Point of Sale: Special Topics
Setting Up Point of Sale Devices

Overview

CounterPoint supports a number of peripheral hardware devices in Point of Sale, including:

- Printers
- Cash drawers
- Barcode scanners
- Modems
- Card readers
- Check readers
- Customer displays
- PIN pads
- Scales

Order Entry supports only modems for draft capture processing.

This document provides information on setting up and troubleshooting these devices for use with CounterPoint.

Peripheral devices

Printers

A printer prints customer invoices, receipts, or other documents on pre-printed forms or on plain paper. A printer connects to either a parallel or a serial computer port.

Page width

You can define the forms that you want to print using the Setup / Point of Sale / Forms. (See Forms for more information.) All of the pre-defined forms supplied with CounterPoint require 80 print positions, except for the pre-defined Point of Sale receipt forms, which require 40 print positions.

A printer used to print reports must be able to print 132 characters per line (using compressed print or a wide carriage).

A combination printer prints forms of two widths, and can switch from “invoice mode” to “receipt mode” under software control. In Setup / Point of Sale / Registers, you would specify this printer for both printer 1 and printer 2. For printer 1, assign an invoice form ID and a device code that contains the enable codes for “invoice mode” (e.g., 1B6A01 for the Ithaca
PcOS 250). For printer 2, assign a receipt form ID and a device code that contains the enable codes for “receipt mode” (e.g., 1B6601 for the Ithaca PcOS 250).

If your printer provides features such as bold, italic, or red print, you can use these features to emphasize returned merchandise or printed messages. The codes that control these features should be defined in Setup / Point of Sale / Device codes. (Refer to Device Codes for more information.)

Cash drawers

A cash drawer is a device that holds tender (payment) received from customers. It opens when it receives the proper electronic signal, or “open codes.”

There are four basic types of cash drawers:

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel</td>
<td>Connects to a computer’s parallel port, and opens when it receives the correct sequence of characters (open codes).</td>
</tr>
<tr>
<td>Serial</td>
<td>Connects to a computer’s serial port, and opens when it receives the correct sequence of characters (open codes).</td>
</tr>
<tr>
<td>Pulse</td>
<td>Connects to a computer’s serial port, and opens when it detects a pulse of sufficient duration (this type of cash drawer doesn’t actually recognize specific characters).</td>
</tr>
<tr>
<td>Kickout</td>
<td>Connects to a “cash drawer kickout” port on printers that have been designed for point of sale applications. Opens in response to the printer’s kickout pulse, which is provided by the printer in response to the correct “open codes” from the computer.</td>
</tr>
</tbody>
</table>

Notes on pulse cash drawers

Most pulse cash drawers can respond to “open codes” of hexadecimal 01 if a low enough baud rate is used. At 300 baud, 01 generates a pulse of approximately 20 milliseconds. At 1200 baud, 01 generates a 5 millisecond pulse. (You can set a serial port to 300 baud using the SYNCOM environment variable or Unix stty command.) If the pulse generated by 01 is still not sufficient to open the drawer, try 010101010101FFFFFFFFFFFF.

Barcode readers and scanners

A barcode reader or scanner is a device that optically detects machine-readable marks (barcodes) on merchandise, and decodes those marks into a form that is understandable to the computer.

Barcode readers can reduce checkout time and the number of checkout errors. You can use barcodes throughout CounterPoint to increase speed and decrease errors for the receiving and counting of merchandise.

Barcodes can be either read by a barcode reader, or the actual barcode number can be typed in manually using the keyboard. A barcode can simply be an alternative number by which the system can identify an item. If the barcode is the same as the item number, you don’t need to establish separate barcodes for each item.
**Keyboard transparent input**
Point of Sale supports “keyboard transparent” barcode readers. “Keyboard transparent” means that input appears to come from the keyboard.

There are four basic types of transparent input:

- The reader plugs into a computer keyboard that is equipped with a decoder that sends decoded information to the computer's keyboard port as normal characters.
- The reader plugs into a “wedge” that is equipped with a decoder. The keyboard also plugs into the wedge, and the wedge plugs into the computer's keyboard port. The wedge sends normal characters to the computer's keyboard port. (On Unix systems, the “wedge” is an RS232 device placed between the terminal and the computer’s serial port.)
- The reader plugs into a special circuit card that is capable of decoding. Special software is provided with the circuit card so that barcoded input appears to come from the keyboard.
- The reader is provided with a decoder that plugs into a serial port. Special software is provided with the decoder so that barcoded input appears to come from the keyboard.

**Modems**
A modem is a device that allows one computer to communicate with another computer over a standard telephone line.

A modem modulates the digital output of a computer’s serial port into an analog signal and transmits it over a telephone line, where another modem demodulates the signal into digital data for use by another computer.

Point of Sale and Order Entry use a modem to obtain card and check authorizations from a processor/bank, and to electronically settle credit card funds. (Order Entry uses the modem defined for the Point of Sale register specified as the draft capture register in Setup / Order Entry / Control.)

Troubleshooting and configuring modems used for EDC:
See Credit Card Setup for more information.

**Card readers**
A card reader is a device capable of sensing (reading) and decoding the information written on a plastic card’s magnetically encoded stripe. Most readers are designed such that the card is "swiped" through a slot containing a magnetic sensing device.

Point of Sale supports both card readers that attach to the computer’s serial port and keyboard transparent card readers. “Keyboard transparent” means that input appears to come from the keyboard (refer to the Keyboard transparent input section on page 3 for more information.) OPOS card readers are also supported. (Refer to Device Codes for more information.)
Check readers

A check reader is a device capable of reading the MICR encoded information printed at the bottom of a check.

Point of Sale supports both check readers that attach to the computer's serial port and keyboard transparent check readers. “Keyboard transparent” means that input appears to come from the keyboard. (See the Keyboard transparent input section for more information.)

Customer displays

A customer display device provides continuous display of register activity to the customer as the sale takes place.

Some customer display devices can only display numeric information. Others are capable of displaying phrases such as Drill, Red $14.95 or Change due $22.14.

The Aedex PSD-220, for example, is capable of displaying both numeric and alphabetic information. The example below illustrates one method of using the Aedex display:

<table>
<thead>
<tr>
<th>Field</th>
<th>Hexadecimal entry</th>
<th>ASCII equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable</td>
<td>2123320D2123333030 30300D212331</td>
<td>!#2&lt;cr&gt;!#3000&lt;cr&gt;!#1</td>
</tr>
<tr>
<td>Disable</td>
<td>0D</td>
<td>&lt;cr&gt;</td>
</tr>
<tr>
<td>Separator</td>
<td>0D212332</td>
<td>&lt;cr&gt;!#2</td>
</tr>
<tr>
<td>Ready</td>
<td>0D21233457454C434F 4D4520544F2058595A 2E2E2E2E</td>
<td>&lt;cr&gt;!#4WELCOME TO XYZ....</td>
</tr>
<tr>
<td>Total</td>
<td>414D4F554E54204455 450D21233330313030</td>
<td>AMOUNT DUE&lt;cr&gt;!# 30100</td>
</tr>
<tr>
<td>Tender</td>
<td>524543454956454440D 21233330303130</td>
<td>RECEIVED&lt;cr&gt;!#30010</td>
</tr>
<tr>
<td>Change</td>
<td>4348414E4745204455 450D21233330303031</td>
<td>CHANGE DUE&lt;cr&gt;!#30001</td>
</tr>
<tr>
<td>Not ready</td>
<td>0D212334434C4F5345 442E2E2E2E</td>
<td>&lt;cr&gt;!#4CLOSED....</td>
</tr>
<tr>
<td>Item (format)</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Items (length)</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
PIN Pads

A PIN pad is a device that allows a customer to type in their personal PIN number for a debit or ATM card.

Connecting and testing peripheral devices
To successfully connect a peripheral device to your computer, you must:
- Understand what you are attempting to accomplish
- Proceed in a methodical, step-by-step manner
- Be able to isolate any problem so that you can identify precisely what portion is malfunctioning, and correct the situation

The following table provides a step-by-step approach to setting up a cash drawer. Variations of this approach can be used to set up any of the supported devices.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Description</th>
</tr>
</thead>
</table>
| Step 1 | • Unpack the cash drawer and inspect the container for any additional parts and printed instructions provided by the manufacturer.  
• Remove any bolts or devices from the cash drawer that are used only to protect the device during shipping.  
• Become familiar with the location of any electronic connectors, power cables, or switches on the cash drawer. |
| Step 2 | • Review the manufacturer’s instructions.  
• Ensure that you have the correct cable to connect to your computer, or, for certain cash drawers, to your printer. The required cable is either provided with the cash drawer or purchased as a separate item.  
• Ensure that the switches (if any) are set as directed in the manufacturer’s instructions. |
| Step 3 | • Connect the cash drawer to your computer (or printer). Make sure that both ends of the connector are securely fastened.  
• Turn on the power to your computer, and if applicable, to your cash drawer. If you have a printer, turn it on and make sure that it is on-line and ready to print. |
| Step 4 | Use Setup / Point of Sale / Device codes and Setup / Point of Sale / Drawers to define the drawer. Use the open codes specified by the manufacturer.* |

* Point of Sale does not normally send trailing nulls (00). If trailing nulls are required for the operation of your device, modify the CounterPoint launch file file (or synsuppl for Unix) (see Environment Variable Setup for more information) to include one of the following lines:

Windows: COBSW=%COBSW%+4
Unix: COBSW=$COBSW+4
Testing peripheral devices
In Setup / Point of Sale / Device codes, you can press F2 at Field number to change to test the displayed device. (See Device Codes for more information.)

For example, if you press F2 at Field number to change when a cash drawer device code is displayed, the drawer should open. If it doesn’t, review each of the following:

- Cabling and connectors are secure and correct.
- Switch settings on cash drawer are correct.
- Open codes are correct and match switch settings.
- (For serial cash drawers) Baud rate on port is correct and matches switch settings.

NOTE: The baud rate for serial devices is set using the DOS mode or Unix stty command. Under DOS, this command can be included in your AUTOEXEC.BAT file so that the baud rate is automatically set when the computer is turned on.

If the drawer still does not open, determine if the problem is related to hardware (drawer, cables, etc.) by following the techniques described in the next section.

Troubleshooting peripheral devices
It is important to determine whether CounterPoint is part of the problem, or whether the problem is related solely to the device. One way to do this is to run a test that doesn’t require CounterPoint.

Carriage returns
To ensure compatibility with all types of devices, CounterPoint does not send an extra carriage return at the end of the control codes sent to point-of-sale devices (drawers, pole displays, and printers). If your devices require this extra carriage return, you must add hex 0D to your device code definitions.

Printer
Copy any text file to the printer.

<table>
<thead>
<tr>
<th>Windows</th>
<th>Unix</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&gt; COPY SYN.BAT LPT1</td>
<td># cat syn &gt; /dev/lp0</td>
</tr>
</tbody>
</table>

The printer should print the file. If it doesn’t, your printer is probably not connected properly.

Cash drawer
Create a disk file that contains the correct open codes (this example uses 0101).

<table>
<thead>
<tr>
<th>Windows</th>
<th>Unix</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&gt; COPY CON TESTFILE CTRL-A CTRL-A CTRL-Z</td>
<td># vi testfile i CTRL-V CTRL-A CTRL-A ESC ZZ</td>
</tr>
</tbody>
</table>


Verify that the file was created.

<table>
<thead>
<tr>
<th>Windows</th>
<th>Unix</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>C&gt; DIR TESTFILE</code></td>
<td><code># l testfile</code></td>
</tr>
</tbody>
</table>

Send the file to the cash drawer (this examples assumes the cash drawer is connected to LPT1 under Windows, or `/dev/lp0` under Unix).

<table>
<thead>
<tr>
<th>Windows</th>
<th>Unix</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>C&gt; COPY TESTFILE LPT1</code></td>
<td><code># cat testfile &gt; /dev/lp0</code></td>
</tr>
</tbody>
</table>

The drawer should open. If it doesn’t, then you may be using the wrong open codes, or the drawer may not be connected properly.

**Barcode reader**
From the operating system prompt, scan an item’s barcode.
If correct information displays on the screen, then the reader is working properly.
If incorrect information appears on the screen, then the reader is attached, but its configuration settings probably don’t match the computer’s settings.
If no information appears on the screen, then there is a cable or compatibility problem.

**NOTE:** Following the scanned information, an error message is issued by the operating system because the information you scanned is not a valid operating system command. Ignore the error message for the purposes of this test.

**Modem**
To test a modem, you must have a software package that talks to the modem. Some modem manufacturers provide test software along with their products.

A modem can also be tested using a dedicated communications software package. In terminal mode, type `ATZ`. You should receive the response `OK` on the screen. If you don’t see `OK`, your modem is not properly configured.

**Magnetic stripe card reader**
To test a keyboard transparent card reader, at the operating system prompt, swipe the card through the card reader.
If correct information displays on the screen, then the reader is working properly.
If incorrect information appears on the screen, then the reader is attached, but its configuration settings probably don’t match the computer’s settings.
If no information appears on the screen, then there is a cable problem, a compatibility problem, or the reader has not been properly initialized.
If your device still doesn’t work, contact your equipment supplier for further assistance.

**NOTE:** Some mag stripe reader manufacturers provide test software along with their products.
To test a serial card reader, you must use either the test software provided by the equipment manufacturer, or the device test built into CounterPoint. (See “Testing a device code” in Device Codes for more information.)

Check reader
To test a keyboard transparent check reader, at the operating system prompt, run a check through the reader.

If correct information displays on the screen, then the reader is working properly.

If incorrect information appears on the screen, then the reader is attached, but its configuration settings probably don’t match the computer’s settings.

If no information appears on the screen, then there is a cable problem, a compatibility problem, or the reader has not been properly initialized.

If your device still doesn’t work, contact your equipment supplier for further assistance.

NOTE: Some check reader manufacturers provide test software along with their products.

To test a serial check reader, you must use either the test software provided by the equipment manufacturer, or the device test built into CounterPoint. (See Device Codes for more information.)

Initializing serial ports under Windows 95/98

If you experience problems using a serial port for a point-of-sale device when running CounterPoint, you can use the utility called MODEW.EXE to initialize the problematic port.

To use this utility, select Start / Settings / Task Bar. On the Start Menu Programs tab, click the Advanced button. Double-click on the Programs file folder, then on the Startup file folder. Select File / New / Shortcut. For Command line, type:

```
C:/SYN/MODEW COMx,96,N,8,1
```

(where C:/SYN is the path to your top-level CounterPoint directory, COMx is the specific serial port, and 96,N,8,1 are the desired settings for the com port)

Click the Next button. For the shortcut name, type MODEW. Click the Finish button, then click the OK button on the Taskbar Properties dialog box.

Now, each time you start Windows 95/98, this utility will automatically initialize this serial port.