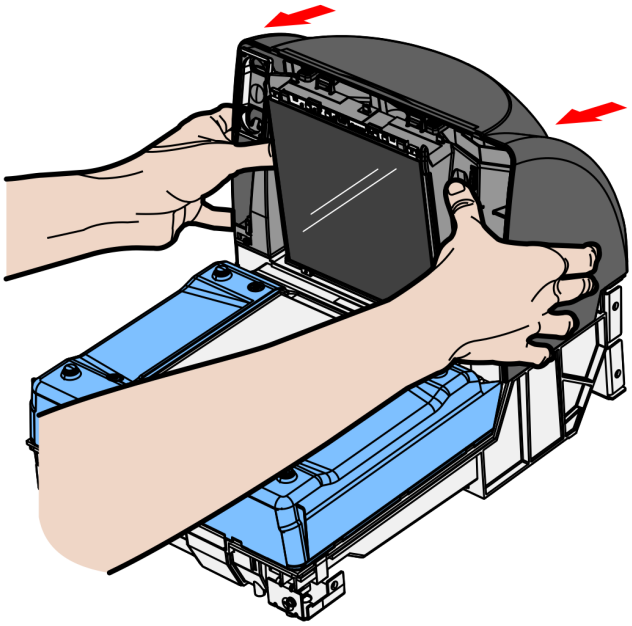
To re–install the Tower Cover, do the following:

1. Place the Tower Cover down onto the Inner Tower.
2. Ensure no wires or cables are pinched between the Tower Cover and the unit.



CCP-72123

3. Slide the Tower Cover until the two tabs snap in.

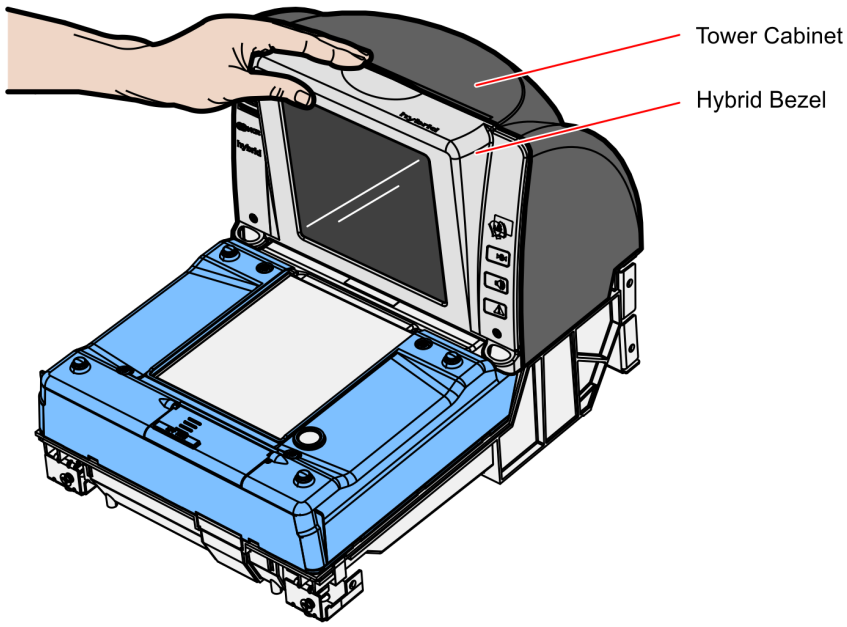


CCP-72124

Install the New Hybrid Bezel

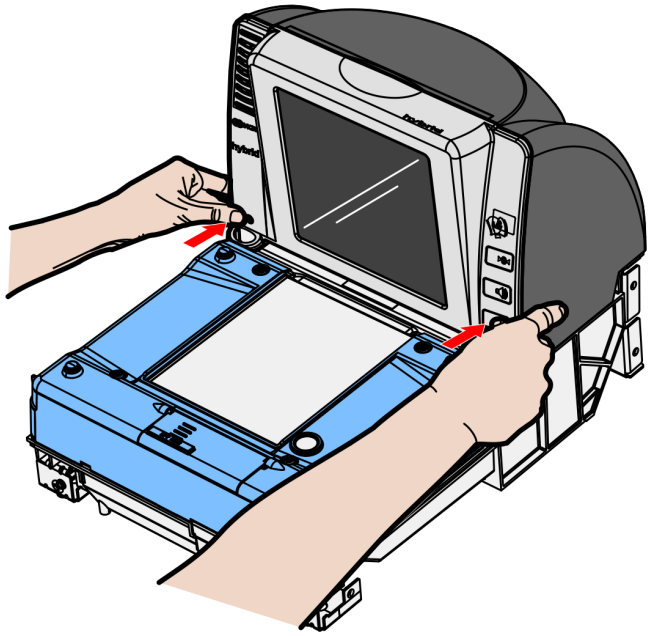
To install the New Hybrid Bezel, do the following:

1. Align the top edge of the Tower Cabinet with the top edge of the New Hybrid Bezel.



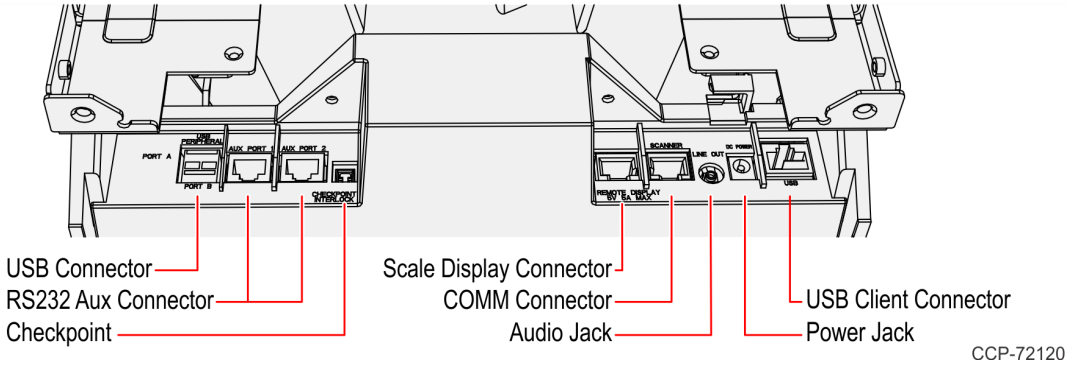
CCP-72118

2. Apply pressure on the bottom-left and bottom-right corners of the New Hybrid Bezel to latch it in place.

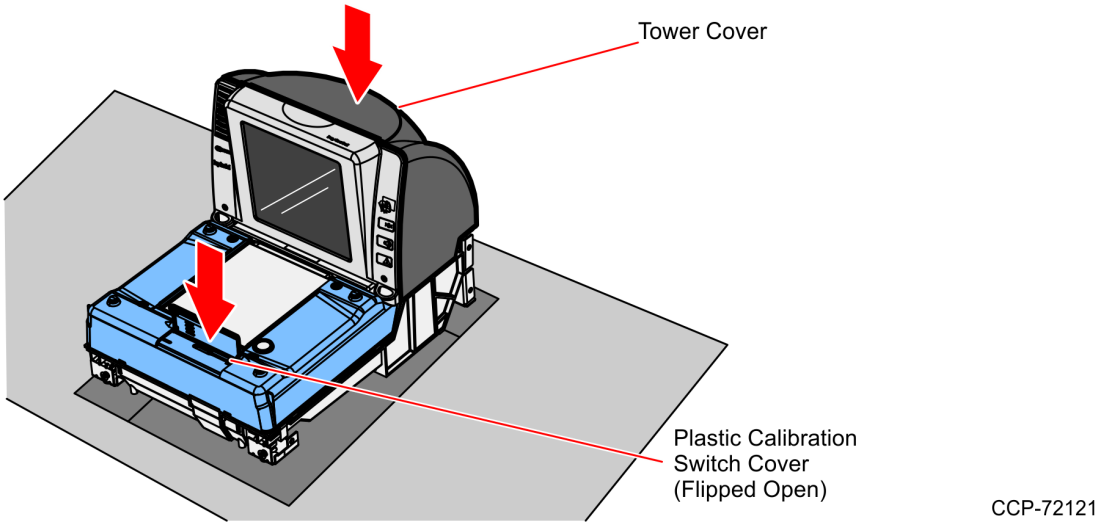


CCP-72119

3. Connect the external cables to the Scanner.

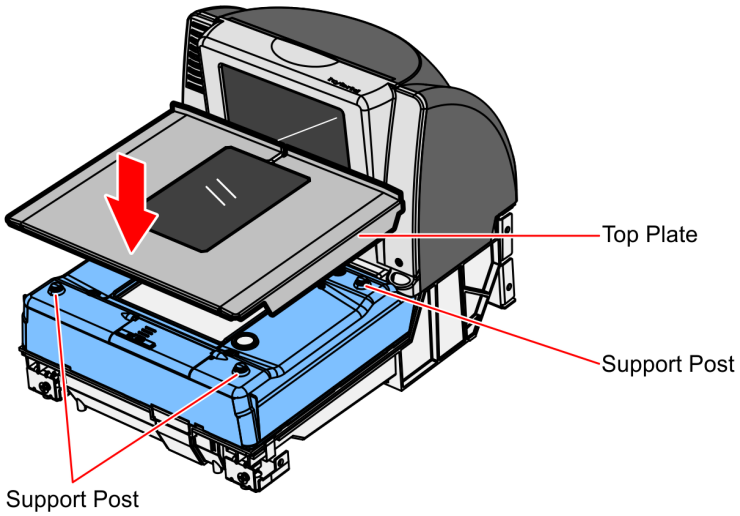


4. If applicable, reinstall the Scanner to the Checkstand. Grasp the back of the Tower Cover with one hand and the plastic Calibration Switch Cover with the other hand, then lower down the Scanner into the Checkstand.



Re–install the Top Plate

1. Lower the back edge of the Top Plate onto the two back Support Posts on the Scanner.
2. Holding the front edge, lower the front of the Top Plate onto the two front Support Posts.



CCP-72122

Programming Instructions

Imager Module (K153) Firmware Functionalities

The cashier–facing Imager Module (K153) of the 7878 scanner provides several functionalities to interact well with the 7878.

Imager Interlock

The Imager Interlock is a feature of the Imager (K153) that activates whenever both the imager and the laser see the same bar code at the same one time. Only one bar code is sent to the POS by the scanner. This feature must not be confused with the EAS Interlock or Same Item Lockout.

Laser Gate Control

The Laser Gate Control is a configurable feature of the Imager (K153) in which the laser does not enable or activate the imager unless the laser sees activity in the laser scan field.

Note: In the 7878 scanner, this feature is enabled at factory default.

Firmware Requirements

Note: The minimum firmware version is **497-0472618**.

Before performing any programming procedures to the 7878 and Imager Module:

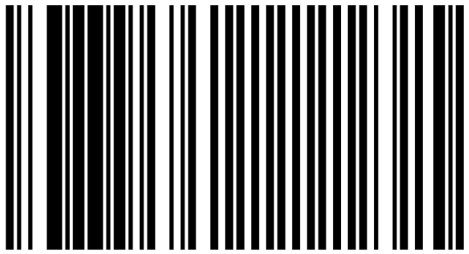
1. Make sure to identify the firmware version of your 7878.
2. If the firmware installed on your scanner is not the required version, re–flash the required firmware to the scanner,
   - using a PC or a host terminal — requires Flash Tool
   - using a USB flash drive — requires Flash Drive Prep Tool

The procedures are explained in the following sections.

Identify the Firmware Version of 7878

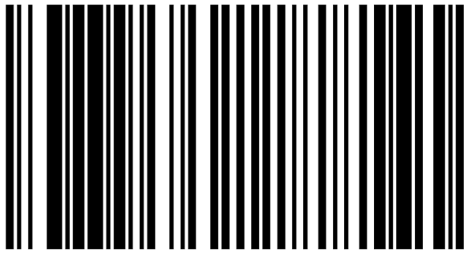
To identify the firmware already in the scanner, scan the **Diagnostic Mode, Hex 4,** and **Hex A** programming tags. These must be the first tags scanned after applying power to the unit. The 7878 gives a voice message containing the 497–xxxxxxx number of its firmware. Power-Cycle your scanner when you are done.

Diagnostic Mode



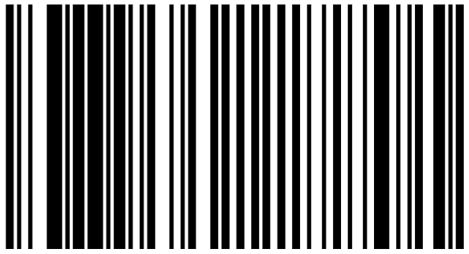
R0041

Hex 4



R0052

Hex A



R0058

Re–flash the Required Firmware to the 7878

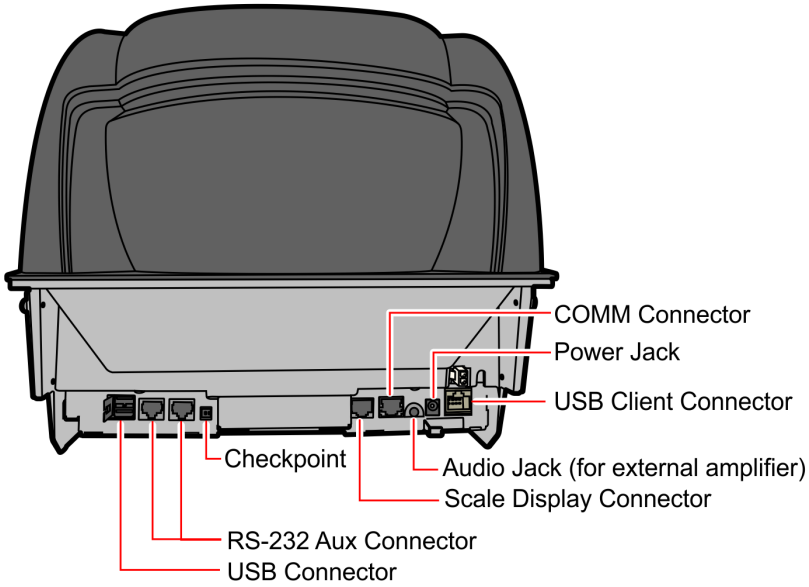
You can perform firmware flashing using a PC/host terminal or a USB flash drive. The procedures ar explained in the next sections. For detailed information, refer to the following:

- NCR RealPOS™ Scanner Tool Suite Guide (B005–0000–1883)
- NCR RealScan™ 78 Bi–Optic Scanner/Scale (7878) User Guide (B005–0000–1724)
- *http://www5.ncr.com/support/support_drivers_patches.asp?Class=retail_RealScan*

  This website contains the software tools needed for firmware flashing. For additional documents, go to the "Other Helpful Links" section and select **7878 Scanner Flash Kit #603-5023425 instructions**.

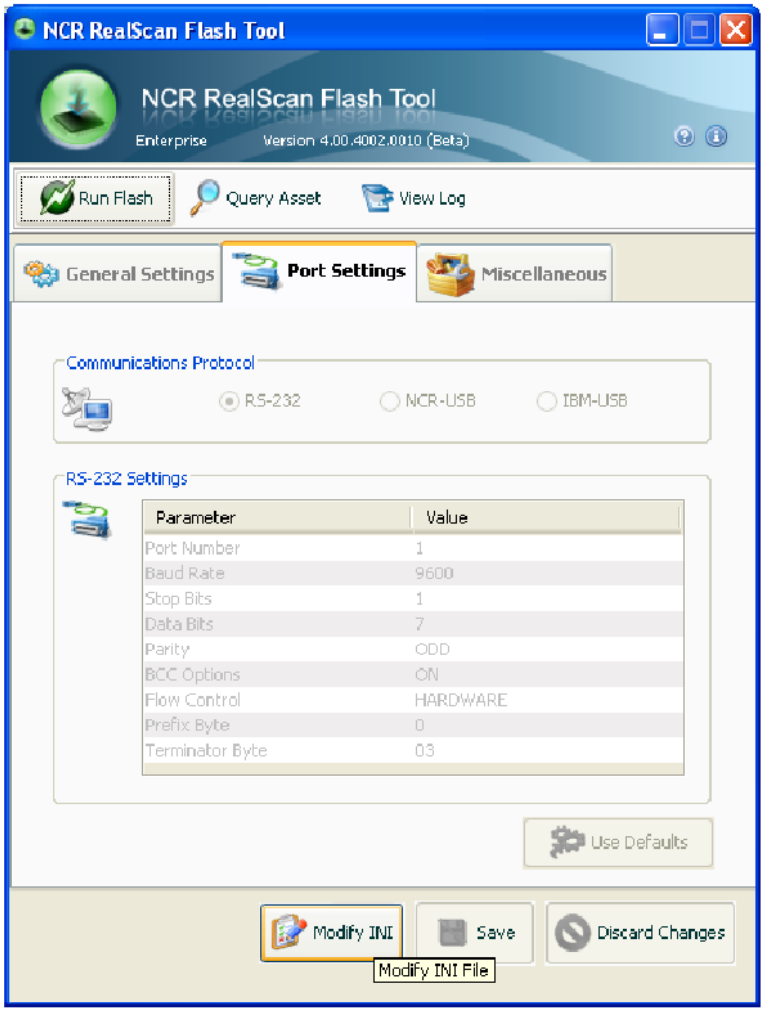
Firmware Flashing using a PC or Host Terminal

1. Apply power to the 7878.
2. Connect the scanner to the host terminal using an RS-232 cable or USB cable appropriate for 7878 scanner.
   - RS232 cable — part number 497-0300422 (1416-C019-004)
   - USB cable — 497-0445079 (1432-C158-0040)

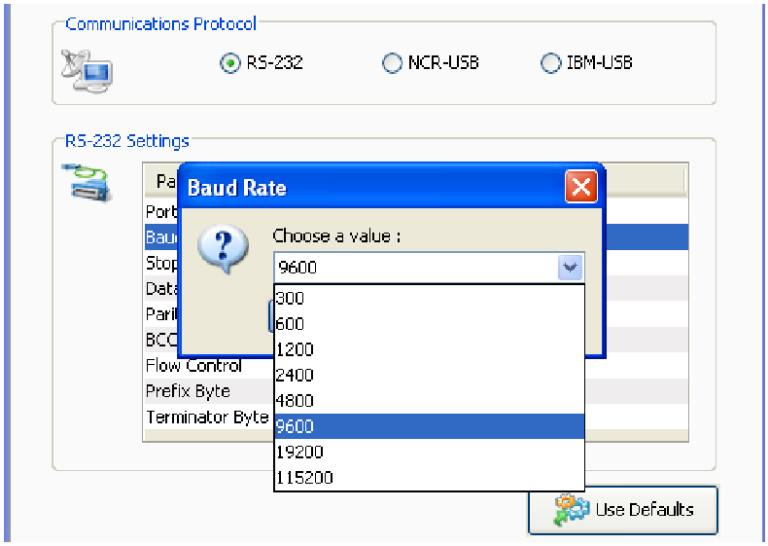


3. Run Flash Tool by double-clicking on the NCR Flash Tool icon on the desktop.

4. Port settings must be configured first before flashing firmware to the scanner. Select **Port Settings** in the main window and select the **Modify INI** button.



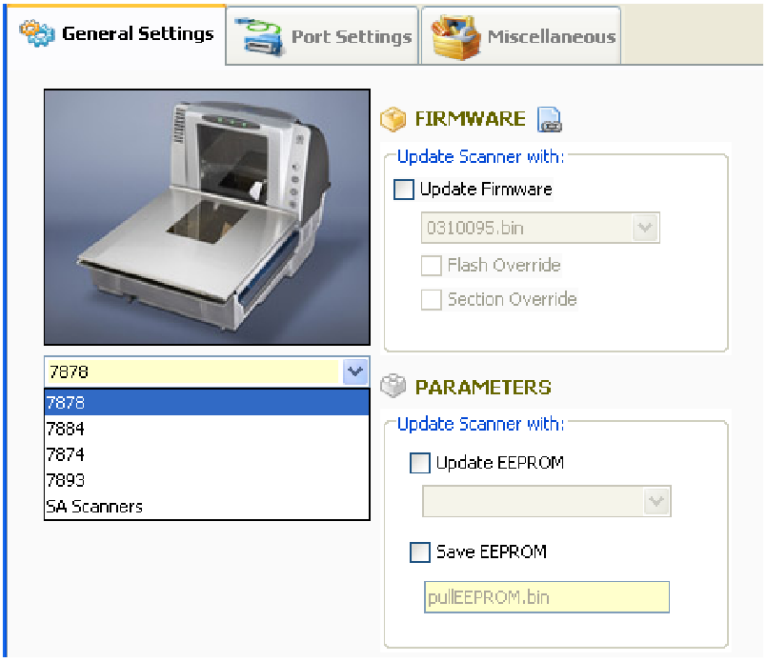
5. Select one of the radio buttons under the Communications Protocol Group within the Port Settings tab. For RS-232 communication protocol, you can configure more settings under the RS-232 Settings group. Right-click on one of the cells in the table to either change the parameter value or restore it to its default value.



6. Select **Save** after making changes to the settings.

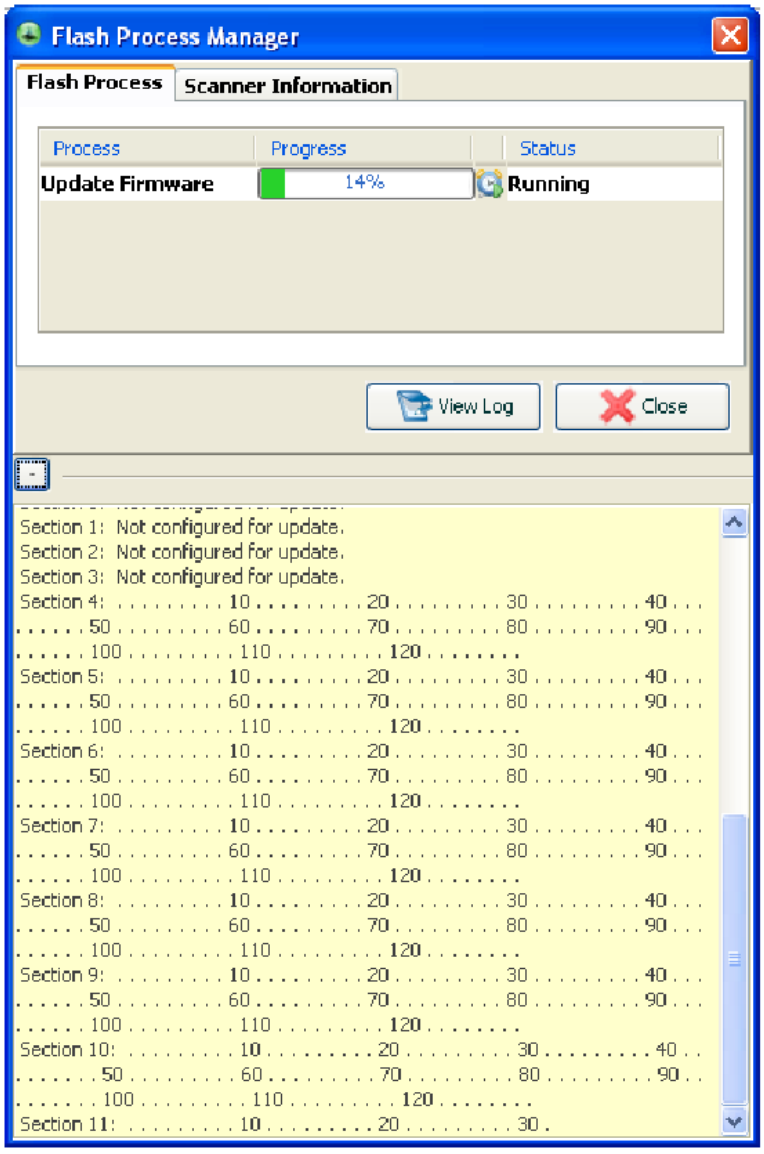
7. Select **Use Defaults** if default settings are preferred. A message box will display informing that all settings will be set to default. Select **Yes** to confirm.

8. After configuring the necessary port settings, choose the scanner you want to flash the firmware to.



9. Select **Modify INI** after a scanner model has been chosen. Select the **Update Firmware** checkbox and choose the firmware BIN file you want to flash to the scanner. For your preference you may enable Flash Override and Section Override by selecting their checkboxes. Select **Save** to save and apply these settings.
10. Select **Run Flash** from the main toolbar to start flashing the firmware to the scanner.

11. The application will initialize communication with the scanner in the port you have specified in the settings. When initialization is successful, the following window will display and show the progress of the flashing process.



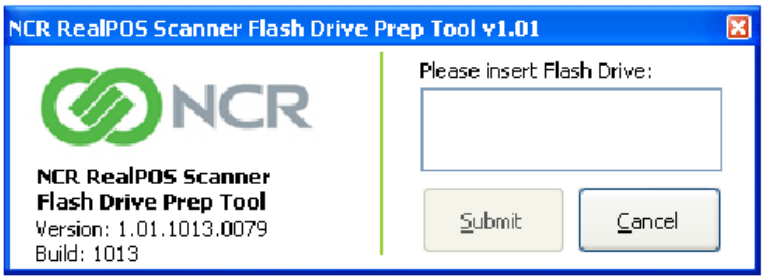
12. Exit the NCR Flash Tool application and disconnect the scanner from the host terminal once firmware flashing is finished.

Firmware Flashing using a USB Flash Drive

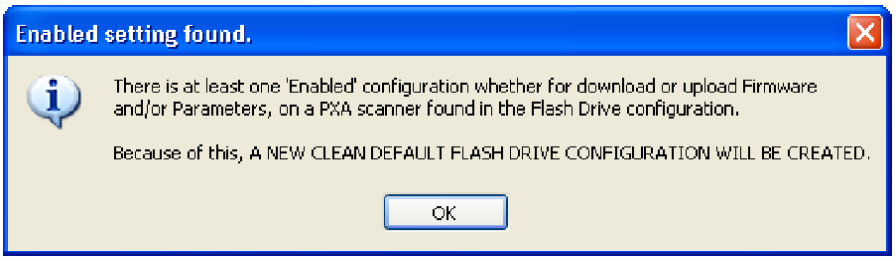
In order to minimize the need for a PC at the scanner site, the Flash Drive Prep Tool preps a flash drive sothat the scanner could understand its contents and performs the tasks defined inside the device prepared by the host terminal software. This flash drive could then be taken to each scanner to perform its tasks without changing anything on the flash drive in between scanners.

Servicing or installing a scanner by flash drive is not a remote operation. A technician will be needed on-site to attach the flash drive to the scanner. A flash drive firmware upgrade is the fastest available means for upgrading the firmware of a scanner.

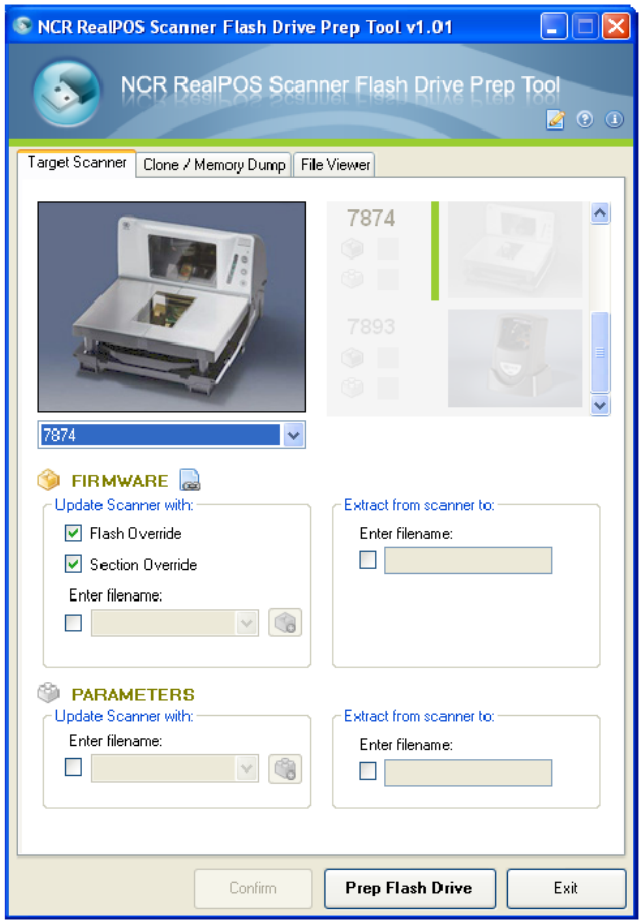
1. Select the Flash Drive Prep Tool icon. The following window displays.



2. Insert the flash drive to be used. The application automatically detects the flash drive installed.
3. Select **Submit**. The following window displays.

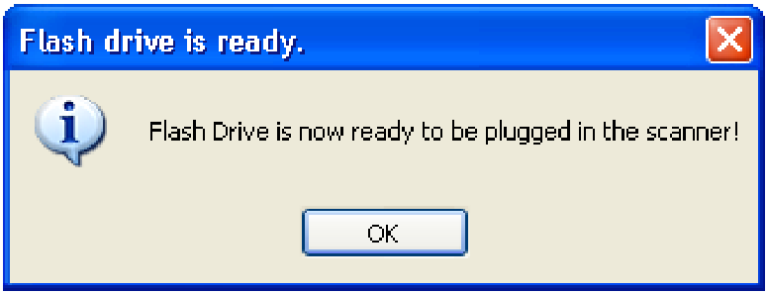


4. Select **OK**. The following window displays.



5. On the **Target Scanner** tab, select 7878.
6. On the **FIRMWARE** groupbox, select the checkbox under **Update scanner with:**.
7. Select the Firmware from the dropdown menu.

8. Select the **Prep Flash Drive** button. The application then preps the flash drive. The following message box displays after a successful flash drive prep.



   The **Down** arrow of the 1st line in the Scanner Configuration Preview Panel for the 7878 highlights.

9. Right-click the **Safely Remove Hardware** icon on the system tray to safely remove the flash drive. A Safe to Remove Hardware balloon message displays near the system tray.

10. Plug the flash drive in the scanner's USB peripheral port. The following lists the different actions the scanner initiates:

    a. The scanner gives off a triple beep of ascending frequency, indicating that the USB peripheral port recognized the flash drive and was able to enumerate. The triple beep sound off regardless of the contents of the flash drive. If the scanner fails to give off the triple beep, this indicates a USB peripheral port failure or the USB peripheral port was not able to communicate with the flash drive.

    b. The scanner speaks "Load program in 3 seconds...2...1...0...". The scanner resets after this message.

    c. The scanner beeps and a triple beep of ascending frequency follows.

    d. The five LEDs light up from bottom to top (for the 7878) while in flash mode. The scanner reboots after a successful firmware download.

    e. The scanner beeps and a triple beep of ascending frequency follows.

    f. The scanner gives off a low frequency triple beep, which indicates that the flash drive can be safely removed.

11. Unplug the flash drive from the scanner's USB peripheral port. The scanner then gives off a descending triple beep sound, which indicates a successful shutdown of the flash drive's firmware.

Program the 7878 for the Imager Module

The 7878 scanner must be programmed so it can perform the following:

- Beep whenever 7878 receives valid bar code data from the Imager module through the USB host port; by default, the scanner does not beep when the Imager receives bar codes.
- Permit the pass-through of 2D data to the POS
- Enable K153 mode

IMPORTANT

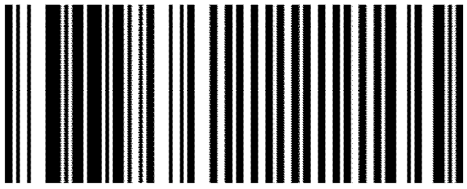
The following 7878 programming instructions are ONLY meant to enable the newly installed imager module.

They are NOT intended to be a substitute for the customer's already-programmed parameters.

Do NOT scan the NCR 7878 DEFAULT barcode at any time when installing the Imager Module or the Customer's original parameters will be lost and their scanners will stop working.

To program the 7878 Scanner for the Imager Module, scan the following bar codes:

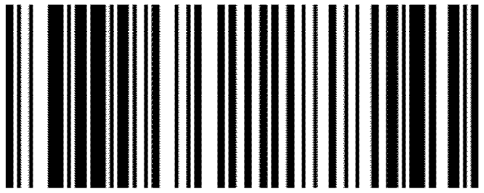
Programming Mode



R0042

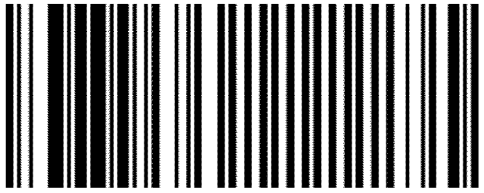
Activate Beep sounds during HH input

Hex 4



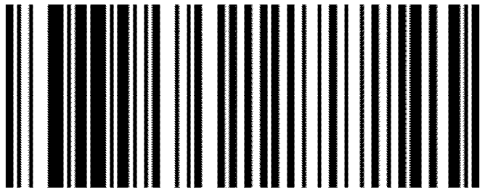
R0052

Hex 0



R0048

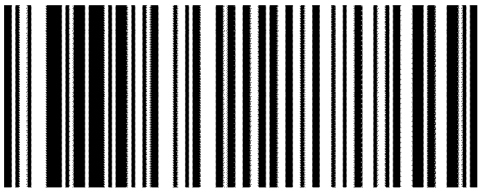
Hex 5



R0053

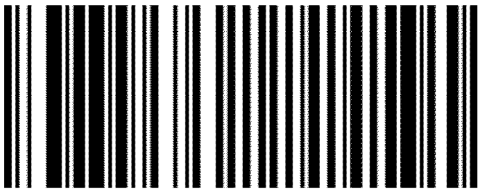
Enable 2D Bar Codes Pass–Through

Hex 7



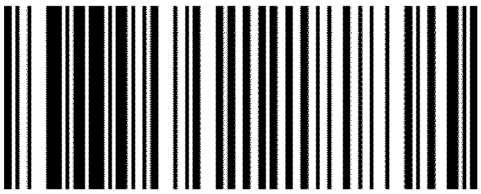
R0055

Hex F



R0063

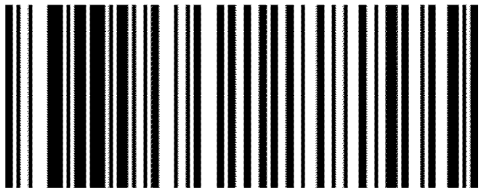
Hex 9



R0057

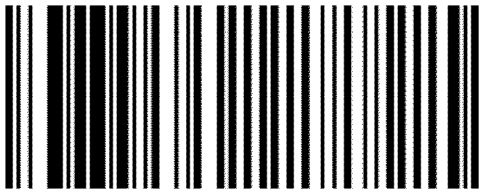
Enable the Imager Kit K150

Hex 8



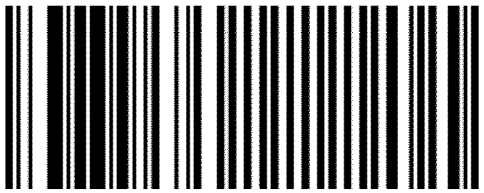
R0056

Hex B



R0059

Hex 1

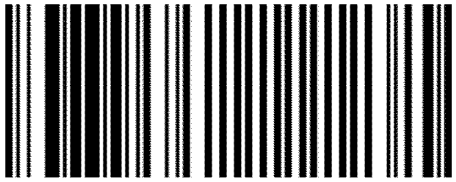


R0049

Enable 2D Pass-Through Function of all 2D types

Note: The passed-through PDF data is transmitted in ASCII format when RS232 Serial or NCR USB is used. This data format is required by NCR OPOS for 2D barcodes.

Save and Reset



R0044

Program the Imager Module

The Imager only provides a limited number of symbologies enabled from the factory which includes the following:

- UPC-A
- UPC-E
- EAN-8
- EAN-13
- PDF417
- GS1 Databar 14 (RSS-14)
- GS1 Databar Expanded (RSS-14 Expanded)
- GS1 Databar Coupons

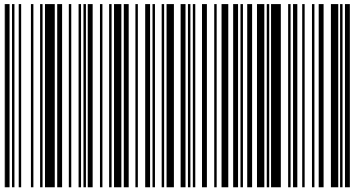
To enable other symbologies, you need to scan the corresponding bar codes in the following pages. Take note of the following reminders when scanning the bar codes.

- Scan the bar codes to the VERTICAL window of the 7878 so that the Imager can see and read them.
- You might need to print and fold these pages in such a way that only one bar code shows per page.
- You do not need to scan all these bar codes, scan the only ones you need.
- There is NO audible feedback (beep) when the imager reads the bar code, so hold the programming bar code in front of the 7878 window for a couple of seconds.
- To know if the symbologies are successfully read, scan the sample bar codes found in the section “Sample 2D Symbologies”.

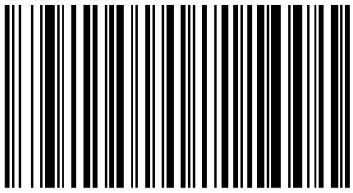
Note: For advanced configurations, see *NCR 7878-K150/F150 Imaging Module User Guide (B005-0000-2166)* on http://inforetail.ncr.com.

Enable other Bar Code Symbologies

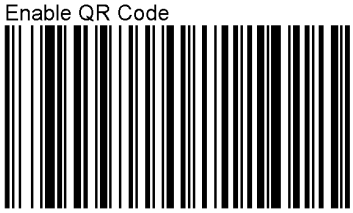
Enable DataMatrix



Enable Aztec



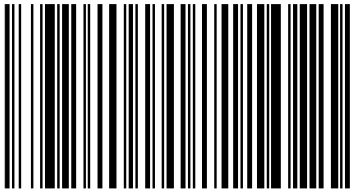
Enable QR Code



CCP-72126

Note: This bar code also enables MicroQR.

Enable MaxiCode



CCP-72127

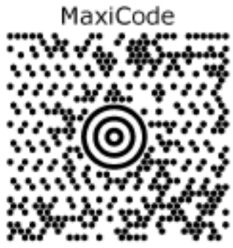
Sample 2D Bar Codes

Sample Aztec

Sample Aztec

Sample DataMatrix

Sample DataMatrix

Sample QR Code

Sample Maxi Code