Point of Sale Hardware Guide
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WinSNAP Point of Sale

The Point of Sale Chapter provides technical information, helpful hints, advice and tools that will save you time and effort as you install Point of Sale terminals and wiring.

Terminal to Fit Your Needs

School-Link Technologies has a series of POS terminals designed to fit your needs and resources, including dependable wireless solutions that are easy to install and offer schools the ability to expand accountability beyond the cafeteria.

Dependable and affordable wireless options allow for expanded service areas and creative setups like never before. Mix and match terminals within the cafeteria setting, with all communicating back to a single manager’s workstation.

The terminals have been designed to work across many software operating systems and support a variety of peripheral input devices. Choose from PIN pads, bar code readers and bar code scanners for use with PIN numbers, ID cards or rosters.

Model 4 - This inexpensive fast food style unit is perfect for schools with many serving lines and districts on a tight budget. The Model 4 comes in two versions: Model 4B (RS232) and Model 4C (RS422). Look for the label on the back of the terminal to determine the version. This is very important as the version makes a difference in the connection/wiring of the terminal. The Model 4 Terminal also comes in an economical wireless model as well (RS232 only).

Mira - The new Mira terminal offers more information displayed at the terminal. The display has 16 rows of 40 characters each and is divided into 6 informational sections. See Introduction to Mira for more information on this new terminal. Mira also comes in a wireless version (RS232 only).

Note: We also have the new Mira-IP terminal.

POS Client comes built-in with the WinSNAP software. POS Client replaces our Graphic Terminal and has the following new features:

- Large color graphics and photo capabilities
- Large buttons
- Terminal can serve as both point of sale terminal and manager's computer
- Ideal for sites with just one serving line
- Easily networked for larger operations
- Simple to operate - training is a snap.
**POS Client CE** uses the TeleCLIENT touchscreen. This terminal provides the same benefits as our POS Client in a CE operating system.

### Remote Site Point of Sale Hardware Worksheet

**District / Site Name:** __________________________________________________

The Remote Site Point of Sale Hardware Worksheet allows you to list terminals at a site by terminal ID and model. It allows you to enter the wiring type, protocol, **server** computer name and also any attached devices.

<table>
<thead>
<tr>
<th>POS Terminal ID #</th>
<th>POS Terminal Model</th>
<th>Wiring Type</th>
<th>Protocol</th>
<th>Attached Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong> 1 - 31</td>
<td>4B, 4C or RF</td>
<td>RJ11Cat3 or 5</td>
<td>RS232 RS422</td>
<td>BCSlot, BCWand, PIN Pad, Gun</td>
</tr>
</tbody>
</table>

Completed By: ________________________________________ Date: __________
Setup Point of Sale Terminals

Test each function on the terminal using one of the district’s cashiers. Do not test with ‘1010’. Test each input device. Verify that all Point of Sale addresses, dip-switches, resistance and setup parameters are set up correctly.

**Tip:** See [POS Client CE Setup](#) for instructions on setting up the POS Client CE.

**Tip:** See [POS Client Setup](#) for setting up POS Client.

**Tip:** See [Point of Sale Chapter](#) for more information on hardware setup, testing, etc.
Terminal Checklist

District / Site Name: __________________________________________________

**Caution:** It is important that you perform the tasks in the order they appear.

**Note:** For more information on the types of terminals, see the Terminal to Fit Your Needs topic.

Select the hyperlink (if any) in the task to get detailed instructions.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check wiring type. Enter this information on the Point of Sale Hardware Checklist.</td>
<td>See the Introduction to WinSNAP Out of the Box in the Install Guide for more information.</td>
</tr>
</tbody>
</table>
| For wiring configuration see:  
  • Wiring Preparation and Installation for Model 4  
  • Wiring Preparation and Installation for Mira | See the Introduction to the Model 4 Terminal or Introduction to the Mira Terminal for more information. |
| **Set up terminals** and attach any input devices. | Scanners can be set to manual (trigger) or triggerless mode. Use manual mode when using rosters and triggerless mode when using barcode cards. The instructions for programming the scanner are located on the Documentation Library Page under More Information | Technical Documents and is called 'Programming Hand Held Scanners: Bar Code List'. |
| Set terminal addresses:  
  • Model 4  
  • Mira | See the Point of Sale chapter for additional information. |
| Insure Point of Sale setup options are correct |  |
| **Start a meal session** on the manager’s computer |  |
| Test the function of each terminal and input device using a district ID (sign-on). | Do not use 1010. |

Completed By: ________________________________ Date: __________
**Wireless Terminal Checklist**

District / Site Name: __________________________________________________

**Caution:** It is important that you perform the tasks in the order they appear.

Select the hyperlink (if any) in the task to get detailed instructions.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read Going Wireless to determine the appropriate scenario.</td>
<td></td>
</tr>
<tr>
<td><strong>Determine Wireless terminals only, Wireless with hard-wired Model B (RS232) or Wireless with hard-wired Model C (RS422)</strong> and install accordingly.</td>
<td></td>
</tr>
<tr>
<td><strong>Configure the wireless terminals.</strong></td>
<td></td>
</tr>
<tr>
<td>Plug in any input device(s)</td>
<td>Scanners can be set to manual (trigger) or triggerless mode. Use manual mode when using rosters and triggerless mode when using barcode cards. The instructions for programming the scanner are located on the Documentation Library Page under More Information</td>
</tr>
<tr>
<td></td>
<td>Technical Documents and is called 'Programming Hand Held Scanners: Bar Code List'.</td>
</tr>
<tr>
<td><strong>Test the strength</strong> of the signals from the master modem to the slave.</td>
<td></td>
</tr>
</tbody>
</table>

Completed By: ___________________________ Date: __________
Configuring and Connecting Point-Of-Sale Terminals, Including RF Units

One of the first, and most important, things to know is which version of terminal(s) you are using. Externally, it is difficult to tell the difference between a Model 4B (RS232) and Model 4C (RS422); however, the setups in this section are dependent on your knowing that information. Probably the easiest way to tell is by looking at the COM port adapter that is attached (or will attach) to the back of your computer. See the following drawing to help you make the determination.

**Tip:** There is a label indicating the version on all of our new terminals. Look on the back of the terminal to see if it is version RS232 or RS422.

![Figure 6.8 - Using the COM Port Adapter to Determine POS Models](image)

Figure 6.8 - Using the COM Port Adapter to Determine POS Models

![Figure 6.9 - Basic POS Connections](image)

Figure 6.9 - Basic POS Connections

Follow these steps to get your Point-of-Sale unit connected:

1. **Plug** the **unit** into a 110V AC outlet with the power supply supplied by School-Link Technologies.
2. **Press** the **power on/off button** until it clicks. You will see a series of start-up messages on the display, and hear a beep.

3. **Power off** the unit.

4. **Connect** a **jumper cable** into the installed connector block.

   **Note:** There are two modular RJ11 connection ports on each terminal. One side should always work. The other is used to daisy chain from one terminal to another. As a starting point, if you are using Model 4B’s, plug the RJ11 cable into the connector port closest to the on/off button on the back of the terminal. If you are using 4C’s, plug the cable into the connector farthest away from the on/off button.

5. If you are using input devices such as the Bar Code Card Slot Reader, **Bar Code** Wand Reader, Pin Pad or Hand Held Bar Code Reader, **plug** each of the **devices** into one of the two input device sockets, (there is one on each side of the terminal).

   **Note:** If this is a ‘direct connection’ directly from the back of the computer to the POS unit (not going through wall wiring), reverse the above. That is, for direct-connected 4B’s, use the connector farthest away from the power switch, and for direct-connected 4C’s, use the connector closest to the power switch.

   **Caution:** Before testing an RF Modem terminal it must be charged at least 24 hours.

**Configuring the COM Port with WinSNAP POS**

There are several combinations of serial devices that can be used with Point of Sale. There are also several ways to configure the COM ports to talk to the devices.

**Setup | Point of Sale**

The **Setup | Point of Sale Tab** is used for configuring the COM port to be used by terminals (Model 4 and Mira). The configuration options entered here are read by the Point of Sale program when it first starts. This setup page contains the following COM port setup questions: **Do you use Point of Sale Terminals?**, **Disable COM Port?**, **Communications Port**, **Port Speed** and **Highest Terminal Address**.
**POSComPortOverrides and POSComPortOverrides2**

These are registry entries that must be manually added to the HKEY_LOCAL_MACHINE\SOFTWARE\Snap Systems, Inc\WinSNAP key in the Windows registry. The items displayed in a tree structure in the left-hand pane of the registry editor tool (regedit.exe) are called keys (and sub-keys). The named items in the right-hand pane are called values. The string or numeric information associated with a value is called the data. Therefore, you are adding a new value to the WinSNAP key.

The data associated with these values (POSComPortOverrides/POSComPortOverrides2) must be formatted as three pieces of information separated by spaces: the COM port number, the baud rate for that port, and whether or not terminals (Model 4 or Mira) will be used on that COM port. For example, to configure COM Port 1 for Mira terminals you would enter “1 19200 Y” as the data for either POSComPortOverrides or POSComPortOverrides2.

**Tip:** As with the “Do you use Point of Sale Terminals?” question on the Setup | Point of Sale Tab, there is no reason WinSNAP v2.1.4 or higher to ever use No as the third part of this data. As with the setup question, this is left over from the Graphic Terminal days of previous WinSNAP versions.

These entries are read and used by the POS engine when it starts up to tell it which COM ports to open as well as how to open them (baud rate). If POSComPortOverrides or both of these registry entries exist, then any configuration done on the Setup | Point of Sale Tab will be totally ignored. This means that you cannot use EZViews to configure COM port 1 and POSComPortOverrides to configure COM port 2. If you are configuring POS terminals on both COM ports you must use POSComPortOverrides to configure one of the ports and POSComPortOverrides2 to configure the other port.

**Tip:** For this reason, the only time for using POSComPortOverrides or POSComPortOverrides2 is when you are configuring POS terminals (Model 4 or Mira) on both COM ports where the POS engine is running.

**Note:** POSComPortOverrides2 is not reserved for COM port 2. The “2” in the name is just there to make it unique from POSComPortOverrides. If you are configuring ports 1 and 2 it might be more intuitive to use POSComPortOverrides for port 1 and POSComPortOverrides2 for port 2; however, it is the first part of the data that associates the value with a port. On some systems these might be used to configure COM ports 3 and 4.

**Note:** You cannot use POSComPortOverrides2 without POSComPortOverrides. If you are configuring only one port you must use POSComPortOverrides. However, in this case it would be better to configure the port on the Setup | Point of Sale Tab.
Tip: If you are running POS Client on the same system with the POS engine, and you need to configure serial devices for use by POS Client, do not use these registry values. If you do, the POS engine will open the port when it starts. This will cause you to get an error when you start POS Client saying that it cannot open the COM port, because the engine already has it open. Use the POS Client’s Advanced Menu option 4- Serial Device Configuration.

POS Client

POS Client has an **Advanced Menu option** from which you can configure serial devices specifically for use by POS Client. From this dialog you can configure one or two serial devices, associating each one with a specific COM port and a baud rate. In almost all cases the baud rate for these serial devices will be 9600.

If you are using terminals (Model 4 or Mira) on one COM port and a serial device for POS Client on the other COM port, use the **Setup | Point of Sale Tab** to configure the COM port with the terminals. Then use the **Advanced Menu option** to configure the COM port for its serial device.

If you are running POS Client on a system remote from where the POS engine is running, then neither the **Setup | Point of Sale Tab** settings nor the data in POSComPortOverrides or POSComPortOverrides2 has any effect, since these are read by the POS engine and it is not running on this system. Just use the POS Client’s **Advanced Menu option** to configure the COM ports.

The **Advanced Menu option** adds registry entries (SerialDevice1 and SerialDevice2) into the WinSNAP key. These entries are maintained by the POS Client; therefore, there should be no reason to add, delete, or alter any existing SerialDevice1 or SerialDevice2 registry settings from the registry editor.

ELO Touch Screen

None of the setup options mentioned to this point have any effect on the operation of the ELO Touch Screen accessory. The ELO device has its own configuration options that are set when the ELO device is installed. You should not configure the port dedicated to the ELO device by any of the means described above for configuring terminals and serial devices.
## Configuration options for COM ports

<table>
<thead>
<tr>
<th>Model 4 or Mira terminals</th>
<th>POS Operations running locally</th>
<th>POS Operations running remotely</th>
</tr>
</thead>
<tbody>
<tr>
<td>on one COM port</td>
<td>• Disable COM port in POS Setup</td>
<td>• Do not use POSComPortOverrides or POSComPortOverrides2</td>
</tr>
<tr>
<td></td>
<td>• Do not use POSComPortOverrides or POSComPortOverrides2</td>
<td>• Configure serial device from Advanced Menu option</td>
</tr>
<tr>
<td></td>
<td>• Configure serial devices from Advanced Menu option</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 4 or Mira terminals</th>
<th>POS Operations running locally</th>
<th>POS Operations running remotely</th>
</tr>
</thead>
<tbody>
<tr>
<td>on both COM ports</td>
<td>• Disable COM port on Setup</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Configure COM ports using POSComPortOverrides and POSComPortOverrides2</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POS Client and Model 4/Mira terminals</th>
<th>POS Operations running locally</th>
<th>POS Operations running remotely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Configure COM port for serial terminals on Setup</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Do not use POSComPortOverrides or POSComPortOverrides2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Configure serial device from Advanced Menu option</td>
<td></td>
</tr>
</tbody>
</table>

### Other Setup Issues

If the POS unit beeps when it is turned on, but the 4-Line LCD display stays blank, check the display contrast. This is adjusted by inserting a very small slotted screwdriver into the small hole next to the left input device port of the terminal unit.
To increase the brightness of the display, turn this screw counter-clockwise. To decrease the brightness, turn this screw clockwise. If the terminal beeps but has no display at all, turn this screw counter-clockwise until the display figures start to appear. (This may take several turns to accomplish.) The adjustment is very sensitive and the display contrast is affected slightly by the room temperature. It should be adjusted at the temperature in which the unit will normally be operating. Set the display contrast so that the letters and numbers appearing on the display are as dark as possible. When turning the adjustment screw counter-clockwise you will reach the point where each individual cell in the display will become dark even when no letters or numbers appear. At this point turn the adjustment screw clockwise just enough to eliminate the darkness in the individual cells. This is the ideal contrast setting for the 4-line LCD display terminals.

The circuit board for the Model 4 units contains a jumper block for bar code configuration, which is for operation with future software. Currently the jumper is set to match the chip installed in the POS, according to the chart. If the jumper clip is incorrectly placed or missing, the POS unit may not read from either or both input device ports. If you are experiencing such a problem, first check the dip switches on the back of the unit for your input device configuration. If you still have a problem, check the jumper on the circuit board. (Call Technical Support for assistance.)

Setting the POSComPortOverrides

When using a mixture of terminals with different Com Port settings than what you have entered through the Setup | Point of Sale | Point of Sale Tab, you will need to go in the Registry and specify these settings. You’ll enter a value in the Registry that will override the settings in the database. This value is called POSComPortOverrides.

These are registry entries that must be manually added to the HKEY_LOCAL_MACHINE\SOFTWARE\Snap Systems, Inc\WinSNAP key in the Windows registry. For those unfamiliar with the Windows registry, I will define a few new terms. The items displayed in a tree structure in the left-hand pane of the registry editor tool (regedit.exe) are called keys (and sub-keys). The named items in the right-hand pane are called values. The string or numeric information associated with a value is called the data. Therefore, you are adding a new value to the WinSNAP key.

The data associated with these values (POSComPortOverrides/POSComPortOverrides2) must be formatted as three pieces of information separated by spaces: the COM port number, the baud rate for that port, and whether or not terminals (Model 4 or Mira) will be used on that COM port. For example, to configure COM Port 1 for Mira terminals you would enter “1 19200 Y” as the data for either POSComPortOverrides or POSComPortOverrides2.

Note: As with the “Do you use Point of Sale Terminals?” question on the EZViews Point Of Sale setup page, there is no reason in modern WinSNAP to ever use No (“N”) as the third part of this data.

These entries are read and used by the POS engine when it starts up to tell it which COM ports to open as well as how to open them (baud rate). If POSComPortOverrides or both of these registry entries exist, then any configuration done on the Setup | Point of Sale | Point of Sale Tab will be totally ignored. This means that you cannot use EZViews to configure COM port 1 and
POSComPortOverrides to configure COM port 2. If you are configuring POS terminals on both COM ports, you must use POSComPortOverrides to configure one of the ports and POSComPortOverrides2 to configure the other port.

**Note:** If you are running POS Client on the same system with the POS engine, and you need to configure serial devices for use by POS Client, do not use these registry values. If you do, the POS engine will open the port when it starts. This will cause you to get an error when you start POS Client saying that it cannot open the COM port, because the engine already has it open. Set up serial devices through the Advanced Menu 4- Serial Device Configuration in POS Client.

**Tip:** The only time POSComPortOverrides2 will be needed is when you are configuring POS terminals (Model 4 or Mira) on both COM ports where the POS engine is running.

1. **Click** on the **Start Button** and select **Run**.
2. **Type in Regedit** and **click OK**.
3. To access the registry settings for WinSNAP, from the left panel of the Registry Editor screen, **double-click on the following** items:
   - HKEY_LOCAL_MACHINE
   - SOFTWARE
   - SNAP Systems, Inc.
   - WinSNAP
4. From the Menu Bar, **select Edit | New | String Value**.
   NewValue#1 will appear to the right.
5. **Type POSComPortOverrides**. This is one word with no spaces and it is case sensitive.
6. **Press Enter**.
7. **Double-click** on **POSComPortOverrides**.
   The Edit String screen will appear.
8. In the Value data field, **enter the Com Port number** that will be used by the device attached to this computer followed by a space. The choices are 1,2,3 or 4. Enter a space after the number.
9. Now **enter the speed of the device followed by a space**. The choices are 4800 or 19200. Be sure and add a space after the speed.

<table>
<thead>
<tr>
<th>Device</th>
<th>Baud Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 4 Terminal</td>
<td>4800</td>
</tr>
</tbody>
</table>
10. **Enter a Y.**

Once the entries have been made, the screen will look similar to this:

![Edit String](image)

11. **Click the OK Button.**

12. **Repeat steps 1-11** to set the POSComPortOverrides for all computers that will have devices attached.

### Setting the POSComPort Overrides

When using a mixture of terminals with different Com Port settings than what you have entered through the **Setup | Point of Sale | Point of Sale Tab**, you will need to go in the Registry and specify these settings. You'll enter a value in the Registry that will override the settings in the database. This value is called **POSComPortOverrides**.

**Caution:** Please read **Setting the POSComPortOverrides** before continuing.

**Note:** **POSComPortOverrides2** is not reserved for COM port 2. The "2" in the name is just there to make it unique from **POSComPortOverrides**. If you are configuring ports 1 and 2 it might be more intuitive to use **POSComPortOverrides** for port 1 and **POSComPortOverrides2** for port 2; however, it is the first part of the data that associates the value with a port. On some systems these might be used to configure COM ports 3 and 4.

**Note:** You cannot use **POSComPortOverrides2** without **POSComPortOverrides**. If you are configuring only one port you must use **POSComPortOverrides**. However, in this case it would be better to configure the port on the **Setup | Point of Sale | Point of Sale Tab**.

**Note:** If you are running Adara on the same system with the POS engine, and you need to configure serial devices for use by Adara, do not use these registry values. If you do, the POS engine will open the port when it starts. This will cause you to get an error when you start Adara saying that it cannot open the COM port, because the engine already has it open.
1. **Click** on the **Start Button and select Run**.
2. **Type in Regedit and click OK**.
3. To access the registry settings for WinSNAP, from the left panel of the Registry Editor screen, **double-click on the following** items:
   - `HKEY_LOCAL_MACHINE`
   - `SOFTWARE`
   - `SNAP Systems, Inc.`
   - `WinSNAP`
4. From the Menu Bar, **select Edit | New | String Value**.
   - NewValue#1 will appear to the right.
5. **Type POSComPortOverrides2**. This is one word with no spaces and it is case sensitive.
6. **Press Enter**.
7. **Double-click on POSComPortOverrides2**.
   - The Edit String screen will appear.
8. In the Value data field, **enter the Com Port number** that will be used by the device attached to this computer followed by a space. The choices are 1, 2, 3 or 4. **Enter a space** after the Com Port number.
9. Now **enter the speed of the device followed by a space**. The choices are 4800 or 19200. Be sure and add a space after the speed.

<table>
<thead>
<tr>
<th>Device</th>
<th>Baud Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 4 Terminal</td>
<td>4800</td>
</tr>
<tr>
<td>RF Terminal</td>
<td>4800</td>
</tr>
<tr>
<td>Mira Terminal</td>
<td>19200</td>
</tr>
</tbody>
</table>
10. **Enter a Y**.
    - Once the entries have been made, the screen will look similar to this:

<table>
<thead>
<tr>
<th>Edit String</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value name:</strong></td>
</tr>
<tr>
<td>POSComPortOverrides2</td>
</tr>
<tr>
<td><strong>Value data:</strong></td>
</tr>
<tr>
<td>1 4000Y</td>
</tr>
<tr>
<td>OK</td>
</tr>
</tbody>
</table>

11. **Click the OK Button**.
Model 4 Terminals

The Model 4 Terminal comes in several versions: Model 4B (RS232), Model 4C (RS422) and the Wireless (RS232).

The Display

The Model 4 Terminal display has 4 rows of 40 characters.

Anderson, Jane [B-0 L-0 $8.55] 0.00
L COMBO
HAMBERGER
MILK .25

Line 1

Line 1 displays the customer’s name and account balance. B-0 indicates that the customer has 0 (zero) breakfast credits. L-0 indicates zero lunch credits. The $8.55 indicates that she has $8.55 in her cash account before the items are deducted from her account. 0.00 indicates the amount that the customer will need to pay the cashier. In this case, since Jane has $8.55 in her cash account, the price of the meal will deduct from her cash account and she will not need to pay the cashier.

Line 2

Line 2 displays the first item that the cashier entered.

Line 3

Line 3 displays the second item that the cashier entered.

Line 4

Line 4 displays the third item that the cashier entered and the price for that item. The display is only showing the price for the last item entered because that it the display setting configured on the Setup | Point of Sale | Configuration Tab.
**Introduction to the Model 4 Terminal Keyboard**

The Model 4 keyboard has 80 programmable item keys and a function/number pad section. Click on the part of the keyboard to learn about it.

---

**Wiring Preparation and Installation for Model 4**

Please see the Point of Sale section under the WinSNAP - Out of the Box chapter for an extensive lesson in wiring and testing Point Of Sale circuits and other helpful related topics.

**Note:** See *Wiring Preparation and Installation for Mira* if using Mira and Model 4 terminals on the same machine.

**Note:** See *Going Wireless* for more information on wireless terminals.
Model 4B (RS232) Only
Connecting the Model 4 to the Computer

Required Parts
You will require the following equipment to connect the terminal to the computer:

- Model 4B (RS232) terminal
- Model 4 AC adapter
- 2 Jumper Cables
- 9 Pin Connector
Instructions
At the computer:
1. Connect a 9 Pin connector onto your chosen COM port of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices.
6. Turn the power switch to ON.
   You are ready to Sign-On.
Model 4C (RS422) Only
Connecting the Model 4C (RS422) to the Computer

Required Parts
You will require the following equipment to connect the terminal to the computer:

- Model 4C (RS422) terminal
- Model 4 AC adapter
- 2 Patch cables
- RS 232/RS 422 Converter
**RS 232/RS 422 Converter AC adapter**

Instructions

**At the computer:**
1. Connect an RS 232 / RS 422 Converter into your chosen COM port of the computer.
2. Plug the RS 232 / RS 422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS 232 / RS 422 Adapter.
4. Insert the other end of this jumper cable into the wall jack.

**At the Terminal:**
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
**Wireless with hard-wired Model B (RS232)**

This explains how to connect wireless and Model B (RS232) hard-wired terminals to the computer's serial port.

---

**Connecting RF RS232 with RS232**

---
Point of Sale Hardware Guide

Required Parts
When you order the RF kit, you will receive the following equipment:
With Hard-wired Terminals:

- Wireless POS terminal
- **Lawn II**
- 25 pin connector
- 2 way splitter
- 1 standard 9 pin connector
- Couple of jumper cables.

**Instructions For Connecting RF POS’s (RS232) With Model 4 or 4B Terminals (RS232)**

At the computer:
1. **Connect** a *WinSNAP 9-Pin Connector* (female) onto your chosen COM port of the computer.
2. **Connect** a *phone splitter* to the back of the 9-Pin Connector.
3. **Insert** an *RJ-11 cable* into one side of the phone splitter.
4. **Insert** the *other end* of this RJ-11 cable into the blue 25 Pin connector.
5. **Insert** the *blue 25 Pin connector* into the LawnII.
6. **Plug** the *LawnII power supply* into an electrical outlet.
7. **Insert another RJ-11 cable** into the other side of the phone splitter. The other end of this wire attaches to the Phone Jack/Connector block that leads to the POS Terminals in the cafeteria.

At the Remote RF:
1. **Plug** the *round end* in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closest to the front.
2. **Insert** the *AC adapter* into the electrical outlet.
3. **Turn** the *power switch* to OFF.
4. **Make sure** that the RF battery pack has charged overnight.
5. **Turn** the *power switch* to ON. You are ready to Sign-On.

In the cafeteria:
1. **Insert** an *RJ-11 cable* into the connector block located on the wall.
2. **Attach** the *other end of the RJ-11 cable* into one of the connection ports on the back of the Point of Sale terminal.
3. **Plug** the *Point of Sale power supply* into an electrical outlet.
4. **Press** the *red power button* on the back of the terminal.
   You are ready to Sign-On.
**Note:** When charging the RF battery pack, turn the power switch to OFF. The unit will not charge unless the switch is in the OFF position.
Wireless with hard-wired Model C (RS422)
This explains how to connect wireless and Model C (RS422) hard-wired terminals to the computer's serial port.

Connecting RF RS232 with RS422
Instructions For Connecting RF POS’s (RS232) With Model 4C Terminals (RS422)

At the computer:
1. Connect a **WinSNAP 9-Pin Connector** (female) onto your chosen COM port of the computer.
2. **Connect** a phone splitter to the back of the 9-Pin Connector.
3. **Insert** an **RJ-11 cable** into one side of the phone splitter.
4. **Insert** the **other end of this RJ-11 cable** into the blue 25-Pin connector.
5. **Plug** the **blue 25-Pin connector** into the LawnII.
6. **Plug** the **LawnII** into an electrical outlet.
7. **Insert** another **RJ-11 cable** into the other side of the phone splitter.
8. **Attach** the **Reverse 9-pin Connector** (male) to the other end of this RJ-11 cable.
9. **Attach** the **Reverse 9-pin connector** to the WinSNAP RS422 Converter, which has a separate AC Power Supply that is required in order for this part to work.
10. **Plug** the **AC Power Supply** for the WinSNAP RS422 Converter into an electrical outlet.
11. **Insert** another **RJ-11 cable** into the other end of the WinSNAP RS422 Converter. The other end of this wire attaches to the Phone Jack/Connector block that leads to the POS Terminals in the cafeteria.

At the Remote RF:
1. **Plug the round end** in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. **Insert** the **AC adapter** into the electrical outlet.
3. **Turn** the **power switch** to OFF.
4. **Make sure** that the RF battery pack has charged overnight.
5. **Turn** the **power switch** to ON. You are ready to Sign-On.

**Note:** When charging the RF battery pack, turn the power switch to OFF. The unit will not charge unless the switch is in the OFF position.

In the cafeteria:
1. **Insert** an **RJ-11 cable** into the connector block located on the wall.
2. **Attach** the **other end of the RJ-11 cable** into one of the connection ports on the back of the Point of Sale terminal.
3. **Plug** the **Point of Sale power supply** into an electrical outlet.
4. **Press** the **red power button** on the back of the terminal. You are ready to Sign-On.

**Tip:** Can't get wireless model 4 terminal and hard wired terminals to work together? Possible solution: Try replacing, one at a time, the jumper cables that connect to the 2 way splitter behind the computer with straight cables. One jumper goes to the wireless master unit, the other goes to the phone jack leading to the hardwired terminals. The standard jumper cables included with the accessories kit and the wireless master unit arrive with Reversed cables (standard phone cables). Straight jumper cables can be requested from the **RMA** Department in Santa Monica. In cases where this has solved the problem only one of the 2 standard jumper cables needed to be replaced with the straight.

To determine if a jumper cable is 'standard' or 'straight', hold the ends so that the connectors are side by side. If the colors are in the SAME ORDER left to right at both ends (example, both ends: left to right are yellow, green, red, black), then it is a 'straight through' cable. If the colors are in REVERSE ORDER from one end to the other (example, one end left to right is yellow, green, red, black and the other end, left to right, is black, red, green, yellow), then it is a 'standard' cable.
Setting Terminal Dip Switches

Dip switches are used to configure the POS unit. There are eight (8) of them, accessible through the back of the case. **Please pay particular attention to the switch numbers. They are not necessarily numbered 1 on the left and 8 on the right.** In fact, 8 is probably on the left and 1 is probably on the right. They are numbered inside, and you can see them and their numbers through a rectangular slot in the back.

**Tip:** Use a ball point pen to move the switches up or down. (Don’t use a pencil, as the lead could break off and fall into the unit.)

**Input Device Dip Switch Chart - Dip Switches #2 And #3**

If you are using input devices such as *Bar Code* Slot Readers, Wand Readers, Hand-Held Readers, etc., set dip switches 2 and 3 according to this chart:

**Note:** This only applies to Model 4s.

**Caution:** This setting does not apply to “7.85” and “7.86” chip-based terminals. Turn your POS on, and see what version it displays. If it is 7.81, read and follow this sub-section; if 7.85, ignore switch 2 and 3 settings.

<table>
<thead>
<tr>
<th>INPUT DEVICE</th>
<th>DIP SWITCH 2</th>
<th>DIP SWITCH 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIGHT Only</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>LEFT Only</td>
<td>Off</td>
<td>On</td>
</tr>
<tr>
<td>BOTH Connected</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>NEITHER Connected</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>
Setting the Point-Of-Sale Terminal Address

Dip Switches #4 Through #8

In order to work properly, each WinSNAP POS terminal at one site must have a different “address” or identification number. When you first power up a POS, you will see the “Terminal ID#” displayed.

Note: If using the new Mira terminal, you can set the address using the Terminal Settings Feature.

<table>
<thead>
<tr>
<th>Terminal Address</th>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>8</td>
<td>2,3,4,5,6,7</td>
</tr>
<tr>
<td>02</td>
<td>7</td>
<td>2,3,4,5,6,8</td>
</tr>
<tr>
<td>03</td>
<td>7,8</td>
<td>2,3,4,5,6</td>
</tr>
<tr>
<td>04</td>
<td>6</td>
<td>2,3,4,5,7,8</td>
</tr>
<tr>
<td>05</td>
<td>6,8</td>
<td>2,3,4,5,7</td>
</tr>
<tr>
<td>06</td>
<td>6,7</td>
<td>2,3,4,5,8</td>
</tr>
<tr>
<td>07</td>
<td>6,7,8</td>
<td>2,3,4,5</td>
</tr>
<tr>
<td>08</td>
<td>5</td>
<td>2,3,4,6,7,8</td>
</tr>
<tr>
<td>09</td>
<td>5,8</td>
<td>2,3,4,6,7</td>
</tr>
<tr>
<td>10</td>
<td>5,7</td>
<td>2,3,4,6,8</td>
</tr>
<tr>
<td>11</td>
<td>5,7,8</td>
<td>2,3,4,6</td>
</tr>
<tr>
<td>12</td>
<td>5,6</td>
<td>2,3,4,7,8</td>
</tr>
<tr>
<td>13</td>
<td>5,6,8</td>
<td>2,3,4,7</td>
</tr>
<tr>
<td>14</td>
<td>5,6,7</td>
<td>2,3,4,8</td>
</tr>
<tr>
<td>15</td>
<td>5,6,7,8</td>
<td>2,3,4</td>
</tr>
<tr>
<td>16</td>
<td>4</td>
<td>2,3,5,6,7,8</td>
</tr>
<tr>
<td>17</td>
<td>4,8</td>
<td>2,3,5,6,7</td>
</tr>
<tr>
<td>18</td>
<td>4,7</td>
<td>2,3,5,6,8</td>
</tr>
<tr>
<td>19</td>
<td>4,7,8</td>
<td>2,3,5,6</td>
</tr>
<tr>
<td>20</td>
<td>4,6</td>
<td>2,3,5,7,8</td>
</tr>
<tr>
<td>21</td>
<td>4,6,8</td>
<td>2,3,5,7</td>
</tr>
<tr>
<td>22</td>
<td>4,6,7</td>
<td>2,3,5,8</td>
</tr>
<tr>
<td>23</td>
<td>4,6,7,8</td>
<td>2,3,5</td>
</tr>
<tr>
<td>24</td>
<td>4,5</td>
<td>2,3,6,7,8</td>
</tr>
<tr>
<td>25</td>
<td>4,5,8</td>
<td>2,3,6,7</td>
</tr>
<tr>
<td>26</td>
<td>4,5,7</td>
<td>2,3,6,8</td>
</tr>
<tr>
<td>27</td>
<td>4,5,7,8</td>
<td>2,3,6</td>
</tr>
<tr>
<td>28</td>
<td>4,5,6</td>
<td>2,3,7,8</td>
</tr>
<tr>
<td>29</td>
<td>4,5,6,8</td>
<td>2,3,7</td>
</tr>
<tr>
<td>30</td>
<td>4,5,6,7</td>
<td>2,3,8</td>
</tr>
<tr>
<td>31</td>
<td>4,5,6,7,8</td>
<td>2,3</td>
</tr>
</tbody>
</table>

Caution: Terminal 0 is reserved for the Manager’s computer. Please DO NOT set your Point of Sale terminal to 0.
**Tip:** You can number your terminals any number from 1 through 31; however, we recommend that you number your terminals consecutively from 1 to the number of terminals in use. For example, if you have 5 terminals, you should number them 1 - 5.

**Tip:** Remember to consider any spare terminals in your number sequence. You don’t want to have to worry about terminal addresses when one of your terminals break down and you have to bring one out of the closet as a spare.
Mira Terminals

The new Mira terminal has a new 16 line display, two serial ports and two barcode ports that accommodates barcode readers, PIN pads and scanners.

Mira allows you to set the terminal address through the Terminal Settings Feature - no more trying to remember dip switch settings.

Caution: If you use Mira terminals and Model 4 terminals on the same computer, use separate COM ports.

The Display

The new Mira Terminal display has 16 rows of 40 characters. The display is divided into 6 sections. Rest your cursor over the different parts to view the name and click on the parts to view information about each section.

<table>
<thead>
<tr>
<th>Galarza, Ann</th>
<th>04/400</th>
<th>Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAK: 0</td>
<td>DIN: 0</td>
<td>CASH: 0</td>
</tr>
</tbody>
</table>

- **HAMBURGER**
- **FR FRIES**
- **PEARS**
- **PEACHES** .35

<table>
<thead>
<tr>
<th>SubTotal:</th>
<th>.35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account:</td>
<td>.00</td>
</tr>
<tr>
<td>Amount Owed: $</td>
<td>.35</td>
</tr>
</tbody>
</table>

Customer in queue. Press Queue ID# Key. $0.35 Finished.

Input Line Section

The Input line section displays the information that you are currently entering such as the customer ID, the word “Item” when you are entering items or the amount of cash you are entering.

Customer Demographics Section

The Customer Demographics section contains the Customer Account Information such as the customer’s breakfast credits, lunch credits, account cash, grade and homeroom. This section also displays the number of customers currently in the Queue.
Item List Section

The Item List section displays the items you have entered for this transaction.

HAMBURGER
FR FRIES
PEARS
PEACHES .35

Dietary Restrictions/Terminal Display Section

When information is entered in the Terminal Display field on the Customer Information Tab, that information will display in the Dietary Restrictions/Terminal Display Section and the Message Section. The Terminal Display field information will display on the first line of the Dietary Restrictions/Terminal Display Section and the Dietary Restrictions information will display on the second line.

See Manager
No Milk!

SubTotal: .00
Account: .00
Amount Owed: .00

SEE MANAGER   No Milk!
SubTotal/Account Section
The SubTotal/Account Section displays the subtotal amount of the current transaction and the customer’s account balance.

<table>
<thead>
<tr>
<th>SubTotal:</th>
<th>.35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account:</td>
<td>.00</td>
</tr>
</tbody>
</table>

Amount Owed Section
The Amount Owed Section displays the amount the current customer owes. This amount is determined by taking the subtotal amount and subtracting or adding any account balance.

| Amount Owed: | .35 |

Message Section
The Message Section displays informational and error messages. There are a number of messages generated by Point of Sale. Click here to view those messages.

Customer in queue. Press Queue ID# Key.
$0.35 Finished.

When information is entered in the Terminal Display field on the Customer | Information Tab, that information will display in the Dietary Restrictions/Terminal Display Section and the Messages Section. If both are entered, the Terminal Display field information will display first and the Dietary Restrictions information will display second.

SEE MANAGER No Milk!

Help Screen
Once the Help Key has been selected, the Help Screen will display. The Help Screen assists in completing the current transaction. The Help Screen offers scrolling capabilities via the Up and Down Arrow Keys.

Select 1- Change Keyboard, 2- Enter Item Code, 3- Transaction Void and ENTER.

Press Help again to exit

Tip: Select the Help Key again to dismiss the Help Screen.
Flavors Screen

The Flavors Screen pop up box appears when you have flavored items defined in your database. Select the corresponding number to select the item or use the Up and Down Arrow Keys to move to the desired flavor and select the Enter Key.

- 1. Chocolate Milk
- 2. 1% Milk
- 3. 2% Milk
- 4. Strawberry Milk

The flavor capability allows districts to set their terminals up to have more item selections. Instead of placing all the flavors of chips on the printed keyboard, pressing the “chips” Item Key would pop up a screen offering a cashier a choice of flavors. Click here to learn more about flavors.

**Note:** To select multiple flavors of the same item, repeat the item selection to select the second flavor.

Queue Screen

The Queue Screen pop up box appears when you have any queued customers and you have selected the Queue ID Key. The first customer entered will be at the top of the list. The Queue Screen shows 10 queued customers at once. Enter the corresponding number to select the desired customer.

- 1. Harvey, Sally
- 2. Campbell, Zach
- 3. Gomez, John
- 4. Guidos, Dan

Advanced Menu Screen

The Advanced Menu Key allows you to enter other options at the point of sale. When you select the Advanced Menu Key, the following options display. Enter the corresponding number to select the desired option.

- 1. Change Keyboard
- 2. Enter Item Code
- 3. Void Transaction

1- Change Keyboard
The Change Keyboard option allows you to change to a keyboard other than the one set at the current session default. To do this:
1. **Select 1 - Change Keyboard.**
   A list of all keyboards will display.
2. **Type in** the number of the **desired keyboard.**
3. **Select** the **Enter** Key.
   You will get a confirmation message and the new keyboard will display in the **Item Keys Section.**

2- **Enter Item Code**
The Enter Item Code option allows you to enter an item that is not associated on a keyboard. To do this:
   1. **Select 2 - Enter Item Code.**
   2. **Enter** the **item's ID** number.
   3. **Select** the **Enter** Key.
      The item will display just as if you had selected it from the keyboard.
   4. **Proceed with the transaction.**

3- **Void Transaction**
The Void Transaction option allows you to void a transaction from a previous point of sale session. You **must** know the transaction number in order to do this.
   1. **Select 3 - Void Transaction.**
   2. **Type in** the number of the **transaction** you would like to void.
   3. **Select** the **Enter** Key.
      See **POS Editing Introduction** for more information.

**Note:** The back light will go off after about 45 seconds of non-use. It will come back on when any key is selected.

**The Keyboard**
The Mira Keyboard is similar to the Model 4 keyboard, though there are some enhancements.
Mira Configuration

Setup | Point of Sale
See the Setup | Point of Sale Tab for instructions on setting the port speed for Mira terminals.

Terminal Settings Feature
The Terminal Settings Feature allows you to modify the terminal settings using the terminal keys. The settings that can be updated are terminal ID, main communications port speed, and the types (input, output, I/O, off) and speeds (4800, 9600, 19200) of both serial ports.

To use this feature:

1. **Turn off** the **terminal**.
2. **Press and hold** the "7" key while turning on the terminal.
3. **Release** the "7" key.
   You will see the following screen on the terminal display:
   
   ```
   SETTINGS
   Terminal ID: 000
   Comm. Speed: 19200
   Port 1 Type: Off
   Port 1 Speed: 9600
   Port 2 Type: Off
   Port 2 Speed: 9600
   Wireless?: N
   ```

4. Use the down arrow to **move to** the **Terminal ID: line**.
   The selected line is determined by the blinking block cursor.
5. Press the left and right arrows (located on the item keyboard) to **change** the **terminal address** to the desired number.
6. Use the down arrow to **move to** the **Comm. Speed: line**.
7. Press the left and right arrows to **change speed** to the **19200**.
8. **Select** the **Enter Key** on the terminal to accept and save all of the settings.
9. **Restart** the **terminal**.

**Tip:** The Wireless option was added as a feature to test for the signal from a wireless modem. The default for this setting is N which means that this is not a wireless terminal and there is no need to test.

Changing the setting to Y indicates that this is a wireless terminal. You will see the word "Wait" and a growing line of asterisks while the terminal
searches for the signal from the wireless modem when you turn on the terminal. This search will take approximately 5 seconds.

**Note:** The Port 1 Type, Port 1 Speed, Port 2 Type and Port 2 Speed fields are future features.

**The Mira Keyboard**

**Item Keys**

The Items Keys section of the keyboard is exactly like the keyboard on the Model 4 terminals. There are 80 programmable keys.
Function Keys

The Function Keys on the Mira have been enhanced. See Graphic Terminal to POS Client Conversion and Training Considerations for an explanation of changes.

**Caution:** The Mira terminal has a decimal key, unlike the Model 4 terminals. For experienced Model 4 terminal users, this is an important difference. 1000 entered on a Model 4 is $10, but on a Mira terminal 10 or 10.00 is $10.
Wiring Preparation and Installation for Mira

Please see General Wiring Information and Techniques for an extensive lesson in wiring and testing Point Of Sale circuits and other helpful related topics.

Mira RS232 Only
Connecting Mira to the Computer
Required Parts
You will require the following equipment to connect the Mira terminal to the computer:

- **Mira RS232 terminal**
- **Mira AC adapter**
- **2 Jumper Cables**
- **9 Pin Connector**

Instructions for Setting up Mira RS232

At the computer:
1. Connect a 9 Pin connector onto your chosen COM port of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices.
6. Turn the power switch to ON.

   You are ready to Sign-On.
Mira RS422 Only
Connecting Mira to the Computer

Required Parts
You will require the following equipment to connect the Mira terminal to the computer:

- Mira RS422 terminal
- Mira AC adapter
- 2 Patch cables
- RS 232/RS 422 Converter
• **RS 232/RS 422 Converter AC adapter**

Instructions for Setting up Mira

At the computer:
1. Connect an RS 232 / RS 422 Converter into your chosen COM port of the computer.
2. Plug the RS 232 / RS 422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS 232 / RS 422 Adapter.
4. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   
   You are ready to Sign-On.
Mira RS232 with Model 4 RS232
In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

Connecting to the Computer

Required Parts
You will require the following equipment to connect the Mira terminal to the computer:

- **Mira RS232 terminal**
- **Mira AC adapter**
- **Model 4 RS232 terminal**
- **Model 4 AC adapter**
- **2 9 Pin Connectors**
- **4 Patch cables**
Instructions
At the computer (COM 1):
1. Connect a 9 Pin connector into COM 1 of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the computer (COM 2):
1. Connect a 9 Pin connector into COM 2 of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
**Mira RS232 with Model 4 RS422**

In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

Connecting to the Computer

![Diagram of Mira RS232 and Model 4 RS422 connection]

**Required Parts**

You will require the following equipment to connect the Mira terminal to the computer:

- **Mira RS232 terminal**
- **Mira AC adapter**
- **Model 4 RS232 terminal**
- **Model 4 AC adapter**
- **1 9 Pin Connector**
- **1 RS 232/422 Converter**
- **1 RS 232/422 Converter AC adapter**
- **4 Patch cables**
Instructions

At the computer (COM 1):
1. Connect a 9 Pin connector into COM 1 of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the computer (COM 2):
1. Connect an RS 232/422 Converter into COM 2 of the computer.
2. Plug the RS 232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS 232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
Mira RS422 with Model 4 RS232

In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

Connecting to the Computer

Required Parts

You will require the following equipment to connect the Mira terminal to the computer:

- **Mira RS422 terminal**
- **Mira AC adapter**
- **Model 4 RS232 terminal**
- **Model 4 AC adapter**
- 4 **Patch cables**
- 1 **RS 232/RS 422 Converter**
- 1 **RS 232/RS 422 Converter AC adapter**
- 1 **9 Pin connector**
Instructions
At the computer (COM 1):
1. Connect an RS 232/422 Converter into COM 1 of the computer.
2. Plug the RS 232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS 232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.

At the computer (COM 2):
1. Connect a 9 Pin connector into COM 2 of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
Mira RS422 with Model 4 RS422
In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

Connecting to the Computer

Required Parts
You will require the following equipment to connect the Mira terminal to the computer:

- Mira RS422 terminal
- Mira AC adapter
- Model 4 RS422 terminal
- Model 4 AC adapter
- 4 Patch cables
- 2 RS 232/RS 422 Converters
- 2 RS 232/RS 422 Converter AC adapters
Instructions
At the computer (COM 1):
1. Connect an RS 232/422 Converter into COM 1 of the computer.
2. Plug the RS 232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS 232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.
At the computer (COM 2):
1. Connect an RS 232/422 Converter into COM 2 of the computer.
2. Plug the RS 232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS 232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.
At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
Wireless Mira Only
Connecting to the Computer

Required Parts
You will require the following equipment to connect the Mira terminal to the computer:

- **Wireless Mira RS232 terminal**
- **Wireless Mira AC adapter**
- Tan 9-pin connector
- Tan 25-pin connector
- Phone cable (usually 100 feet)
- **Lawn II** and AC adapter
Instructions

At the computer:
1. Connect the Tan 9-pin connector into COM 1.
2. Plug the phone cable into the Tan 9-pin connector.
3. Plug the Tan 25-pin connector into the Lawn II.
4. Plug the other end of the phone cable into the Tan 25-pin connector.
5. Insert the AC adapter into the electrical outlet.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.

You are ready to Sign-On.
**Wireless Mira with Model 4 RS232**

In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

**Connecting to the Computer**

![Diagram of Mira and Model 4 terminals connected to a computer.]

**Required Parts**

You will require the following equipment to connect the Mira terminal to the computer:

- Wireless Mira RS232 terminal
- Wireless Mira AC adapter
- Model 4 RS232 terminal
- Model 4 AC adapter
- 9 Pin connectors
- 2 Patch cables
- Lawn II and AC adapter
- Serial Modem Cable (comes with LawnII)
Instructions
At the computer (COM 1):
1. Connect the serial modem cable into COM 1 of the computer.
2. Insert the other end of the serial modem cable into the Lawn II.
3. Plug the Lawn II AC adapter into the electrical outlet.

At the computer (COM 2):
1. Connect a 9 Pin connector into COM 2 of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
**Wireless Mira with Model 4 RS422**

In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

Connecting to the Computer

![Diagram showing the connection setup between Mira and Model 4 terminals]

**Required Parts**

You will require the following equipment to connect the Mira terminal to the computer:

- Wireless Mira RS232 terminal
- Wireless Mira AC adapter
- Model 4 RS232 terminal
- Model 4 AC adapter
- RS 232/RS 422 Converter
- RS 232/RS 422 Converter AC adapter
- 2 Patch cables
- Lawn II and AC adapter
- Serial Modem Cable (comes with the Lawn II)
Instructions
At the computer (COM 1):
1. Connect a Serial Modem Cable into COM 1 of the computer.
2. Insert the other end of the Serial Modem Cable into the Lawn II.
3. Plug the Lawn II AC adapter into the electrical outlet.

At the computer (COM 2):
1. Connect an RS 232/RS 422 Converter into COM 2 of the computer.
2. Plug the RS232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) in to the RS232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
Wireless Mira with Mira RS232 and Model 4 RS422
In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

Connecting to the Computer

Required Parts
You will require the following equipment to connect the Mira terminal to the computer:

- Wireless Mira RS232 terminal
- Wireless Mira AC adapter
- Mira RS232 terminal
- Mira AC adapter
- Model 4 RS232 terminal
- Model 4 AC adapter
- Phone splitter
- 1 9 Pin connectors
- RS 232/RS 422 Converter
- **RS 232/RS 422 Converter AC adapter**
- **5 Patch cables**
- **Special 25 Pin connector** (order from SLT)
- **Lawn II** and AC adapter

**Instructions**

**At the computer (COM 1):**
1. Connect a 9 Pin connector into COM 1 of the computer.
2. Insert a phone splitter into the 9 Pin connector.
3. Insert a jumper cable (RJ-11) into one side of the phone splitter.
4. Insert the other end of this jumper cable into the special 25 Pin connector.
5. Insert the special 25 Pin connector into the Lawn II.
6. Insert a jumper cable (RJ-11) into the other side of the phone splitter.
7. Insert the other end of this jumper cable into the wall jack.

**At the computer (COM 2):**
1. Connect an RS 232/RS 422 Converter into COM 2 of the computer.
2. Plug the RS232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) in to the RS232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.

**At the Wireless Mira Terminal:**
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.
   You are ready to Sign-On.
At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round
   connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP -
   Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round
   connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP -
   Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
Mira Reference Guide for Cashiers

Most transactions are performed the same on Mira as with the Model 4 terminals. The exception being that there is more information displayed on the Mira. Here are a few examples of where the keystrokes are a little different.

Name Search
The Name Search Key is used to look up customers alphabetically by the last name.

1. **Select** the **Name Search Key**.
2. On a terminal, the top three rows of item keys also have tiny alphabetic characters in the bottom left of the button. **Press** in the **first few letters** of the last name.

**Tip:** You can type the entire name, if desired. Example: Brant, William. Be sure to include the space and the comma. This is very helpful for common last names.

3. **Select** the **Enter Key**.
4. **Scroll** through the list of names using the Up and Down Arrow Keys.
5. **Select** the **OK Key** when the name of the customer you want is displayed.

**Tip:** The OK Key is located in the last column of the Item Keys.

6. **Proceed** with the transaction.

Queuing
1. **Select** the **Queue ID# Key** to view the customers currently in the Queue.
2. **Use** the **corresponding number** to select the desired customer.
3. **Proceed** with the transaction.

**Note:** There is no Cancel option on the Queue Screen. Use the Clear Current Key to get out of the queue.

Flavors
When you select an item that has associated flavors, a selection box will appear.

1. **Use** the **corresponding number** to select the desired flavor.
2. **Proceed** with the transaction.
**Introduction to the Mira-IP**

The Mira-IP terminal is different from the standard Mira terminal in that it has two sets of firmware which contain special programming; the standard Mira motherboard firmware and Digi-Connect ME firmware (the TCP/IP communication device). The Mira motherboard firmware is pre-programmed and requires no setup. However, the command set has been extended and now includes functionality to configure the IP communication side with additional screen prompts. Once programmed, the Digi-Connect ME can be located via HTTP protocols over TCP/IP, including a Web browser.

The new Mira-IP terminal has a new 16 line display, two serial ports and two barcode ports that accommodates barcode readers, PIN pads and scanners.

**Note:** For use with School-Link Technologies’ line of Point of Sale software, WinSNAP 2.1.6 and higher, WebSMARTT 1.3 and higher.

**Tip:** Mira allows you to set the terminal address through the **Terminal Settings Feature** - no more trying to remember dip switch settings. Click here to view **Configuration Instructions**.

**Caution:** If you use Mira terminals and Model 4 terminals on the same computer, use separate COM ports.

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**Mira-IP Software Compatibility**

The current version of the Mira-IP firmware as of the date of this document is 11.01.

<table>
<thead>
<tr>
<th>POS Software</th>
<th>Mira-IP</th>
</tr>
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<tbody>
<tr>
<td>WinSNAP 2.1.6 (with all current Hotfix files)</td>
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</tr>
<tr>
<td>WinSNAP 2.1.7 (with all current Hotfix files)</td>
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<tr>
<td>WebSMARTT 1.3</td>
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<tr>
<td>WebSMARTT 1.4</td>
<td>✔</td>
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<tr>
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<td>Not Compatible</td>
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Specifications

Physical and Environmental
Fire-Resistant ABS Material
MicroChip 18F452 Micro Processor
Digital Input/Output Connections – 2 RJ11, 1 RJ45
2 Five-Pin Grounded DIN Connections for input devices
Polarized Coaxial Power Supply Connection
LCD Display With High Contrast Filter (640 Character Display)
Single Circuit Board Replacement Maintenance
Color: Charcoal
Size (Without Drawer): 10 x 16.5 x 13 (3 lbs.)
Size (With Drawer): 6 x 12.5 x 13 (14.6 lbs.)
Highly Spill resistant
Operating temperature: 0-50°C / 32-125°F

Ethernet Interface
Ethernet II, IEEE 802.3, 10base-T
Protocols supported: ARP, ICMP, UDP, TCP and IP
Network Services: HTTP,Telnet,SNMPv2,DHCP,IPSec(manually keyed) and static IP
Connector/Speed: RJ45, 10mbps

Network Management
Add to any standard network monitor utility using IP address and SNMP
WebSMARTT POS Engine displays connection diagnostics and real-time transactions
of each POS terminal

Setup Options
Configure network interface via terminal BIOS menu, HTTP or Telnet
Configure input devices, serial port speed and wireless options via BIOS menu

Communications/Logical
Pull-Up Terminals Resistance Switch For Multi-Drop Configuration Capability

Keyboard
Membrane Switch, Multi-Layer, Flat, Silver Contacts
800 Programmable Keys, Fixed Function Keys, 10 digit Numeric Keyboard
Washable/Removable Menu Template

Terminal Power Supply
Input: 120 VAC @60hz, 50w Current; Output: 9 VAC, 31VA, UL Listed, Fused
Current: 0.035 Amperes; Power: 3.5 Watts
Size: 2.25 x 2.5 x 3.25” (3 lbs.)

Cash Drawer
Heavy-Duty Steel Case, Spring-loaded Release With Bell
4 Bill Slots/4 Coin Slots, Tamper Proof Lock With Key
Optional Lockable Cover
Size: 4 x 13 16.5” (12 lbs.)

Warranty
6 months included Annual extended warranties available
Unpacking Instructions
1. Make sure you have these parts:
   - Mira-IP terminal
   - Power Supply
   - Attached Cash Drawer (optional)
   - Input device (not included)
   - Network cable (not included)
2. Take the Mira-IP (with optional attached cash drawer) out of the box and remove the plastic wrapping.
3. Connect the Mira-IP to the nearest configured network using the network cable.
4. Connect the Mira-IP to the power outlet using the Mira-IP AC adapter.

Cleaning and Maintenance of the Mira-IP terminal
The keypad surface is easy to clean by wiping with a damp cloth. Common cleaning solutions (non-abrasive) may be used; however, these should also be applied with a damp cloth, not sprayed. Keep in mind that the more aggressive the cleaning solution, the more quickly the keypad may fade. There is no other user maintenance required.

**CAUTION:** The unit must never be immersed in water.

Configuration Instructions

Programming the Mira-IP terminal using the Mira Configuration Menu
1. Follow instructions on **unpacking the Mira-IP**.
2. Connect the Mira-IP to the nearest configured network using the network cable.
3. Connect the Mira-IP to the power outlet using the Mira-IP AC adapter.
4. Press and hold the **7 key** while turning on the terminal.
5. Release the 7 key.
   You see the following screen on the terminal display. The selected line is determined by the blinking block cursor.
6. Use the down arrow to move the cursor to the Terminal ID: line.
7. Press the left and right arrows to change the terminal address to the desired number.

**Note:** In order to work properly, each WinSNAP POS terminal at one site must have a different “address” or identification number. When you first power up a POS, you will see the “Terminal ID#” displayed.

6. Use the down arrow to move the cursor to the **Comm. Speed:** line.
7. Press the left and right arrows to change speed to the 19200.
8. Use the down arrow to move the cursor to IP?: line.
9. Press the left and right arrows to change to Y.

You should see the following:

- Local IPAddr: 172.17.2.15
- Subnet Mask: 255.255.0.0
- Gateway IP: 177.17.2.1
- RemoteIPAddr: 172.17.100.89
- IP Port: 2121

**Note:** These numbers may vary.

**Tip:** If this terminal was previously set to IP, you will see the IP settings (see step 16).

10. Use the down arrow to select the **Local IPAddr:** line. Enter the local IP address. This will be the address of this terminal. Your local IT department will supply this number. Example: 172.17.2.35
11. Use the down arrow to select the **Subnet Mask**: line. Enter the local subnet mask number. Your local IT department will supply this number. Example: 255.255.0.0

12. Use the down arrow to select the **Gateway IP**: line. Enter the gateway IP. Your local IT department will supply this number. Example: 172.17.2.1

13. Use the down arrow to select the **RemoteIPAddr**: line. This is the address of the cafeteria manager’s computer. Example: 172.17.100.35

14. Use the down arrow to select the **IP Port**: line. Verify that 2121 is entered. This is the port that is used to communicate to the POS engine.

15. When finished, press the **Enter Key**.

16. Press the **Enter Key** again when the IP Adapter is ready.

**Note:** The IP device takes approximately one minute to complete the startup process. If ENTER is pressed too soon, the configuration may not save, and you will have to start the configuration over again. You can verify that the device has finished its boot process by looking at the LED lights (green and yellow) on the RJ45 network connector at the back of the device. The device is ready when both lights are not solid.

You should see the following:

- Writing IP Addr
- Writing SubNet
- Writing Gateway
- Writing Host IPP
- Writing Port
- Saving Settings (turns into Resetting IP Adapter)

The terminal saves the settings and reboots.

17. When you hear a beep and the screen indicates "Initializing IP address” turn the terminal off and then turn it on again.

   If you get an Error Writing Settings message, start the configuration over again.

**Programming the Mira-IP terminal using Internet Explorer**

The Mira-IP terminal does not require programming via Web browser. This feature is available for advanced users, as the device contains a built-in Web server for configuration.
**Note:** The Mira-IP must have previously been configured once via the Mira configuration menu prior to using this method because you will need a previously established IP address to connect to.

1. Follow instructions on **unpacking the Mira-IP**.
2. Connect the Mira-IP to the nearest configured network using the network cable.
3. Connect the Mira-IP to the power outlet using the Mira-IP AC adapter.
4. Turn on the terminal and wait approximately one minute.
5. From a computer on the network, change the IP address of the computer to a static IP that matches the LAN settings of the Mira-IP terminal previously set.
   To do this, from the Start menu, select Settings, and then select Control Panel (For Windows XP, from the Start menu, select Control Panel).
6. Double-click Network Connections, then right-click Local Area Connection and select Properties.
7. Scroll the list down to Internet Protocol (**TCP/IP**) and select Properties.
8. Fill the boxes out as follows and then click OK.

   ![Image of Internet Protocol (TCP/IP) Properties dialog]

   The addresses above are within the defaulted range that has been applied to the Mira-IP.

9. Once you have completed this task, open Internet Explorer, enter 172.17.2.35 and click GO.
   The following dialog box appears. The user name is SLT, and the password is P4ssw0rd.
10. Click OK.
The following screen will appear:

11. In the Unit IP Address field, enter the local IP address of the Mira-IP terminal. Your local IT department will supply this number. Example: 255.255.0.0

**Note:** You must enter the IP for the device if not DHCP. See the Setup DNS section of this document for more information on setting the DHCP.

11. In the Subnet Mask field, enter the local subnet mask number. Your local IT department will supply this number. Example: 255.255.0.0

12. In the Default Gateway field, enter the gateway IP. Your local IT department will supply this number. Example: 172.17.2.1
13. In the HostIP/URL field, enter the address of the cafeteria manager’s computer. Example: 172.17.100.35
14. In the Host IP Port field, verify that 2121 is entered. This is the port that is used to communicate to the POS engine.
15. Click OK.
   The following screen appears:
   ![Screen capture of ConnectME Remote Management Console]

   16. Reboot the terminal.

**Setup DNS**

This section needs to be set on the internet.

1. Follow instructions on [unpacking the Mira-IP](#).
2. Connect the Mira-IP to the nearest configured network using the network cable.
3. Connect the Mira-IP to the power outlet using the Mira-IP AC adapter.
4. Turn on the terminal and wait approximately one minute.
   The IP address will display:
   IP Addr 172.17.2.15

5. Write this number down.
6. Open Internet Explorer.
7. Enter that IP address of into the Address field.
   Example: 172.17.2.15
The following dialog box appears. The user name is SLT, and the password is P4ssw0rd.

8. Click OK.

The following screen will open:

9. In the Unit IP Address field, enter 0.0.0.0
10. In the Subnet Mask field, blank out the numbers in the field.
11. In the Default Gateway field, blank out the numbers in the field.
12. In the HostIP/URL field, enter the address of the cafeteria manager’s computer. Example: 172.17.100.35
13. In the Host IP Port field, verify that 2121 is entered. This is the port that is used to communicate to the POS engine.
14. Click OK.

The following screen appears:

15. Reboot the Mira-IP terminal.

**Using the Mira-IP terminal**

Once the terminal has been configured, you can connect to POS on the host system (the manager’s system you programmed the MIRA to point to).

When powering on the MIRA-IP terminal, you see: “Initializing IP... Please Wait”.

It then displays:
“IP Address:  172.17.2.35 (or the one you had entered).

The MIRA-IP will display:
“Connecting to Host”
“Enter your Cashier ID and press Sign-On”

- **Mira Reference Guide for Cashiers**
## Mira-IP Troubleshooting

### What problem are you having?

<table>
<thead>
<tr>
<th>The Mira-IP does not work</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our Diagnosis</td>
<td>Turn the terminal off and turn back on</td>
</tr>
<tr>
<td></td>
<td>Ping the address from the machine to the terminal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The ConnectME Remote Management Console Page doesn’t open</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our Diagnosis</td>
<td>The Mira-IP is not plugged in or turned on</td>
</tr>
</tbody>
</table>

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Wireless Terminals

There are many advantages to using wireless technology. It is a proven technology that has been stable for several years. Its low cost and convenience allows you to spread your food service operations across the campus.

Going wireless provides an easy solution for almost any cabling problem. Wireless RF Point of Sale kits can be used with or without wired terminals for such uses as rolling serving carts or at remote serving locations.

The installation of the LAWN II and LAWN II+ is very easy. The modems will arrive pre-configured and ready to connect.

The LAWN II is a radio modem that contains a spread spectrum transceiver and a packet radio micro controller. It is mainly for low-cost, short-range, up to 300 feet (or more with special antennas) indoor applications with an optional internal battery pack for portable mobile communications.

The LAWN II+ has an exceptionally sensitive receiver and when it is used with high-gain Yagi antennas, it can cover a distance of more than 14 miles. An OEM version of this high performance modem is what is installed in the School-Link Technologies integrated wireless Point of Sale terminal.

Wireless Configurations

This document contains various cafeteria scenarios with configurations to determine the best setup for your needs:

Scenario 1

Scenario 1 starts with a basic cafeteria setup. The manager’s computer is in an office near the back of the kitchen. There are two terminals sitting on a stainless steel serving table just outside the kitchen. There is a food cart across the cafeteria on the other side of the seating area and a café set up with three terminals adjacent to the cafeteria.

Minimum Configuration

The minimum configuration for Scenario 1 begins with a LAWN II connected to the manager’s computer. There is one wireless terminal in each serving area with any additional terminals daisy-chained to it. See Figure 1-A below.

Note: Daisy chaining is a hardware configuration in which devices are connected one to another in a series. With this configuration you only need one wireless terminal per area.
Recommended Configuration
The recommended wiring configuration for Scenario 1 has a cable running from the manager’s computer to a LAWN II Master in the middle of the seating area. There is one wireless terminal in each serving area with any additional terminals daisy-chained to it. See Figure 1-B below.
Note: If the wall separating the Manager's office and the cafeteria is drywall, LAWN II will work well. If the wall is concrete, a longer cable to bring the LAWN II outside the office or a repeater set may be necessary near the point of sale terminals.
Scenario 2

Scenario 2 starts with the Basic Scenario 1 and adds a terminal on a food cart 100 feet away in the courtyard outside the cafeteria.

Minimum Configuration
The minimum configuration for Scenario 2 has a cable running from the manager’s computer to a LAWN II Master in the middle of the seating area. There is one wireless terminal in each serving area with any additional terminals daisy-chained to it. See Figure 2-A below.

Tip: The signals from the LAWN II and LAWN II+ can penetrate concrete wall, however, the signal strength can be greatly reduced. If the wall is new, there

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**Legend**

- Wireless Terminal
- SL-TECH II
- SL-TECH II+
- Repeater
- Lg Antenna
- Daisy Chain
will be more moisture in the wall that absorbs the signal and weakens the signal more than an old wall. The best bet is simply to avoid it if possible so that the system can be foolproof. A longer cable or a repeater set can overcome the wall easily. Without the concrete wall, the system should be robust under 200' and is workable at 300' inside most buildings.

Recommended Configuration
The recommended configuration for Scenario 2 has a cable running from the manager’s computer to a LAWN II+ Master in the middle of the seating area. There is another cable running from the LAWN II+ to a large antenna on the roof. There is one wireless terminal in each serving area with any additional terminals daisy-chained to it. See Figure 2-B below.
**Note:** The LAWN II and the LAWN II + can drive a data cable 100 feet long.

**Note:** For particularly difficult installations, it may be necessary to install an outside and inside antenna attached to a single modem. For this purpose, a special RF splitter is available. In addition, a locally attached whip antenna can also be attached.

**Scenario 3**

Scenario 3 starts with Scenario 2 and adds a building with two terminals 50 yards from the cafeteria. To make matters worse, there is another building completely blocking the view.

**Recommended Configuration**

The recommended configuration for Scenario 3 begins with a LAWN II Master attached to the manager’s computer. We have placed a large antenna on the cafeteria roof with a low-loss RF cable connected to the LAWN II Master. On the building blocking our view, we have placed 2 large 8.5db Yagi antennas mounted on a 10-foot mast with a 485 interface. One is pointed to the antenna on the roof of the cafeteria. The other antenna is pointed towards the building housing the two terminals.

We have a wireless terminal at the outside food cart 100 feet away. For the serving areas inside the cafeteria, we have one wireless terminal in each serving area with any additional terminals daisy-chained to them. See Figure 3-A on the next page.
Note: Using a repeater is the best solution to a multipath problem. The repeater improves the performance by rebroadcasting the same message to extend the coverage area. Repeater systems can be extended indefinitely as long as the repeating process does not hinder the system response time.
Setting Up Wireless Terminals

Once you have decided on your wiring configuration, you’ll need to decide whether you will be using the RF unit with hard-wired terminals. If you will be connecting with hard-wired terminals, you will need to know if those terminals are RS232 (POS Model B) or RS422 (POS Model C).

**Wireless Model 4 Terminals Only**

Required Parts
When you order the RF kit, you will receive the following equipment:

- Wireless POS terminal
- Wireless POS terminal AC adapter
- **Lawn II**
  - LawnII AC Adapter
- Tan 9-pin connector
- Tan 25-pin connector
- Phone cable (usually 100 feet)

Instructions For Setting up RF POS
At the computer:
1. Connect the Tan 9-pin connector into COM 1.
2. Plug the phone cable into the Tan 9-pin connector.
3. Plug the Tan 25-pin connector into the Lawn II.
4. Plug the other end of the phone cable into the Tan 25-pin connector.
5. Insert the AC adapter into the electrical outlet.

At the Remote RF:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON. You are ready to Sign-On.

**Note:** When charging the RF battery pack, turn the power switch to OFF. The unit will not charge unless the switch is in the OFF position.
**Wireless Mira Only**

Connecting to the Computer

**Required Parts**

You will require the following equipment to connect the Mira terminal to the computer:

- **Wireless Mira RS232 terminal**
- **Wireless Mira AC adapter**
- Tan 9-pin connector
- Tan 25-pin connector
- Phone cable (usually 100 feet)
- **Lawn II** and AC adapter

**Instructions**

At the computer:

1. Connect the Tan 9-pin connector into COM 1.
2. Plug the phone cable into the Tan 9-pin connector.
3. Plug the Tan 25-pin connector into the Lawn II.
4. Plug the other end of the phone cable into the Tan 25-pin connector.
5. Insert the AC adapter into the electrical outlet.

At the Mira Terminal:

1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.
   You are ready to Sign-On.
**Wireless with hard-wired Model B (RS232)**

This explains how to connect wireless and Model B (RS232) hard-wired terminals to the computer's serial port.
Required Parts
When you order the RF kit, you will receive the following equipment:
With Hard-wired Terminals:
- Wireless POS terminal
- **Lawn II**
- 25 pin connector
- 2 way splitter
- 1 standard 9 pin connector
- Couple of jumper cables.

Instructions For Connecting RF POS’s (RS232) With Model 4 or 4B Terminals (RS232)
At the computer:
1. **Connect** a **WinSNAP 9-Pin Connector** (female) onto your chosen COM port of the computer.
2. **Connect** a **phone splitter** to the back of the 9-Pin Connector.
3. **Insert** an **RJ-11 cable** into one side of the phone splitter.
4. **Insert** the **other end** of this RJ-11 cable into the blue 25 Pin connector.
5. **Insert** the **blue 25 Pin connector** into the LawnII.
6. **Plug** the **LawnII power supply** into an electrical outlet.
7. **Insert another RJ-11 cable** into the other side of the phone splitter. The other end of this wire attaches to the Phone Jack/Connector block that leads to the POS Terminals in the cafeteria.

At the Remote RF:
1. **Plug** the **round end** in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closest to the front.
2. **Insert** the **AC adapter** into the electrical outlet.
3. **Turn** the **power switch** to OFF.
4. **Make sure** that the RF battery pack has charged overnight.
5. **Turn** the **power switch** to ON. You are ready to Sign-On.

In the cafeteria:
1. **Insert** an **RJ-11 cable** into the connector block located on the wall.
2. **Attach** the **other end of the RJ-11 cable** into one of the connection ports on the back of the Point of Sale terminal.
3. **Plug** the **Point of Sale power supply** into an electrical outlet.
4. **Press** the **red power button** on the back of the terminal.
   You are ready to Sign-On.

**Note:** When charging the RF battery pack, turn the power switch to OFF. The unit will not charge unless the switch is in the OFF position.
**Wireless with hard-wired Model C (RS422)**

This explains how to connect wireless and Model C (RS422) hard-wired terminals to the computer's serial port.

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**Connecting RF RS232 with RS422**
In the cafeteria:
1. **Insert** an RJ-11 cable into the connector block located on the wall.
2. **Attach** the other end of the RJ-11 cable into one of the connection ports on the back of the Point of Sale terminal.
3. **Plug** the Point of Sale power supply into an electrical outlet.
4. **Press** the red power button on the back of the terminal. You are ready to Sign-On.

**Note:** When charging the RF battery pack, turn the power switch to OFF. The unit will not charge unless the switch is in the OFF position.
**Tip:** Can't get wireless model 4 terminal and hard wired terminals to work together? Possible solution: Try replacing, one at a time, the jumper cables that connect to the 2 way splitter behind the computer with straight cables. One jumper goes to the wireless master unit, the other goes to the phone jack leading to the hardwired terminals. The standard jumper cables included with the accessories kit and the wireless master unit arrive with Reversed cables (standard phone cables). Straight jumper cables can be requested from the *RMA* Department in Santa Monica. In cases where this has solved the problem only one of the 2 standard jumper cables needed to be replaced with the straight.

To determine if a jumper cable is 'standard' or 'straight', hold the ends so that the connectors are side by side. If the colors are in the SAME ORDER left to right at both ends (example, both ends: left to right are yellow, green, red, black), then it is a 'straight through' cable. If the colors are in REVERSE ORDER from one end to the other (example, one end left to right is yellow, green, red, black and the other end, left to right, is black, red, green, yellow), then it is a 'standard' cable.
**Wireless Mira with Model 4 RS232**

In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrider2 registry entry. Click here for instructions.

Connecting to the Computer

**Required Parts**

You will require the following equipment to connect the Mira terminal to the computer:

- Wireless Mira RS232 terminal
- Wireless Mira AC adapter
- Model 4 RS232 terminal
- Model 4 AC adapter
- 9 Pin connectors
- 2 Patch cables
- Lawn II and AC adapter
- Serial Modem Cable (comes with Lawn II)
Instructions
At the computer (COM 1):
1. Connect the serial modem cable into COM 1 of the computer.
2. Insert the other end of the serial modem cable into the Lawn II.
3. Plug the Lawn II AC adapter into the electrical outlet.

At the computer (COM 2):
1. Connect a 9 Pin connector into COM 2 of the computer.
2. Insert a jumper cable (RJ-11) into the 9 Pin connector.
3. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
**Wireless Mira with Model 4 RS422**

In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the `POSComPortOverrideres2` registry entry. Click here for instructions.

Connecting to the Computer

![Diagram of connecting Mira to computer](image)

**Required Parts**

You will require the following equipment to connect the Mira terminal to the computer:

- Wireless Mira RS232 terminal
- Wireless Mira AC adapter
- Model 4 RS232 terminal
- Model 4 AC adapter
- RS 232/RS 422 Converter
- RS 232/RS 422 Converter AC adapter
- 2 Patch cables
- Lawn II and AC adapter
- Serial Modem Cable (comes with the Lawn II)
Instructions
At the computer (COM 1):
1. Connect a Serial Modem Cable into COM 1 of the computer.
2. Insert the other end of the Serial Modem Cable into the Lawn II.
3. Plug the Lawn II AC adapter into the electrical outlet.

At the computer (COM 2):
1. Connect an RS 232/RS 422 Converter into COM 2 of the computer.
2. Plug the RS232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.
   You are ready to Sign-On.

At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
Wireless Mira with Mira RS232 and Model 4 RS422

In order to use Mira and Model 4 terminals on the same machine, you will need to configure each on a separate Com port. You will need to configure Com port 2 using the POSComPortOverrides2 registry entry. Click here for instructions.

Connecting to the Computer

Required Parts
You will require the following equipment to connect the Mira terminal to the computer:

- Wireless Mira RS232 terminal
- Wireless Mira AC adapter
- Mira RS232 terminal
- Mira AC adapter
- Model 4 RS232 terminal
- Model 4 AC adapter
- Phone splitter
- 1 9 Pin connectors
- RS 232/RS 422 Converter
Point of Sale Hardware Guide

- **RS 232/RS 422 Converter AC adapter**
- **5 Patch cables**
- **Special 25 Pin connector** (order from SLT)
- **Lawn II** and AC adapter

Instructions

At the computer (COM 1):
1. Connect a 9 Pin connector into COM 1 of the computer.
2. Insert a phone splitter into the 9 Pin connector.
3. Insert a jumper cable (RJ-11) into one side of the phone splitter.
4. Insert the other end of this jumper cable into the special 25 Pin connector.
5. Insert the special 25 Pin connector into the Lawn II.
6. Insert a jumper cable (RJ-11) into the other side of the phone splitter.
7. Insert the other end of this jumper cable into the wall jack.

At the computer (COM 2):
1. Connect an RS 232/RS 422 Converter into COM 2 of the computer.
2. Plug the RS232/422 Converter AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into the RS232/422 Converter.
4. Insert the other end of this jumper cable into the wall jack.

At the Wireless Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Turn the power switch to OFF.
4. Make sure that the RF battery pack has charged overnight.
5. Turn the power switch to ON.
   You are ready to Sign-On.

At the Mira Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round connector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP - Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
   You are ready to Sign-On.
At the Model 4 Terminal:
1. Plug the round plug in the AC adapter to the DIN connector. This is the round
cconnector on the left side of the terminal closet to the front.
2. Insert the AC adapter into the electrical outlet.
3. Insert a jumper cable (RJ-11) into one of the RJ-11 ports.
4. Insert the other end of this jumper cable into the wall jack.
5. Attach any input devices. See the Point of Sale section under the WinSNAP -
Out of the Box chapter of the WinSNAP Help for more information.
6. Turn the power switch to ON.
You are ready to Sign-On.
Wireless Modem Configuration Program

The Wireless Modem Configuration Program allows you to program Master and Slave wireless units. It is located in the WinSNAP\Tools Folder along with several txt files.

File Menu Options
- **Open**: Allows you to open one of the working txt files.
- **Exit**: will close the program.

Options Menu Options
- **Comm Settings**:

Master Menu Option
- Selecting the Master menu option will automatically start the process of programming the master unit. See Programming the Master Modem.

Slave Menu Option
- Selecting the Slave menu option will automatically start the process of programming the slave unit. See Programming the Slave Modem.

Extra Menu Option
- **Master1**: Sets the Master modem to channel 1
- **Slave1**: Sets the Slave modem to channel 1
- **Master2**: Sets the Master modem to channel 2
• **Slave2:** Sets the Slave modem to channel 2
• **Master3:** Sets the Master modem to channel 3
• **Slave3:** Sets the Slave modem to channel 1

**Note:** Use the default channel (0) unless using repeaters.

Help Menu Option
• **Quick Start Reference:**
• **Wireless Modem Configuration Help:**
• **About Wireless Modem Configuration Program:**

**Programming the Master Modem**

You will need the following:

• WinSNAP installed
• **Lawn II modem kit** (modem, AC adapter and serial modem cable)
• The **Wireless Modem Configuration Program** and files

**Note:** Verify that there are no other wireless devices in use nearby, (including wireless Mira terminals)

1. Connect the Lawn II's **serial modem cable** to the desired Com Port.
2. Connect the **other end** of the serial modem cable labeled "LAWN" into the Lawn II into the RS232 Data port.
3. Insert the **AC adapter** plug into the Lawn II Power connector.
4. Plug the **AC adapter** into an electrical outlet.
5. Start **WinSNAP**.
6. Open **Setup | Point of Sale**.
7. Set the **Com Port** that the cable is using to the correct speed.
8. Save your changes.
9. Close **WinSNAP**.
10. **Browse to** the **WinSNAP\Tools Folder**.
11. **Double-click** on **WirelessModemConfig.exe**.
    - The Wireless Modem Configuration Program will open.
12. **Select Master** from the Menu Bar.
    - The status bar will tell you what it’s doing while it’s checking modem speed.
Note: You will see output on the screen as the script runs. The status bar will tell you when the script is finished. If you don’t see output, that tells you that it’s not working, but there’s no error message.

Programming the Slave Modem

Caution: There are two ways to program a terminal (slave) modem. You can program it using the Wireless Modem Programming Feature (which is easier) or using the Wireless Modem Configuration Program. Here are the instructions for using the later.

Note: Verify that the resistance is ON when programming the slave modem.

You will need the following:

- WinSNAP installed
- Lawn II modem kit (modem, AC adapter and serial modem cable)
- The Wireless Modem Configuration Program and files

Note: Verify that there are no other wireless devices in use nearby, (including wireless Mira terminals)

1. Connect the Lawn II's serial modem cable to the desired Com Port.
2. Connect the other end of the serial modem cable labeled "LAWN" into the Lawn II into the RS232 Data port.
3. Insert the AC adapter plug into the Lawn II Power connector.
4. Plug the AC adapter into an electrical outlet.
5. Start WinSNAP.
6. Open Setup | Point of Sale.
7. Set the Com Port that the cable is using to the correct speed.
8. Save your changes.
9. Close WinSNAP.
10. Browse to the WinSNAP\Tools Folder.
    The Wireless Modem Configuration Program will open.
12. Select Slave from the Menu Bar.
    The status bar will tell you what it’s doing while it’s checking modem speed.
Wireless Modem Programming Feature

The Wireless Modem Programming feature allows you to configure the wireless terminals much like setting options on a cell phone. All you need to do this are the terminals themselves.

Getting Ready

- Verify that there are no other wireless devices in use nearby (including the Master)
- Remove power supply from the Master unit
- Verify that the terminal is set to the desired speed (Model 4=4800, Mira=19,200)
- Verify that the Wireless setting is Y
- If setting up more than one terminal, verify that the Terminal IDs are unique

Programming the Wireless Terminal

1. **Turn off** the terminal by pressing the Power Button.
2. **Press and hold** the "0" key while turning on the terminal.
3. **Release** the "0" key.
   
   You will see the following screen on the terminal display:

   ![Wireless Setup Screen](image)

4. **Press 0**.
   
   The following screen will appear:

   ![Wireless Setup Screen](image)
5. **Press 0** to select the default channel or **1, 2 or 3** to select that channel. The default channel is normally 2.
   
   You will receive the following message: “Starting modem detection...”

   **Note:** Use the default channel (0) unless using repeaters.

   **Note:** If no modem is detected, the message “Error! No modem found.” will display. Press 0 to try again.

6. Once completed, **power off** the terminal, **restart and sign on**.

**Wireless Modem Loopback Test Feature**

The Wireless Modem Loopback Test feature allows you to test the strength of the signals from the master modem to the slave.

**NOTE:** The terminal must be configured prior to this test! See Wireless Modem Programming Feature.

**Note:** The programming and loopback features will only be available in the 10.24+ chip.

Setup Instructions:

1. **Connect** the **loopback test plug** to the serial connector on the master wireless modem.

   **Tip:** The loopback test plug connects pins 2 and 3 on the serial connector to loop back the transmit to the receive pins. In the event that a loopback test plug is not available, a paper clip or something similar that connects pins 2 and 3 can be substituted, but be sure not to damage the modem connector.

2. **Attach** the **modem power adapter** and plug it in to power-on the modem.

To Start:

1. **Turn off** the **terminal** by pressing the Power Button.

2. **Press and hold** the "1" **key** while turning on the terminal.

3. **Release** the "1" **key**.
   
   At this point, you will see the following screen (or something similar) on the terminal display:
4. **Continue** to the following page for instructions on how to determine the strength from terminal to terminal.

During the Test
The display indicates the percentage of successful packets transmitted and received OK. As the terminal is moved to different locations, you will see one of the following messages in the display indicating the effective signal strength of the wireless connection:

- **Excellent** (80% => and <= 100%)
- **Good** (50% => and < 80%)
- **Marginal** (20% => and < 50%)
- **Bad** (0% => and < 20%)

During the test, the modem "Traffic" and "Transmit" indicators on both the master and terminal modems should pulse rapidly (every 50 ms or about 20 times per second). This allows two 10-count packet samples to be made per second. If the lights on the master modem aren't pulsing, turn it off and back on to reset the modem. Depending on the modem reset circuitry, you may have to do this several times.

Additional Information
Rarely, on initial power-up, the terminal's own modem may enter a local loopback or echo mode and will display "Excellent" reception without a master modem even being nearby. If this happens, simply power off the terminal to reset it. When this occurs, the modem is echoing the data internally and will receive the loopback packets just as if they were being looped back from the master unit. Since the terminal isn't aware that the modem is doing this, it will indicate "Excellent" reception. To prevent this from occurring, confirm that the master modem is rapidly pulsing the "Traffic" and "Transmit" indicators. If the link is performing normally, it will continue to do so until the next modem is reset.

**Wireless Terminal Maintenance**

**Recharging the Battery**

The terminal can not be used when the battery is being charged. It will take 4-5 hrs to charge depending on how low the battery is. The terminal can run on battery power OR off our standard POS power supply. It can NOT run on the power supply and charge the battery at the same time. There is a reply on the circuit board that detects if power is coming from the battery or the AC power supply. If both are plugged in at the same time this relay does not know what to do so it freezes up and the terminal will not work.
POS Client

WinSNAP’s POS interface, called POS Client comes in 2 compiles, Win32 and CE. This is a browser-based with full color graphical interface and large, easy to read buttons. The terminal can serve as both point of sale terminal and manager’s computer and is ideal for sites with just one serving line. It is easily networked for larger operations and is very simple to operate making training a snap.

**Note:** POS Client and **Bulk Entry** will no longer run on the same computer. The Bulk Entry button is disabled while POS Client is running and the Terminal button is disabled while bulk entry is running.

- POS Client **Win32**
- POS Client **CE**

**Caution:** POS ClientCE only uses JPGs. You will need to delete or convert any existing BMPs used for Point of Sale. For one of many converter programs, visit [http://www.2jpeg.com/convert_bmp_to_jpg.htm](http://www.2jpeg.com/convert_bmp_to_jpg.htm)

Click on the section of this screen that you would like to learn more about.
POS Client features include:

- **A decimal point is now supported.** POS Client defaults to the decimal point location at the end of the number being entered. So if “5” is entered on the POS keyboard, that defaults to $5.00. This is a change from previous versions of POS, where a “5” would have meant $.05.

- “Light the Way” help is given to show the cashier all valid keys at any point in a transaction. Keys that are not lit cannot be used at that specific time.

- New keys for ending transactions. The $Tend key has been replaced with a Finish Cash key. The Account key has been replaced with a Finish Account key.

- Images will be stored on the workstation where they are used instead of on the server only.

**Tip:** On POS Client, clicking on the display refreshes the screen just like SubTotal does on Model 4’s and GT.

### POS Client Screen Sections

#### Tool Bar

The Tool Bar displays information to help you such as the Terminal ID, Session, Cashier and Number in Queue.

#### Current Customer Details

The Current Customer Details section displays the customer’s name, grade, homeroom, account information and spending limits. This section also displays any text entered in the Terminal Display and Dietary Restriction fields on the Customer Information Tab. The Dietary Restriction information is preceded by the word "Diet".

#### Current Transaction Details

The Current Transaction Details section displays the subtotal, account and the amount owed for the current transaction.

#### Transaction Display

The Transaction Display section displays the current transaction items, accounts and amounts.

**Tip:** Clicking on the Transaction Display works as a refresh of the screen.
Click for Homerooms/Photo Display

The Click for Homerooms/Photo Display section allows you to select a homeroom and select a customer from the photos displayed. This section also displays any photos of customers if you have photos stored on your system.

A new **Quick Search** feature has been added to the Homerooms/Photo Display section. Once in a homeroom, a Quick Search button is available at the bottom of the screen. Select this button and then select the first letter of the customer's last name. You will immediately "jump" to that letter.

The results depend on the meal session selected and the setting chosen under question #1 “Primary Sort Order for POS” AND question #2 “Secondary Sort Order for POS” found under Setup | Point of Sale | Customer Records Tab.

**Tip:** If primary sort order is defined as Homeroom and secondary sort order is defined as First Name, the customer's first initial of their first name would be entered.

**Note:** When using Quick Search, the appropriate match first or last name will appear somewhere on the page.

**Note:** The homeroom selection screen in POS Client is limited to 80 homerooms.

Help

The Help Button allows you to access the "state sensitive" help. Once clicked, help will display in this section that help walk you through transactions.
**Function Keys**

The Function Keys section contain all of the keys necessary to do all of the point of sale operations. Click on the key below for more information.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Single Action Mode</th>
<th>Remove Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>Earned</td>
<td>Clear Current</td>
<td>Void Last</td>
</tr>
<tr>
<td>Queue ID#</td>
<td>Name Search</td>
<td>Prepay</td>
<td>Enter</td>
</tr>
<tr>
<td>Sign On/Off</td>
<td>Advanced Menu</td>
<td>Finish Account</td>
<td>Finish Cash</td>
</tr>
</tbody>
</table>

**Number Keys**

The Number Keys are used when signing on the point of sale, entering a customers ID or barcode number manually or entering a cash amount. The Number Keys contain the numbers 0-9 plus the decimal point and the Back Button in case of an error.

The Backspace Key allows you to backspace out entries you have made when entering numeric information. It removes one digit at a time. For example, if you need to remove the entry of 123 you would hit the backspace key 3 times. It will not work for sign-on entries. The Backspace Key is a local feature to the terminal. It does not send any information to the computer.
**Group Keys**

The POS Client keyboard has 80 programmable keys. Because of limited space on POS Client, we have divided the keyboard into 4 quadrants. The Group Keys section allows you to change the quadrant of the keyboard.

- The A quadrant is the upper left-hand corner of the keyboard.
- The B quadrant is the upper right-hand corner of the keyboard.
- The C quadrant is the lower left-hand corner of the keyboard.
- The D quadrant is the lower right-hand corner of the keyboard.

**Item Keys**

The Item Keys contain all of the items that you specified for the default keyboard for the current meal session. See *Keyboards Introduction* and the Group Keys section above for more information.
POS Client Checklist

District / Site Name: __________________________________________________

**Caution:** It is important that you perform the tasks in the order they appear.

Select the hyperlink (if any) in the task to get detailed instructions.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read the Multiple POS Client Installation topic</td>
<td></td>
</tr>
<tr>
<td>Insure Point of Sale setup options are correct</td>
<td></td>
</tr>
<tr>
<td>Verify that the WinSNAP Folder is shared</td>
<td>Click the Share this Folder radio button. Click the Permissions Button. The Permissions for Install Window will appear. Make sure that Allow is checked on all three options. Click OK twice.</td>
</tr>
</tbody>
</table>

**Install POS Client**

Create a shortcut on the desktop

Plug in any input device(s) |
Scanners can be set to manual (trigger) or triggerless mode. Use manual mode when using rosters and triggerless mode when using barcode cards. The instructions for programming the scanner are located on the Documentation Library Page under More Information | Technical Documents and is called 'Programming Hand Held Scanners: Bar Code List'.

Install Epson TM-U200A receipt printer (if used).

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attach power cable to printer.</td>
<td>Install printer drivers.</td>
</tr>
<tr>
<td>Attach serial cable (9-pin to PC and 25-pin to printer).</td>
<td>Set printer as your default printer.</td>
</tr>
<tr>
<td>Load paper.</td>
<td>Set printer port to COM1.</td>
</tr>
</tbody>
</table>

Start a meal session on the manager's computer

Start POSClient to test connection

This task includes POS Client Terminal Settings and authenticating the Images Folder.

Configure any **serial device, camera, printer, photo or terminals.**

See the Advanced Menu Key documentation.

Completed By: _______________________________________ Date: __________
Install POSClient.exe
On the machine you wish to install the multiple POS Client:

1. On the install CD, browse to the POSClient Folder.
2. Double-click on POSClientSetup.exe. The POSClient Setup screen will open.
3. Click the Next Button. The ReadMe File screen will open.
4. Click the Next Button. The Destination Location screen will open.
5. Click the Next Button. The Start Installation screen will open.
6. Click the Next Button. The installation will begin. Once the installation finishes, you will be notified.
7. Click the Finish Button. The screen will close and an icon will be added to your desktop.

8. Setup POS Client.

   Note: Point of Sale has to be running on the Manager's computer for the Multiple POS Client to work.

POS Client Setup

1. Double-click on the POSClient Icon on your desktop. A window will appear telling you that it is "Unable to connect to POS Engine".
2. Select OK. A Setup Window will open.
3. Enter the Point of Sale Server ID. This is the name of the manager's computer that you are running POS Operations on and are connecting to. Example: JrHighCafe
4. Enter the Point of Sale Terminal ID. This will be the ID number of this terminal. This needs to be a unique number in this cafeteria configuration. Example: 4
5. Edit the Local Image Path, if desired.
Note: This path specifies where the images are stored during the serving sessions. If specifying a local path, the image files will be copied locally from the manager's machine for this session.

6. Select OK.
7. Sign on by entering a valid cashier ID and selecting the SignOn Key.
8. Access a customer's account by scanning a card, entering their ID or selecting them from the Homeroom area.
   A network dialog will open.
9. Enter a username and password that has permissions to access the manager's computer.

Note: WinSNAP/WebSMARTT uses a network share to access the images. POS Client will want an authentication to access that share - A user name and password to access the manager's computer.

10. Select OK.
    The customer's name and information will appear on the screen.
11. Test any input devices, meal prices, etc.

Multiple POS Client Installation
The manager's machine is the only machine that needs to be installed with WinSNAP at a site. All of the other computers are installed with POSClient.exe.

Note: If the machine to be used for Multiple POS Client previously had SNAPXpress or WinSNAP installed on it, we recommend that you uninstall it.
See Uninstall WinSNAP or SNAPXpress Uninstall for instructions.

At the Central Office, the workstations will be installed with WinSNAP and you may use Bulk Entry. In this instance, the POS Client Button will be grayed out for all workstations except on the manager's machine (terminal 0).

Note: See the POS Client Installation Checklist for step by step instructions.

Note: Computers and terminals that are running the Adara software are not required to synchronize their clocks to any specific machine. The reason this is no longer an issue is because the Adara software provides one or many user interfaces to one machine running POS Operations. Adara is responsible for sending the POS Operations software data entered and keys pressed by the POS user. POS Operations is responsible for creating POS transactional detail from those actions and writing that detail to the database.
POS Client & Model 4's

Model 4's can be used in a Multiple POS Client setup. They will need to be connected to any Multiple Graphic machine with WinSNAP installed.

Tip: See Graphic Terminal to POS Client Conversion and Training Considerations for more information.

POS Client CE Checklist

District / Site Name: ________________________________

Caution: It is important that you perform the tasks in the order they appear.

Select the hyperlink (if any) in the task to get detailed instructions.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insure Point of Sale setup options are correct</td>
<td>Click the Share this Folder radio button. Click the Permissions Button. The Permissions for Install Window will appear. Make sure that Allow is checked on all three options. Click OK twice.</td>
</tr>
<tr>
<td>Verify that the WinSNAP Folder is shared</td>
<td></td>
</tr>
<tr>
<td>Verify that the http port 80 is open.</td>
<td>Contact your IT Department.</td>
</tr>
<tr>
<td>Install the TeleVideo per instructions</td>
<td></td>
</tr>
<tr>
<td>Plug in the Keyboard</td>
<td></td>
</tr>
<tr>
<td>Plug in the Mouse</td>
<td></td>
</tr>
<tr>
<td>Plug in any input device(s)</td>
<td>Scanners can be set to manual (trigger) or triggerless mode. Use manual mode when using rosters and triggerless mode when using barcode cards. The instructions for programming the scanner are located on the Documentation Library Page under More Information</td>
</tr>
<tr>
<td>Connect TeleVideo into the network</td>
<td></td>
</tr>
<tr>
<td>Power on the TeleVideo</td>
<td></td>
</tr>
<tr>
<td>Install and configure the TeleVideo CE</td>
<td>For the latest documentation, go to the Documentation Library Page. It is located under ‘More Documentation -</td>
</tr>
</tbody>
</table>
**POS Client CE Setup**

1. **Double-click** on **POSClient** if it has not already opened.  
   A POSClient Window will appear telling you that it is "Unable to connect to POS Engine".  
2. **Select OK**.  
   A Setup Window will open.  
3. **Enter** the **Point of Sale Server ID**. This is the name of the manager's computer that you are running POS Operations on and are connecting to.  
   Example: JrHighCafe  
4. **Enter** the **Point of Sale Terminal ID**. This will be the ID number of this terminal. This needs to be a unique number in this cafeteria configuration.  
   Example: 4  
5. **Edit** the **Local Image Path**, if desired.  

**Note:** This path specifies where the images are stored during the serving sessions. If specifying a local path, the image files will be copied locally from the manager's machine for this session.  
6. **Select OK**.  
7. **Sign on** by entering a valid cashier ID and selecting the **SignOn Key**.  
8. **Access a customer's account** by scanning a card, entering their ID or selecting them from the Homeroom area.  
   A network dialog will open.  
9. **Enter a username and password** that has permissions to access the manager's computer.  

**Note:** WinSNAP/WebSMARTT uses a network share to access the images. The CE device will want an authentication to access that share - A user name and password to access the manager's computer.
10. **Select OK.**

   The customer’s name and information will appear on the screen.

11. **Test** any input devices, meal prices, etc.

---

**Wiring Preparation and Installation**

**General Wiring Information and Techniques**

- School-Link Technologies recommends using only RJ11 (4 wire) jacks.
- This is not an Ethernet / network circuit! Connections through Ethernet hubs will not work!
- To keep wiring as short as possible, wire runs should be as direct as is practical. Avoid running wire close to sources of electromagnetic energy. Some of these include:
  - Fluorescent lights
  - PA system speakers / wires
  - Alarm circuit wires
  - Compressors or other high-current / motor devices

- Screw-terminal connections are preferable to punch-down connections.
- Avoid having connectors on the floor. Since cafeterias are often mopped daily, floor-mounted connectors are easily splashed and ultimately fail because of corroded conductors.
- Prior to the availability of Model 4C’s / RS422 connectors, WinSNAP had a 3-wire arrangement. If you are upgrading from an older WinSNAP installation, be sure to verify that you are using all four wires, and not just three. With the 3-wire arrangement, you will find either the black or the yellow connector unused. If this is the case, rewire the jacks as shown.
- If you choose to use Cat5 wire, ‘fold back’ the unused wire pairs (blue & white/blue, brown & white/brown), rather than cutting them off short, to provide for additional conductors should they be needed in the future.
- Make sure any jumper cables you use (often referred to as telephone “line cords”) contain 4 conductors.
What You’ll Need

You should have a variety of tools on hand whenever you need to install or repair POS terminals. 110-volt power must be available for each terminal. Handy Tool Kit Contents should include:

- Wire cutters & strippers
- Phillips & Slotted screwdriver
- Ball point pen & Plastic tie-wraps
- Drill (as required for mounting connector blocks)
- Volt/Ohmmeter or other continuity tester, such as a Paladin tester
- RJ11 (4-wire) screw-type terminal blocks -- we highly recommend
- “Standard” telephone connectors, either surface mount or face plate
- Paladin Testing Kit. If you do not have one, loaner test kits are available.

You should have been contacted by School-Link Technologies regarding the need for a loaner machine. Let your WinSNAP Project Manager know if you have not been contacted.

Wiring Your Point Of Sale Circuit

One of the most crucial aspects of successful POS operation is correct wiring from your computer to each Point-of-Sale Terminal. Most terminal start-up errors are because of loose or improper connections. Layout, wire gauge and properly wired connection boxes are extremely important. Plenum-rated wire may be mandated by local practices.

The following chart lists wire types / distance limitations / POS models:

<table>
<thead>
<tr>
<th>WIRE TYPE</th>
<th>WIRE CONFIGURATION</th>
<th>GAUGE (1)</th>
<th>MAX. DISTANCE RS-232 (2)</th>
<th>MAX. DISTANCE RS-422 (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT 1</td>
<td>4 wires (2 pairs)untwisted</td>
<td>AWG24 (solid preferred)</td>
<td>750 ft Model 4B/4D</td>
<td>3000 ft Model 4C</td>
</tr>
<tr>
<td>CAT 5</td>
<td>8 wires (4 pairs)twisted</td>
<td>AWG 24 (solid preferred)</td>
<td>500 ft Model 4B/4D</td>
<td>3000 ft Model 4C</td>
</tr>
</tbody>
</table>
• AWG means American Wire Gauge. It refers to the diameter of the wire, not the length. The larger the number, the smaller the wire gauge is. The most common sizes are from AWG 10 to 28. Cat 1 and Cat 5 wire are usually AWG 24, although AWG 22 is acceptable.

• This is the total recommended maximum wire load (length) on the circuit. This is not necessarily the distance to the farthest POS; rather, it is the total cumulative length of wire extending to all POS locations. If this is to be one long daisy-chained circuit (computer to 1st POS, to next POS, etc., as shown in Figure 6-1), then this will in fact be the length to the farthest POS. However, if this is to be a multi-clustered circuit (as shown in Figure 6-2), then the total wire length must be summed to determine the wire load on the circuit.

**Note:** If using CAT 3 wiring, it requires the same specs as **CAT 5.**

<table>
<thead>
<tr>
<th>RJ-11 Post Color</th>
<th>Label</th>
<th>Cat 1 Color Scheme 1</th>
<th>Cat 1 Color Scheme 2</th>
<th>Cat 5 Color Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>R</td>
<td>Red</td>
<td>Blue</td>
<td>Orange</td>
</tr>
<tr>
<td>Green</td>
<td>G</td>
<td>Green</td>
<td>White/Blue</td>
<td>White/Orange</td>
</tr>
<tr>
<td>Black</td>
<td>B</td>
<td>Black</td>
<td>Orange</td>
<td>Green</td>
</tr>
<tr>
<td>Yellow</td>
<td>Y</td>
<td>Yellow</td>
<td>White/Orange</td>
<td>White/Green</td>
</tr>
</tbody>
</table>

• If your RJ-11 connector blocks have 6 conductors (the four above, plus Blue and White), simply ignore (don’t use) the blue and white screw connections.

• Cat 1 wire is available in two color schemes, as shown above. Either will work; keep the above table handy to ensure you wire every jack the same way.
Continuous Line Block Wiring (Daisy-chained)

This wiring arrangement is the most straightforward. POS connectors are wired in parallel, *daisy-chained* from one to the next, not unlike wiring 110V AC outlets. Keep the colors straight (in “parallel”) per the *wire chart*, always connecting the same wire color to the same jack color.

The cords from the jack to the computer and from the jacks to the POS are standard 4-wire telephone "line cords", available from School-Link Technologies or other suppliers.

**Figure 6.1 - Continuous Line Block Wiring (Daisy-chained)**
Master Connector Block Wiring
This wiring scheme is advisable for installations with terminals located in different rooms or at several distant areas. However, this configuration will also add length to the data circuit.
Cat 5 Issues

Issues Associated With Cat 5 on WinSNAP POS Circuits

Category 1 cable, consisting of four wires (sometimes loosely twisted into two pairs of two wires each) was designed for voice frequency analog or very low-speed digital signals. This wire is subject to external power and spurious transient (spikes, etc.) influences, so it cannot be used for high-speed data.

Category 5 cable, consisting of eight wires in four pairs, and sometimes having a shield in the cable, was designed to support LAN connections at 10mbps or 100mbps. The pairs in this cable are tightly twisted, which allows this cable to very effectively reject external power and spurious signals.

RS-232 specifications were designed for short (less than 50’) distances, point-to-point (two devices only) uses. The electronic circuitry in COM ports and typical RS-232 devices (such as modems) was designed around these specifications. The 50’ maximum distance and other parameters are based on maximum circuit baud rates of up to 112,000 baud, and flow control which would work properly at those speeds, over the limited distance.

WinSNAP’s POS terminals have historically used an RS-232 (“COM port”) circuit over Cat 1 wire, at distances up to a couple thousand feet. While RS-232 usually implements several leads (7 to 9) to provide signal transmission, signal reception, handshaking, flow control, ring indication, and ground references, WinSNAP’s usage actually requires only three leads – a common ground, transmit, and receive. Since the bit rate is low (4800 baud), and since WinSNAP can control the electronics on one end of the circuit (the POS units), the standard COM port could be used, and desired distances and stability could be achieved.

RS-232 signals are ‘valid’, or ‘defined’ between +3 and +15 volts, and between –3 and –15 volts. The area between –3 and +3 volts is undefined, and any signal in that region at signal sample time will be unrecognized.

One day, Category 5 cable entered into WinSNAP’s POS world. One might think that the superior construction, certification to over 100mbps speeds, and excellent noise immunity would make it ideal for POS use. Wrong. Because of the tight twists between conductors in this cable, a significant inter-conductor capacitance is introduced. Network cards and network equipment were designed with this in mind; COM ports and RS-232 equipment were not. So, what is capacitance and why does it affect us so badly?

Capacitance is present between two conductors located in close proximity. Capacitance allows a charge to build between the conductors, which tends to block changes in signal levels. The longer the conductors, and the closer they are, the greater the capacitance. You might think of capacitance as introducing opposition to attempted voltage changes. Since capacitance slows voltage changes, higher frequencies may not have time to ‘settle’ to their full values before the next ‘bit’ comes around. Think of capacitance as a resistance to change – it allows change, but slows it down.
**Note:** Capacitance presents a ‘load’ to both POS and computer transmissions, and is additive. A total daisy-chained run of 1000’ will produce the same loading as five 200’ runs directly from the computer to five POS units.

**A Picture Is Worth a Thousand Words**

The following is a picture of a good signal, taken at a COM port from a transmission of a sole Model 4 POS, directly connected to a computer. Note the ‘square’ nature of the signals – this is a good thing. What we’re trying to achieve is a signal in one of the defined/valid regions (either positive or negative) at all signal sample points. ‘Signal sample points’ represent bits at a particular baud rate.

*POS RS-232 signal received at computer, 0 feet of CAT 5 wire*

```plaintext
+15 V ------------→

**Defined Region**

+3 V ------------→

**Undefined Region** 0 V →

-3 V ------------→

**Defined Region**

-15 V ------------→
```

Below is that same signal, but transmitted through the equivalent of about 100’ of Cat V wire. Note some very minor rounding of the signal at the bottom left edges.
Once again, through the equivalent of about 200’ of Cat V wire. (A little more rounding.)
At around 500’, the rounding on the negative-going signals is getting noticeably pronounced. However, the signal is still of good enough quality to be reliable.

At 1000 feet, we begin to question the signal integrity. Yet, at ‘sample time’, the signals are still (barely) in the defined region.
At 2000', signal integrity is clearly questionable. If the 'receiver' electronics are forgiving, the signal may be read properly; however, if the electronics are strict, we're in trouble.
At 4000’, the signal never even leaves the positive voltage region. We’re doomed!

**Note:** Settings for the preceding displays were 5V/div. sensitivity, and .2 msec./div. trace rate.

**RS422**

Unlike RS232, RS422 specifications provide for multiple transmitter and receiver device configurations (which is really what a multi-POS installation needs). Also, the RS-422 specifications are valid between +.2 to +6.0 volts, and -.2 to -6.0 volts, making the circuitry more sensitive. We’ve seen above how cable capacitance slows down the change in signal voltages. Since the RS-422 voltage swing can be valid for a change as little as .4 volts from positive to negative (in contrast to RS-232, which has a minimum swing of -3 to +3, or 6 volts), the effects of cable capacitance are lessen.

Remember that RS-422 requires a 4-wire configuration, while SNAP’s RS-232 installations really only need three wires. You may encounter some three-wire installations for Model 4’s or 4B’s. This won’t work for RS-422. RS-232 uses a transmit lead and a receive lead, referenced to a common ground wire. RS-422 uses a ‘differential’ arrangement, with two wires for transmit and two wires for receive.

Following, you’ll see pictures of RS-422 signals.
This picture represents a single Model 4C transmitting directly to a computer (no Cat 5 wire). (Since the voltage changes are so quick, you don't see most of the vertical traces.)

The following picture represents a single Model 4C transmitting through a simulated 7000 feet of Cat. 5 wire. Notice very little signal degradation, and the signals are very much in the defined ranges.
Testing Wiring

The following describes procedures for testing and determining the causes of Point of Sale line installation problems, using the *Paladin line tester*.

Equipment Required

All can be supplied by School-Link Technologies:

- Paladin Line Tester (with 9v battery)
- RJ14 Breakout *Adapter* (3 way splitter)
- 3 Modular Jack Jumper Cables (phone wire with end plugs)
- SNAP Line Tester Terminator Box (sides 1 and 2)
Set-Up Instructions

1. **Connect** a separate modular jumper **wire** to each of the two jacks on the Paladin tester.
2. With the Paladin tester face up and its jacks facing away from you, **connect** the **right wire** to the breakout **adapter** jack marked L2.
3. **Connect** the **other wire** to the breakout adapter jack marked L1.
4. After properly setting up the Paladin Patch tester, **insert** one end of another phone **cable** into the WinSNAP Line Tester Terminator Box on side 1 and plug the other end into the Connector Block in the manager's office ("By the Computer.")
5. **Unplug** all of the **POS terminals** from the connector blocks.
6. **Insert** the **2-Line Modular Phone Splitter** attached to the Paladin Patch tester into the connector block by the terminal that is on the end of the POS circuit (usually the one furthest from the computer).
7. **Follow** the **testing sequence**.
8. After recording the results of the last terminal, **move to the next terminal** and continue to record the results.

Daisy Chaining

Daisy chaining is a hardware configuration in which devices are connected one to another in a series. There are two modular RJ11 connection ports on each terminal. One side should always work. The other is used to daisy chain from one terminal to another.

Testing Sequence

1. **Depress** the **red button** on the front of the tester until the #4 light on the left side is illuminated.
   It should require 4 presses for this to occur.
2. **Write** down **which lights** (if any) **are illuminated** on the right side of the tester.

**NOTE:** If light number 4 is very dim or not lit at all, record this information since it applies to the interpretation of the chart below.
3. **Press** the **button** one more time.
   This should cause left light #5 to illuminate.
4. **Record** the **information** for left light #5 as you did for #4.
   
   **NOTE:** After pressing the red button 4 times, light number 4 may be very dim or not illuminated at all. Record this information since it applies to the interpretation of the chart below. Do the same with the left light number 5.

5. After recording the results for all terminals, **change** the **Terminator Box** to Side 2 and repeat Step 1 of the testing sequence.
6. After testing both sides 1 and 2 use the **Paladin Results and Actions Matrix** to compare your results. If you need help interpreting the results call Technical Support.
7. After testing the wiring, if you have not identified a problem, but you are still having line problems, **test** the **jumper cables**.
**Paladin Tester**

**Testing Jumper Cables with the Paladin Tester**

Equipment Required:

Paladin Line Tester (with 9v battery)

1. **Insert** the **ends of the jumper wire** to be tested into the two jacks on the Paladin Tester.
2. **Press** the **TEST button** on the Paladin Tester, until the #3 light on the left side is illuminated.
   The #6 light should be illuminated on the right side.
3. **Press it again.**
   The #4 light on the left side and the #5 light on the right side should be illuminated.
4. **Press it again.**
5. The #5 light on the left side and the #4 light on the right side should be illuminated.
6. **Press it one more time.**
   The #6 light on the left side and the #3 light on the right side should be illuminated.

Figure 6.6 – Testing Jumper Cables
To summarize, a good cord will function as follows:

<table>
<thead>
<tr>
<th>LEFT SIDE LIGHT</th>
<th>RIGHT SIDE LIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

- If all lights were illuminated as described above, the jumper wire is good.
- If one or more lights did not illuminate, one or more of the wires in the 4-conductor jumper wire is probably broken.

### Paladin Results and Actions Matrix

<table>
<thead>
<tr>
<th>&quot;SIDE 1&quot; BLOCK</th>
<th>&quot;SIDE 2&quot; BLOCK</th>
<th>PROBABLE CONDITION CAT 1 WIRING</th>
<th>PROBABLE CONDITION CAT 5 WIRING</th>
<th>CORRECTION METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIGHTS:</td>
<td>LIGHTS:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left  Right</td>
<td>Left  Right</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 – 4 5 – 5</td>
<td>4 – 5 5 – 4</td>
<td>OK</td>
<td>OK</td>
<td>None required.</td>
</tr>
<tr>
<td>4 - * 5 - 5</td>
<td>4 - 5 5 - *</td>
<td>Broken BLACK wire.</td>
<td>Broken GREEN wire.</td>
<td>Find and fix broken or unconnected wire.</td>
</tr>
<tr>
<td>4 - * 5 - 5</td>
<td>4 - * 5 - 4</td>
<td>Broken GREEN wire.</td>
<td>Broken ORANGE/WHITE wire.</td>
<td>Find and fix broken or unconnected wire.</td>
</tr>
<tr>
<td>4 - 4 5 - *</td>
<td>4 - 5 5 - *</td>
<td>Broken RED wire.</td>
<td>Broken ORANGE wire.</td>
<td>Find and fix broken or unconnected wire.</td>
</tr>
<tr>
<td>4 - 4 5 - *</td>
<td>4 - * 5 - 4</td>
<td>Broken YELLOW wire.</td>
<td>Broken GREEN/WHITE wire.</td>
<td>Find and fix broken or unconnected wire.</td>
</tr>
<tr>
<td>4 - 5 5 - 4</td>
<td>4 – 4 5 – 5</td>
<td>RED and GREEN or BLACK and YELLOW are interchanged.</td>
<td>ORANGE and ORANGE/WHITE or GREEN and GREEN/WHITE are interchanged.</td>
<td>Reverse wires.</td>
</tr>
<tr>
<td>4 Dim 4 Dim</td>
<td>Short RED to</td>
<td>Short ORANGE</td>
<td>Find shorted</td>
<td></td>
</tr>
<tr>
<td>5 Dim</td>
<td>5 Dim</td>
<td>GREEN or BLACK to YELLOW.</td>
<td>ORANGE/WHITE or GREEN to GREEN/WHITE.</td>
<td>wire and remove short.</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>---------------------------</td>
<td>----------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>4 Dim</td>
<td>5 Dim</td>
<td>4 - 5 5 - 4</td>
<td>Short RED to BLACK or GREEN to YELLOW.</td>
<td>Short ORANGE to GREEN or ORANGE/WHITE to GREEN/WHITE.</td>
</tr>
<tr>
<td>4 - 4</td>
<td>5 - 5</td>
<td>4 Dim 5 Dim</td>
<td>Short RED to YELLOW or GREEN to BLACK.</td>
<td>Short ORANGE to GREEN/WHITE or ORANGE/WHITE to GREEN.</td>
</tr>
</tbody>
</table>

* in the chart above indicates NO display.

* If you are using Cat 1 wire which is Blue, White/Blue, Orange, White/Orange, substitute colors above as follows:
  * Red = Blue
  * Green = White/Blue
  * Black = Orange
  * Yellow = White/Orange
Setting up the Paladin Tester

Figure 6.4 - Setting up the Paladin Tester
# Input Devices

## POS Terminal and Input Device Features and Requirements

<table>
<thead>
<tr>
<th>Terminal or Input Device</th>
<th>Features</th>
<th>Chip</th>
<th>Jumper Clip</th>
<th>Software</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 3</td>
<td>Single line display Single input device</td>
<td>5.60 or below</td>
<td>N/A</td>
<td>3.x any version</td>
<td></td>
</tr>
<tr>
<td>Model 3 if mixed with Model 4's</td>
<td>Single line display Single input device</td>
<td>5.81</td>
<td>N/A</td>
<td>3.6.1 or higher Needs snpsetue.bat setting updated</td>
<td></td>
</tr>
<tr>
<td>Model 2D</td>
<td>Single line display Double input device</td>
<td>5.60 or below</td>
<td>N/A</td>
<td>3.x any version</td>
<td></td>
</tr>
<tr>
<td>Model 2D if mixed with Model 4's</td>
<td>Single line display Double input device</td>
<td>5.81</td>
<td>N/A</td>
<td>3.6.1 or higher Needs snpsetue.bat setting updated</td>
<td></td>
</tr>
<tr>
<td>Model 4/4D (RS232)</td>
<td>4 lines of display Adjustable contrast on display Double input device</td>
<td>7.81</td>
<td>Combined</td>
<td>3.6.1 or higher, WinSNAP Needs snpsetue.bat setting updated</td>
<td></td>
</tr>
<tr>
<td>Model 4B</td>
<td>4 lines of display Adjustable contrast on display Double input device</td>
<td>7.85</td>
<td>Separate</td>
<td>v3.9 or WinSNAP v1.2.1 Service Pack 1</td>
<td></td>
</tr>
<tr>
<td>Model 4C (RS422)</td>
<td>4 lines of display Adjustable contrast on display Double input device</td>
<td>7.85</td>
<td>Separate</td>
<td>v3.9 or WinSNAP v1.2.1 Service Pack 1 Needs snpsetue.bat setting updated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RS422 Port Converter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
<td>----------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mira (RS232)</strong></td>
<td>16 line display 3 serial ports Double input device</td>
<td>10.63</td>
<td>Combined WinSNAP v2.1.4 Mira</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mira (RS422)</strong></td>
<td>16 line display 3 serial ports Double input device RS422 Port Converter</td>
<td>10.63</td>
<td>Separate WinSNAP v2.1.4 Mira</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RF Modem</strong></td>
<td>Can be used with: Model 2D (non-poll) Model 3 (non-poll) Model 4 Model 4D Model 4B Model 4C (with splitter)</td>
<td>5.81 5.81 7.81 7.81 7.85 7.85</td>
<td>- - Combined Separate Separate</td>
<td>3.6.1 or higher 3.6.1 or higher 3.6.1+ or WinSNAP 3.6.1+ or WinSNAP 3.9 or WinSNAP 3.9 or WinSNAP</td>
<td>Needs SNPsetue.bat setting updated Use Yagi antennae: 3-way split circuit over 1000 feet</td>
</tr>
<tr>
<td><strong>Hand-held Bar Code Reader and second input device</strong></td>
<td>Used with: Model 4 Model 4D Model 4B/4C</td>
<td>7.85</td>
<td>Separate</td>
<td>v3.9 or WinSNAP v1.2.1 Service Pack 1</td>
<td></td>
</tr>
<tr>
<td><strong>Hand Held Bar Code Reader</strong></td>
<td>Used with: Model 2D Model 3 Model 4 Model 4D Model 4B/4C</td>
<td>5.62 or 5.81 5.62 or 5.81 7.81 7.81 7.85</td>
<td>- - Combined Separate Separate</td>
<td>3.6.1 or higher 3.6.1 or higher 3.6.1+ or WinSNAP 3.6.1+ or WinSNAP 3.9 or WinSNAP</td>
<td></td>
</tr>
<tr>
<td><strong>ITS Bar Code</strong></td>
<td>Used with: Model 4</td>
<td>7.85</td>
<td>Separate v3.9 or WinSNAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reader and second input device.</strong></td>
<td>Model 4D Model 4B/4C</td>
<td>7.85 7.85</td>
<td>Separate Separate</td>
<td>v1.2.1 Service Pack 1</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------------------</td>
<td>---------</td>
<td>-----------------</td>
<td>----------------------</td>
<td></td>
</tr>
<tr>
<td><strong>ITS Bar Code Reader used alone</strong></td>
<td>Used with: Model 2D Model 3 Model 4 Model 4D Model 4B/4C</td>
<td>5.81 5.81 7.81 7.81 7.85</td>
<td>- - Combined Combined Separate</td>
<td>3.6.1 or higher 3.6.1+ or higher 3.6.1+ or WinSNAP 3.6.1+ or WinSNAP 3.9 or WinSNAP</td>
<td></td>
</tr>
</tbody>
</table>
PAD (Personal Access Device)

For use with School-Link Technologies’ line of Point of Sale Terminals – Mira, Model 4, ADARA PC’s and ADARA thin clients

Current Models

• PAD-DIN PDD_01: DIN w/cardreader
• PAD USB PDU_01: USB w/cardreader
• PAD Serial PDS_01: Serial w/cardreader

Future Models

• PDDF_01: DIN w/fingerprint recognition module (no cardreader)
• PDUF_01: USB w/fingerprint recognition module (no cardreader)
• PDSF_01: Serial w/fingerprint recognition module (no cardreader)
• PDIP_01: IP-enabled w/cardreader,
• PDIPF_01: IP-enabled w/fingerprint recognition (no cardreader)

Note: If you require setup support assistance, please contact technical support, 800-748-9631.

PAD Compatibility

The PAD is compatible with all versions of WinSNAP 1.4.2+ and WebSMARTT 1.1+. It is not compatible with SNAP 3X (DOS-based) Model 3 terminals. CAFS compatibility is expressed in the chart below.

<table>
<thead>
<tr>
<th>Terminal/POS Type</th>
<th>PDU_01 USB 1.0</th>
<th>PDD_01 DIN</th>
<th>PDS_01 DB9 Serial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 4b/c/d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mira (rs232/422)</td>
<td></td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Mira-IP</td>
<td></td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>ADARA (Dell/Elo PC-based terminal)</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADARA (TeleVideo thin client with WinCE)</td>
<td></td>
<td></td>
<td>✔️</td>
</tr>
</tbody>
</table>
Features of the new PAD include:

- Dual-use input device accepts PIN numbers or barcode ID cards for faster service.
- Privacy wings to help protect student’s PIN number from being seen by others.
- Supports multiple types of POS terminals by simply swapping cables without replacing entire unit.
- Reads all cards produced by myCard@School™ software.
- Robust: Metal base plate provides strength, heft, and secure mounting options. Bright plastic top case resists repeated drops to concrete from 40 inches.
- Easy to clean: Flat keyboard is easily cleaned and sealed from splashes and spills.
- Multi-function All-In-One design: Swipe barcode scanner, keypad, fingerprint integrated together in a single unit connected to POS by a single cable.
- Connectivity Choices – Serial/DIN/USB; coming soon – CAT5 Ethernet.
- Easy to use: Prompts user with visual and audio feedback.

Specifications

Terminal

- 2 line by 16-character backlit LCD display.
- PIN entry indication of up to 16 characters.
- Power provided by host Point of Sale (POS) terminal, external power supply for DB9 serial model.
- Key-press and card read have audio indicator.
- Weighted base with anti-skid feet.
- Mounting provisions in base plate.
- Plastic case is fire retardant. Color: Dark Blue.

Electrical Characteristics

- Maximum power consumption is 250ma @ 5 Volts (1.25 Watt).
Environment

Working Temperature: 0 °C to +55 °C
Storage Temperature: -20 °C to +70 °C
Humidity: 90% non-condensing
Water Resistance: Withstands water poured onto unit without affecting use
Drop Resistance: Withstands 40” drops onto a concrete surface

Connectivity

PDD_01, PDDF_01: 6pin DIN for use with Model4 and Mira terminals
PDU_01, PDUF_01: USB 1.0 for use with ADARA (PC or thin client) terminals having open USB port
PDS_01, PDSF_01: 9-pin female DB9, external AC adaptor, for use with ADARA (PC or thin client) terminals having open male DB9 serial port.

(future models)
PDP_01, PDPF_01: CAT5 version for use with WinSNAP and WebSMARTT.

Unpacking Instructions

- Take the PAD out of the box and remove the plastic wrapping.
- Position the PAD on the serving line near the POS so that the student can see the display and comfortably reach the card swipe slot and keypad. There must be no impediment to the card entering or leaving the slot at the sides.
- Make sure you have these parts:
  - PDD_01 – DIN model including attached DIN cable with connector
  - PDU_01 – USB model including attached USB cable with connector
  - PDS_01 – Serial model including attached Serial cable, also includes power supply
  - 1 Driver CD (for PAD – USB only)

Mounting Instructions

The unit has been designed to rest on a counter. However, if you choose to mount the PAD unit permanently to a surface, use 5 mm diameter metric mounting screws (M5). The length of the mounting screws should not extend more than 10 mm (.394 in.) beyond the thickness of the panel to which you are mounting the PAD. Do not remove the rubber feet.

Cleaning and Maintenance of the PAD

The keypad surface is easy to clean by wiping with a damp cloth. Common cleaning solutions (non-abrasive) may be used; however, these should also be applied with a damp cloth, not sprayed. Keep in mind that the more aggressive the cleaning solution, the more quickly the keypad may fade. There is no other user maintenance required.

Caution: The unit must never be immersed in water.
PAD Configuration Instructions

PAD (DIN) Configuration Instructions for Model-4 and Mira terminals

The default PAD configuration is DIN; therefore the PAD is ready to be used simply by inserting the DIN cable into the model4 or Mira POS terminal. The PAD display will momentarily show the connectivity type configured when the unit is plugged into the POS terminal (PAD: DIN).

PAD (USB) Configuration Instructions for ADARA PC and thin client terminals

The USB model of the PAD communicates to the ADARA POS client as a COM device. When you connect the PAD by USB cable to a plug-and-play ADARA PC (Windows 2000, XP, XP embedded) a pop-up appears reporting that a plug-and-play device was attached. The operating system automatically sees the device, but you must install a driver before completing the hardware installation. Follow the instructions to Configure the PAD Device, and then follow the Pad - USB Installation (Quick Steps) below.

Configure the PAD Device

The PAD default configuration is DIN connectivity. To switch to USB or serial, change the connection type as follows:

1. Press and hold down the 9 key while inserting the PAD cable into the POS unit until the Pin Pad version number appears in the display window.
2. Release the 9 key. There are three menu items to configure: Connection Type, Unit ID, and Packet Suffix.
3. Under Connection Type, use the NO key to toggle through PAD connection types. Your choices are: USB, DIN, Serial, and IP. When the correct choice appears (USB) hit the ENTER key.
4. Under Unit ID: This is for future use. Hit the ENTER key to go to the next menu item.
5. Under Packet Suffix use the NO key to change the barcode suffix. Your choices are: None, CR\LF, CR, and LF. After your selection, hit the ENTER key.
6. The last screen of the configuration menu is informational only. It displays the unit number of the unit and the connection type selected.
Factory Default settings:

<table>
<thead>
<tr>
<th>Option</th>
<th>Default</th>
<th>Other Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Connection Type</td>
<td>DIN</td>
<td>USB, Serial, and IP</td>
</tr>
<tr>
<td>*Unit ID</td>
<td>0001</td>
<td>Open</td>
</tr>
<tr>
<td>*Packet Suffix</td>
<td>CR\LF</td>
<td>None, CR, and LF</td>
</tr>
</tbody>
</table>

**PAD – USB Installation (quick steps)**

1. Download the driver from: Uhttp://support2.sl-tech.net/SupportCenter/index_hardwaresupport.aspU. Make note of the location to which you downloaded the driver. If you receive a CD, you can install the driver from the CD.

2. Connect the PAD via USB cable.

3. See the previous section entitled **Configure the PAD Device** and configure the PAD device for USB connection. The operating system automatically sees the device and notifies you that new hardware has been found.

4. Under "Can Windows connect to Windows Update to search for Software?" select No, not this time.

5. Select Next.

The following screen will open:
6. Select 'Install the software automatically'.
7. Select Next.
8. Browse to the location where you downloaded the driver software, or to the CD drive if you are installing from a CD:

![Found New Hardware Wizard]

9. Select Next.

The following dialog box appears:

![Hardware Installation]

The software you are installing for this hardware:

PBPCDC Communications Port

has not passed Windows Logo testing to verify its compatibility with Windows XP. [Tell me why this testing is important.]

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

[Continue Anyway] [STOP installation]
10. Select the Continue Anyway button.

**Note for Windows 2000 Professional users** – If you get an error instead of the following screen, it is likely due to a known issue with some OEM versions of Windows 2000 installations that do not include the file USBSER.SYS in the %SYSTEMROOT%\SYSTEM32\Drivers directory. Copy the file USBSER.SYS on the included PAD CD (PADUSBdriver\usbser.sys) into the %SYSTEMROOT%\SYSTEM32\Drivers directory. Once this file is copied, restart the driver installation and it should install successfully.

%SYSTEMROOT% refers to the default windows operating system folder, such as - c:\windows\%

11. The driver software begins installation. When it has finished installing, click Finish.
12. Restart your computer or thin client.
13. Verify the COM port in Windows. From the Start menu, select Control Panel. Double-click System, and then select the Hardware tab from the System Properties dialog box. Open Device Manager, expand Ports on the left-hand side, and verify that the COM port in Windows matches the COM port for the PAD device.
15. Restart POS. The PAD – USB is ready to use.

**PAD (Serial) Installation Instructions for ADARA PC and thin client terminals**

**PAD – Serial Installation (quick steps)**

1. Connect the PAD – Serial and change the configuration to serial mode (see the previous section entitled **Configure the PAD Device** for instruction on changing the configuration).
2. Verify the COM port in Windows. From the Start menu, select Control Panel. Double-click System, and then select the Hardware tab. Open Device Manager, and verify that the COM port in Windows matches the COM port for the PAD device.
3. Start POS. Select the POS Advanced menu. Configure COM settings by selecting number 4 (Server Configuration and Ports). Enter the matching COM port. Enter a baud rate of 9600.

4. Restart POS and the PAD – Serial is ready to use.

**How to Use the PAD**

When powered on, the PAD display shows the version and then: Ready.

A customer may access their meal account either by swiping his/her ID card in either direction, or by keying in their ID number and pressing the Enter key.

**Card Swipe**

If a card is swiped, the bar code on the card must face the student (hint: facing keypad). After the card is swiped, the display shows the message: Sending ID for two seconds and the student number shows for one second followed by OK.

**Tip:** For more information on recommended bar code and card layout specifications, visit the documentation section of the Support Center website.

**ID#**

If the student enters an ID number on the keypad, each number displays. This feedback allows a student to use the <- key to erase a digit keyed in error and to reenter the correct digit. To reenter an ID number in its entirety, the student should press the Clear key and hold it down for two seconds until the numbers are erased, and then reenter the ID number. After the student enters the ID number and presses Enter, the display shows: Sending ID for two seconds followed by OK. If entered incorrectly, the student is prompted again.
## PAD Troubleshooting

### PIN Pad not working

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>The device may be bad.</td>
<td>Try the Input Device on the opposite side of the POS.</td>
</tr>
<tr>
<td></td>
<td>Try swapping the Input Device with one on a working POS.</td>
</tr>
<tr>
<td>If the PIN Pad works but you receive invalid IDs, the start and length position of the barcode may be set incorrectly.</td>
<td>At the **Setup</td>
</tr>
</tbody>
</table>

### Some cards do not work

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check alignment of barcode reader to make sure the top of the barcode is not lower than the red read light.</td>
<td>Remove bottom plate and adjust barcode reader. You may replace a ½” standoff with a ¼” standoff to raise the reader or add a washer to lower the reader.</td>
</tr>
<tr>
<td></td>
<td>Barcodes should be between ½” and 1” in height and be printed no lower than ¼ to 1/8” from the bottom of the card.</td>
</tr>
<tr>
<td></td>
<td>Barcodes must be standard code3of9 and contain numbers only.</td>
</tr>
</tbody>
</table>

### USB PAD does not send data to the ADARA POS program

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM port mismatch with input device setting in POS program.</td>
<td>Go to the <strong>Advanced Menu</strong> of the ADARA POS program and verify the COM port matches with the Windows device manager COM port assignment for the USB COM driver.</td>
</tr>
</tbody>
</table>

### Can’t install USB driver on Windows 2000

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 2000 is missing the file usbser.sys in the \windows\system32\drivers directory prior to the driver installation</td>
<td>Copy usbser.sys from driver CD to the \windows\system32\drivers folder and follow the <strong>PAD – Serial Installation (quick steps) directions</strong> for re-installation of the driver.</td>
</tr>
</tbody>
</table>

### Display shows USB: DIN and trying to install using USB cable.

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD not configured for USB, default is DIN</td>
<td>See <strong>PAD USB Installation</strong> for changing setup and assign the correct communication type.</td>
</tr>
</tbody>
</table>
### PAD Serial won’t power on

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power cable not inserted, bad power supply or bad unit.</td>
<td>Check AC power adaptor and make sure it is plugged into a power source and the cable connector.</td>
</tr>
<tr>
<td>Swap units and make sure the unit is good.</td>
<td></td>
</tr>
<tr>
<td>Swap power supplies.</td>
<td></td>
</tr>
<tr>
<td>Obtain RMA and return unit for repair if any components fail.</td>
<td></td>
</tr>
</tbody>
</table>

### Display of invalid characters when powered on or ghost characters appear

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs firmware update</td>
<td>Obtain RMA and return unit for repair</td>
</tr>
</tbody>
</table>

### Display is missing visible lines

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad LCD</td>
<td>Obtain RMA and return unit for repair</td>
</tr>
</tbody>
</table>

### Some keys work, some do not

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad membrane keyboard or needs firmware update</td>
<td>Obtain RMA and return unit for repair</td>
</tr>
</tbody>
</table>

### Unit periodically resets itself

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your PAD hardware requires an update to its programming. Models affected are PAD-DIN (PP3096) and PAD-USB (PP3097) shipped on or prior to Aug. 5 with firmware revisions older than 1.14. If you power on your PAD and see a firmware version such as 1.05 or 1.07 (anything less than 1.14), your PAD may experience this symptom.</td>
<td>You will need to upgrade the firmware to version 1.14 (or higher). The upgrade process consists of replacing the processor chip inside the unit, which can be done in the field. The processor chip is in a socket that can be removed by hand and replaced. Please contact our RMA department to report PAD issues and request service, 800-423-2113 menu option 3 then option 2; or email <a href="mailto:RMAs@sl-tech.net">mailto:RMAs@sl-tech.net</a>.</td>
</tr>
</tbody>
</table>

### Keypad entry seems to happen by itself

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your PAD hardware requires an update to its programming. Models affected are PAD-DIN (PP3096) and PAD-USB (PP3097) shipped on or prior to August 5, 2005 with firmware revisions older than 1.14. If you power on your PAD and see a firmware version such as 1.05 or</td>
<td>You will need to upgrade the firmware to version 1.14 (or higher). The upgrade process consists of replacing the processor chip inside the unit, which can be done in the field. The processor chip is in a socket that can be removed by hand and replaced. Please contact our</td>
</tr>
</tbody>
</table>
1.07 (anything less than 1.14), your PAD may experience this symptom.

RMA department to report PAD issues and request service, 800-423-2113 menu option 3 then option 2; or email mailto:RMAs@sl-tech.net.

### Keys pressed do not react appropriately

<table>
<thead>
<tr>
<th>Our Diagnosis</th>
<th>Try This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your PAD hardware requires an update to its programming. Models affected are</td>
<td>You will need to upgrade the firmware to version 1.14 (or higher). The upgrade process consists of replacing the processor chip inside the unit, which can be done in the field. The processor chip is in a socket that can be removed by hand and replaced. Please contact our RMA department to report PAD issues and request service, 800-423-2113 menu option 3 then option 2; or email <a href="mailto:RMAs@sl-tech.net">mailto:RMAs@sl-tech.net</a>.</td>
</tr>
<tr>
<td>PAD-DIN (PP3096) and PAD-USB (PP3097) shipped on or prior to Aug. 5 with</td>
<td></td>
</tr>
<tr>
<td>firmware revisions older than 1.14. If you power on your PAD and see a</td>
<td></td>
</tr>
<tr>
<td>firmware version such as 1.05 or 1.07 (anything less than 1.14), your PAD</td>
<td></td>
</tr>
<tr>
<td>may experience this symptom.</td>
<td></td>
</tr>
</tbody>
</table>


**Special Features**

**Migrating from POS to Touch Screens Terminals**

This section describes two possible migration routes which can be planned in advance when districts are faced with the possibility of moving from Model 4 POS’s (COM port devices) to touch screen (Ethernet devices). WinSNAP’s Model 4 terminals connect to the host computer’s *serial port* through either a standard COM port *adapter* (provided by School-Link Technologies) for Model 4’s and 4B’s, or through a RS232/RS422 adapter (provided by School-Link Technologies) for the Model 4C’s.

One migration route (“**Option 1**”) is to wire as the rest of this document describes, and replace wiring as necessary with network-capable wire when Ethernet terminals are implemented. The second migration route (“**Option 2**”) pre-plans for the eventual use of Ethernet connectivity, and puts infrastructure in place that minimizes work later.

**Tip:** Should you be planning to migrate from Model 4 POS terminals to Ethernet-based terminals in the future, or plan to operate in a mixed environment for some time, be sure to discuss that with your WinSNAP Project Manager and/or a School-Link Technologies Technical Support representative.
Option 1 - POS

Option 1 - Eventually replace this wiring with Cat 5 wire from these jacks to a data closet

Option 2 - Eventually place the Ethernet switch in the manager's office

Figure 6.3
Option 2 - Moving to Touch Screen terminals

Option 1 - Wiring replaced with network wire to a convenient data cabinet

Option 2 - Ethernet switch placed in the manager's office for data connectivity between units

Figure 6.4
Moving From Ethernet-Based Terminals To SNAP’s Model 4C (RS422) Terminals
SUGGESTIONS FOR WIRING WHEN CAT 5 WIRE EXISTS FROM POS LOCATIONS TO A PATCH PANEL  
(see previous page)

**Suggestion 1: Use a 'Barrier Strip'**  
(or another convenient method for making multiple parallel connections)

**GOAL:**  
All red wires connected together, all greens connected together, etc.  
(Wire colors are: Black, Red, Green, Yellow)

**Suggestion 2: Create a large parallel 'daisy-chained' circuit**

**GOAL:**  
All red wires connected together, all greens connected together, etc.  
(Wire colors are: Red, Green, Black, Yellow)

**Note:**  
Total wire length (total of all wire from POS locations to patch panel, plus patch cables and intermediate wiring, plus wire length to host computer) must not exceed 3000'.
Point of Sale Log File

WinSNAP allows you to save Point of Sale session key strokes and "play" them back at a later time, if necessary. To have WinSNAP save these keystrokes, see Activating the Point of Sale Log File.

Activating the Point of Sale Log File

1. Select Setup | Point of Sale | Keyboards & Testing Tab.
2. Click Edit on the Tool Bar.
3. On Question 2: “Activate log file for Point of Sale keystrokes?” select Yes from the combo box.
4. Click OK.

How to Capture Point of Sale Data

If you have activated the log file on the Setup | Point of Sale | Keyboards & Testing Tab then you are ready to begin capturing data. All you have to do is begin a meal session as usual. You will not be notified that your keystrokes are being saved.

After the meal session is complete, you can view this file by opening it in Notepad. It is called POSOperations.LOG. It is stored in the WinSNAP Folder. It is recommended that you rename this file.

Caution: IF 2. Activate log file for Point of Sale keystrokes? on the Setup | Point of Sale | Keyboards & Testing Tab is set to Yes you will receive a "Runtime Error 55, File already open" error if you have not renamed the LOG file. Point of Sale is running and trying to write to a log file that is already open.

Running on the Multiple Graphic Environment

1. Copy the desired POS log files to each computer.
2. Set up the POS icon on each desktop.
3. Double-click on the icon on all computers EXCEPT for Terminal 0.
4. Double-click on the icon on Terminal 0.
   As soon as Terminal 0 starts, the others will begin.
   When Terminal 0 has finished its log file, it will end the others and close, even if the others have not finished their log files.
To Save the Point of Sale Log

Since the file is overwritten after each Point of Sale Session, you may want to rename this file to save it. See Caution at the bottom of this topic.

1. **Open** your **Windows Explorer**.
   The Explorer is divided into two panes, one on the left side and one on the right.

2. **Double-click** on the **Program Files Folder** in your left pane.

3. **Double-click** on the **WinSNAP Folder** in your left pane.

4. Now, in the right pane, **right-click** on the file **POSOperations.LOG**.

5. **Select Rename** from the list.

6. **Highlight and type over** the word **POSOperations** to whatever you would like the file to be named. Be sure to leave the .LOG. You will not be able to open this file if this extension is not there.

7. **Press Enter** on your keyboard.
   You have just renamed the log file and it will not be overwritten during the next meal session. You might want to leave the file in this folder.

**Caution:** IF 2. Activate log file for Point of Sale keystrokes? on the **Setup | Point of Sale | Keyboards & Testing Tab** is set to Yes you will receive a "Runtime Error 55, File already open" error if you have not renamed the LOG file. Point of Sale is running and trying to write to a log file that is already open.

Running the Log File

**Caution:** Be very careful when using this program. Be sure that the default site is the same when running the log as when capturing it and use the same setup options. Running of the Point of Sale Log File does affect data!

1. **Double-click** on the on your desktop.
   The Point of Sale Program will open.

2. **Click Start**.
   Let the computer do its thing. Since you have already stated the meal session, it will take it from here and run through the entire session, just as if the cashier were there entering it now.
3. When the log has finished, **click End**.
   You will get a message asking you if you are sure you would like to end the session.

4. **Click Yes**.

**WinSNAP’s Automatic Script Facility**

Instead of just being able to view the Point of Sale Log File, you can also use WinSNAP’s Automatic Script Facility to “run” that file. By using this program, you will be able to view on screen each and every keystroke from Sign-On to Sign-Off just as if it were “magic”.

**Caution:** Be very careful when using this program. Be sure that the default site is the same when running the log as when capturing it and use the same setup options. Running of the Point of Sale Log File DOES affect live data!

**Setting Up the Automatic Script Facility**

1. On your Desktop, **right-click** to create a shortcut.
2. **Select New** from the list.
3. **Select Shortcut**.
   The Create Shortcut Screen will appear.
4. **Click** on **Browse**.
   The Browse Box will appear.
5. **Double-click** on your **local drive**.
6. **Double-click** on **Program Files**.
7. **Double-click** on **WinSNAP**.
8. **Click** once on **POSOperations.exe**.
9. **Click OK**.
   Your string should be similar to:
   "C:\Program Files\WinSNAP\POSOperations.exe"
10. **Click Next**.
    The Select a Name for this Shortcut Screen will appear.
11. **Type** in any **name** that you would like the shortcut to be called.
12. Click Finish.
    You will now see **with the name that you chose on your desktop.**
13. **Right-click** on this **icon**.
14. **Select Properties** from the list.
   The Properties Window will open.

15. **Edit** the following **Property**:
   Target: “C:\Program Files\WinSNAP\POSOperations.exe” (meal session B or L) FileName.LOG 1000.
   Example:
   “C:\Program Files\WinSNAP\POSOperations.exe” L “011298.LOG” 1000 /GT

   means that I want to run a Lunch session log file named 011298.LOG.

16. **Click OK**.

   **Note:** The 1000 represents a delay of 1000 in milliseconds or one second between keystrokes. This number controls how fast the log will run. 1000 is a reasonable value for a normal viewing speed. You may wish to set it as 10 to have it process faster.

   **Note:** The /GT at the end of the command line tells it to run on the Graphic Terminal. The automatic POS utility is only compatible with Graphic Terminal, not POS Client.

---

**To View the Point of Sale Log**
After the meal session you can view the file by opening it with Notepad. Here is an easy way to do that.

1. **Open** your Windows Explorer.
   The Explorer is divided into two panes, one on the left side and one on the right.

2. **Double-click** on **Program Files** in your left pane.

3. **Double-click** on **WinSNAP** in your left pane.

4. Now, in the right pane, **double-click** on the **log file**.
   It will be named POSOperations.LOG unless you have renamed it. The log file will automatically open in Notepad. The letters and numbers probably won’t mean very much to you. See What the Information Means to decipher the keyboard scan codes.
What the Information Means

When you first open a Point of Sale log file you'll see lots of letters and numbers. These are the keyboard scan codes that the Point of Sale Program uses.

Note: The Point of Sale Program periodically places a timestamp in the log as a guide to find certain events during a long meal session.

Point of Sale Terminal Keyboard Scan Codes

Here are the Point of Sale Terminal Keyboard Scan Codes for both Model 4 and Mira used to decipher the Log File. This chart is set up to look exactly like the Point of Sale terminal for your convenience.
Model 4

<table>
<thead>
<tr>
<th>Item</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
<th>F9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3A</td>
<td>3D</td>
<td>3Q</td>
<td>3U</td>
<td>3V</td>
<td>3Y</td>
<td>3K</td>
<td>3L</td>
<td>3T</td>
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<td>34</td>
<td>35</td>
<td>36</td>
<td>35</td>
<td>39</td>
<td>3U</td>
<td>3V</td>
</tr>
<tr>
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<td>A9</td>
<td>B6</td>
<td>B5</td>
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<td>B9</td>
<td>B7</td>
<td>B2</td>
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<tr>
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<td>B5</td>
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</tbody>
</table>

**Note:**
- The table represents the layout of keys on the Model 4 device.
- Each row corresponds to a specific key sequence that触发s a particular action or function.
Bar Code Cards, Labels, Etc.

Bar Code Template
School-Link Technologies uses Standard Symbology (code 39) for its bar code cards. With Standard Code 39 the series of lines are spaced farther apart from each other than the condensed version. Standard Code 39 is highly recommended over Condensed Code 39 because the additional spacing with Standard Code 39 makes for consistent reading of student ID cards.

Condensed Code 39 can be used with WinSNAP, however in order to ensure consistent reading of student ID cards a Hand Held Bar Code Reader is required. The Hand Held Bar Code Reader is a superior input device that can read undamaged Condensed and Standard Code 39 bar code symbols with 100% reliability. It is available through School-Link Technologies, however it is more expensive than the Bar Code Card Slot Reader or the Bar Code Wand. Should Condensed Code 39 be used without using the Hand Held Bar Code Reader, some cards may not scan at all.

This is important because future needs may require integration with a universal student ID card for building security, transportation, library and food service. The card size and template below is a good guide for bar code sticker placement if you are making your own cards. Should you have cards made for you, this is important information to provide to your card vendor. Pay special attention to the final location of the bar code symbol on the card as well as the height of the bar code symbol. Mistakes in the location of the bar code symbol on the card are sometimes made when producing laminated cards. The most common error is not taking into account the increased height the bottom edge of the lamination material adds to the final location of the bar code symbol. This can cause the bar code symbol to be elevated to a point where the bar code symbol is above the optic reader’s window inside the Bar Code Card Slot Reader and not able to be read.

For best results in printing ID Cards, labels or rosters use only laser printers. Desk jet printers often do not print the bar code symbol with the clarity required for the bar code readers to interpret the symbol.

Test Mode Card
A test mode card can be used to read a series of bar code numbers without having to start a POS session. This can be convenient for checking that the bar code cards scan correctly, whether made by School-Link Technologies or a third party.

Making A Test Mode Card
Add a customer record called TEST and add %% as the bar code number. On the actual card you will see *%%*.
Using A Test Mode Card

Power-on the POS without connecting it to any computer. Scan the test mode card, and scan as many cards of your own as you wish. The bar code number encoded on the card should be displayed for each one, on the POS display.

**Note:** Since the POS is not connected to the computer (or the computer is not running a POS session,) you will need to power down the POS terminal between cards. Of course, this procedure is only needed for testing purposes.

Bar Code Cards, Labels, Etc.

There are several ways in which you can produce and maintain an updated set of bar code cards with current student data.

**Scenario 1 - School Link Technologies Produces Credit Card Type Card**

School Link Technologies can take your student database and produce durable credit card type plastic cards with or without your school’s logo. Up-to-date changes can be maintained by using supplemental signature strip plastic cards with pre-assigned bar codes. The new bar code number can be added to the system when assigned to a specific student.

**Scenario 2 - District Produces Laminated Cards Using WinSNAP**

WinSNAP allows you to quickly produce and distribute paper cards that can be laminated. You can make replacement cards and cards for new students at the School Site or at the Central Office. School-Link Technologies can supply standard or Energy Express and all required lamination materials.

**Scenario 3 - District Produces Bar Code Label Using WinSNAP**

An external bar code label is a coded label that can be applied to the outside of the bar code card. We recommend that you call Lableon Imaging Supplies (1-800-428-5566) to obtain a list of local suppliers or go to a local office supply store. The name of the type of labels you need to request is “Bardura Pressure Sensitive Labels”. They come in different types based on the printer being used: Ink Jet Printer Labels (Product # BD-230) or Laser Printer Labels (Product # BD-330). Both are 1”x2 5/8” and are 30 per sheet with 50 sheets per box.

**Scenario 4 - District Contracts To A Third Party For A Customized Card Or If Using An Existing Card**

You can contract to a 3rd party company to produce your cards. A sample card will need to be mailed to your WinSNAP Project Manager to test prior to scheduling. Details such as where the bar code is placed on the card, type of font used to produce cards and color of card and logos can prevent your third party card from being read.
Bar Code Placement on Cards

Sample plastic card or non-laminated card

center of bar code should be 1/2" above the bottom of the card

No graphics or writing here!

Sample laminated card

center of bar code should be 1/2" above the bottom of the lamination

No graphics or writing here!

Equipment Maintenance

Returning POS Equipment - RMA Procedures

From time to time company products must be returned for repair or replacement. The only individuals authorized to issue Return Material Authorization (RMA) numbers are representatives of the RMA department, after the Technical Support staff has made a technical assessment. The RMA department will follow through in shipping a replacement item in accordance with the customer request.

The customer is responsible for in-bound freight and out-bound shipping charges for all RMA goods and will be billed accordingly. Customers who fail to return replaced goods on a timely basis will be billed for the cost of the replacement items. Goods returned for other purposes such as exchange of a card reader for a wand, etc., are subject to a restocking charge.

When returning terminals for repair they should be packaged in non-static foam packing material. If this is not available, please wrap the terminal top in a plastic bag before adding packing material to the box. It is important to keep the packing material from becoming wedged between the circuit board and the case.
Spare Parts Recommendations

While failures are rare, most repairs can be done quickly and on site. School-Link Technologies sells the following spare parts that can be immediately removed and then swapped out using the above RMA procedures. This service is available only to districts subscribing to terminal maintenance.

- Extra Terminals
- Extra Power Supplies
- Extra Jumper Cables (jumper cables used between computer and wall connector, and POS units and wall connectors)
- One each of the input devices you intend to use (slot reader, PIN Pad, etc.)

Repairing and Replacing Parts

Jumper Cables

If you have tested jumper cables using a Paladin Tester and do not receive a continuity signal, cut the terminal end from one end of the cable and replace with a new terminal end. Test again with the Paladin Tester. If still not getting a continuity signal, cut the other end and replace that terminal end. Make sure the clips on the terminal ends are on the same side of the cable (seam side). If it still does not get a continuity signal, then the wire is broken somewhere other than at the terminal ends.

Chips

Sometimes you may need to upgrade a terminal’s chip. To ensure that you’re inserting it properly, look at the chip with the pins down. You should see a part number, an M logo, and the word Microchip. To the left of that is a half-circle notch at the end of the chip, and in the bottom left corner is a small round notch. Now, look at the circuit board with the port openings, dip switches, etc at the top and the cable strips at the bottom. The green ribbon cable should now be to your right. The notch goes in the end of the chip socket that has the R15 label to the left of it, and has a small transistor right next to it. Underneath the socket at the far left is label U0. The circle on the chip indicates pin U0, and these two should match up.

Tip: Call Technical Support for information on returning Point of Sale hardware.