CONFIGURING YOUR IP PRINTER

Use these instructions to configure the radio inside your MONARCH® Sierra Sport™ 2 IP Printer. The IP printer operates on any WiFi (Wireless Fidelity) compatible 802.11b RF network. Make sure your access point and network are correctly set up. Refer to your network manuals for more information. This manual does not include information about setting up your RF network. Refer to the printer's Quick Reference for information about loading supplies, etc.

Installing the Configuration Utility

Download the Configuration Utility from our Web site (www.monarch.com/service/service_utilities.htm). This utility supports the following platforms: Microsoft® Windows® 98/2000/ME and Windows NT® (SP3+). If using WinPCap version 2.3 or greater, Microsoft Windows XP and 95 are supported. Follow the instructions provided. Read **readme.txt** for updates and more information.

After installing the Configuration Utility, you can set up the printer using a serial cable or by using your network. For initial printer setup, you must use the serial interface.
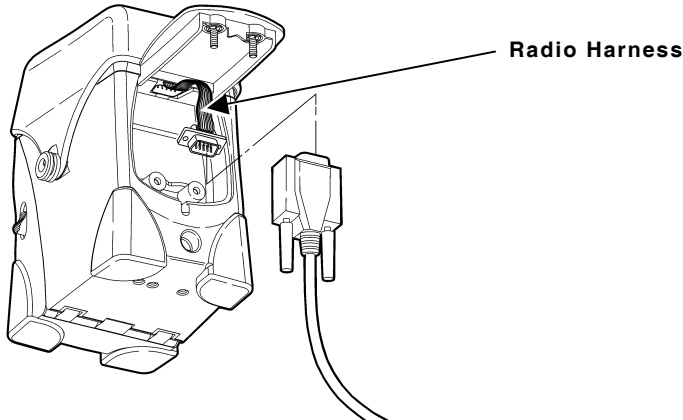
About the Configuration Utility

This utility allows you to easily configure your IP printer.

1. Start the Configuration Utility.
2. Click **Features List** to see a list of supported radios.
3. Click **Ok** when finished.
4. Click **About**/**Disclaimer** to see the version number of the Utility.
5. Click **Ok** when finished.
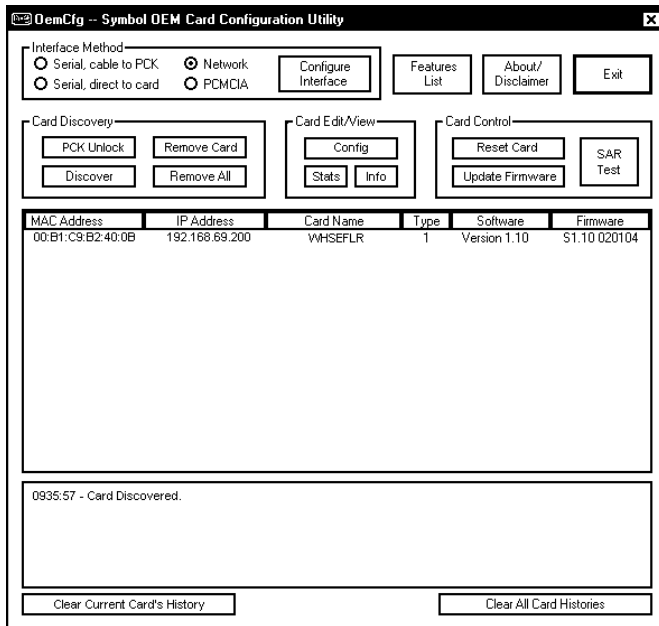6. Click **Exit** to exit the Utility.

Selecting the Printer Using a Serial Interface

Before you can use the IP printer, you must configure it. All nodes of a wireless network need to have the same settings in order to communicate with each other. **For initial printer setup, you must use the serial interface**.

1. Connect a serial cable (DB9 female to DB9 female all lines wired straight through) from the host or PC to the printer's radio harness.
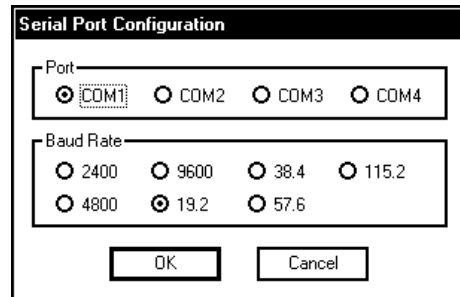

Radio Harness

2. Turn on the printer.
3. Start the Configuration Utility. Depending on the Configuration Utility's version, the screens may appear differently.
4. Select **Serial, direct to card**.

OemCfg -- Symbol OEM Card Configuration Utility ☒

Interface Method
- ○ Serial, cable to PCK   ⊙ Network
- ○ Serial, direct to card   ○ PCMCIA

[Configure Interface]   [Features List]   [About/ Disclaimer]   [Exit]

Card Discovery
[PCK Unlock]   [Remove Card]
[Discover]   [Remove All]

Card Edit/View
[Config]
[Stats] [Info]

Card Control
[Reset Card]   [SAR Test]
[Update Firmware]

MAC Address	IP Address	Card Name	Type	Software	Firmware
00:B1:C9:B2:40:0B	192.168.69.200	WHSEFLR	1	Version 1.10	S1.10 020104

0935:57 - Card Discovered.

[Clear Current Card's History]   [Clear All Card Histories]

5. Click **Configure Interface**.

6. Make sure you select the correct communication port and 19.2 Baud Rate (19.2 is the only supported baud rate).

7. Click **Ok**.

8. Click **Discover**.

Since you are connected through a serial interface, only one printer appears.

Serial Port Configuration

Port
- ⊙ COM1   ○ COM2   ○ COM3   ○ COM4

Baud Rate
- ○ 2400   ○ 9600   ○ 38.4   ○ 115.2
- ○ 4800   ⊙ 19.2   ○ 57.6

[OK]   [Cancel]

The Card History Window appears at the bottom of the screen to give a status of the connected printers. For example, you may see a message "Card Discovered" when an IP printer is discovered by the Configuration Utility. Messages also appear when printers are turned off or disconnected from the network. You can highlight a printer and **Clear Current Card's History** or **Clear All Card Histories**.

9. Highlight the printer to configure and click **Config**.
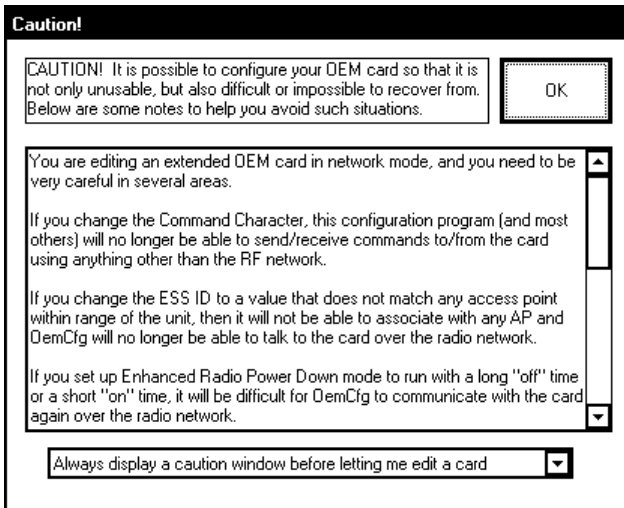
A CAUTION window appears. Read **all** the information. You can disable the CAUTION window for this session or permanently. Click **Ok** to continue.

10. Follow the steps in "Configuring the RF Interface."
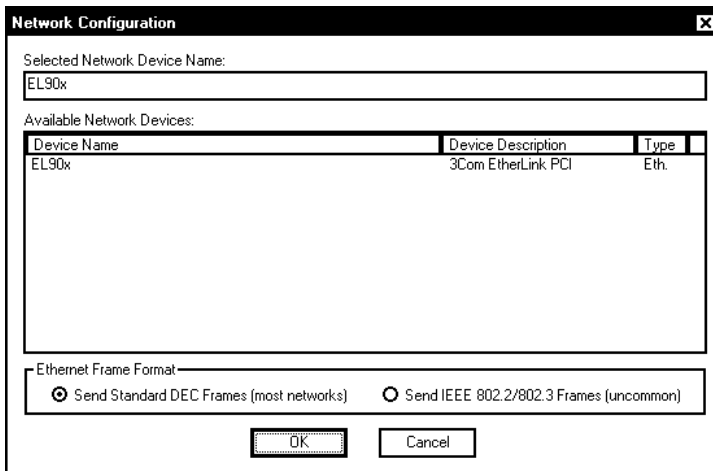
Selecting the Printer Using a Network Interface

Follow these steps to select a printer using a network interface or to verify printers on a network.

1. Turn on the printer.

2. Start the Configuration Utility.

3. Select **Network**.

4. Click **Discover**.

Since you are connected through a network interface, multiple printers may appear.

The Card History Window appears at the bottom of the screen to give a status of the connected printers. For example, you may see a message "Card Discovered" when an IP printer is discovered by the Configuration Utility. Messages also appear when printers are turned off or disconnected from the network. You can highlight a printer and **Clear Current Card's History** or **Clear All Card Histories**.

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5. If necessary, click **Configure Interface** to check the network devices available on the host.

```
┌─ Network Configuration ──────────────────────────────────────── ☒ ┐
│                                                                    │
│  Selected Network Device Name:                                     │
│  ┌──────────────────────────────────────────────────────────────┐ │
│  │ EL90x                                                         │ │
│  └──────────────────────────────────────────────────────────────┘ │
│                                                                    │
│  Available Network Devices:                                        │
│  ┌─ Device Name ──────────────┬─ Device Description ─┬─ Type ─┐   │
│  │ EL90x                      │ 3Com EtherLink PCI   │ Eth.   │   │
│  │                            │                      │        │   │
│  │                            │                      │        │   │
│  │                            │                      │        │   │
│  │                            │                      │        │   │
│  │                            │                      │        │   │
│  │                            │                      │        │   │
│  └────────────────────────────┴──────────────────────┴────────┘   │
│                                                                    │
│  ┌─ Ethernet Frame Format ──────────────────────────────────────┐ │
│  │  ⊙ Send Standard DEC Frames (most networks)   ○ Send IEEE 802.2/802.3 Frames (uncommon) │ │
│  └──────────────────────────────────────────────────────────────┘ │
│                    ┌─────────┐        ┌─────────┐                  │
│                    │   OK    │        │ Cancel  │                  │
│                    └─────────┘        └─────────┘                  │
└────────────────────────────────────────────────────────────────────┘
```

6. Make any changes and click **Ok** when finished or click **Cancel** to exit without saving any changes. You return to the Main screen.

7. Highlight the printer you want to configure and click **Config**. A CAUTION window appears. Read **all** the information. You can disable the CAUTION window for this session or permanently. Click **Ok** to continue.

8. Follow the steps in "Configuring the RF Interface."

Configuring the RF Interface

Setting a Name and ESS ID

1. Enter a **Unit Name**. Use a meaningful name, for example, WHSEFLR.

2. Enter the **802.11b ESS ID**.

NOTE: The ESS ID address is case-sensitive.

3. Enter a valid address for the **Remote IP** (even if you are not using the remote IP).

Setting the Protocol for Listen Mode

Listen mode waits for a host to connect to the specified port and receives data. Listen mode can be used with TCP (select port number) or LPD (no need to specify port) protocols.

1. Select the **Protocol** as TCP or LPD. Do not use UDP.

2. Select the **Connection Mode** as Listen.

3. Select the **Port**.

Setting the Protocol for Call Remote Mode

Call remote mode initiates the data transfer. Call remote can be used for TCP (select port number) or Telnet (no need to specify port) protocols.

1. Select the **Protocol** as TCP or Telnet from the Card Configuration screen. Do not use UDP.

2. Select the **Connection Mode** as Call Remote.

3. Specify the **Remote IP Address**.

4. Select the **Port**.

5. Enter the amount of **Retries** in milliseconds after a failure before a connection is tried again.

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Setting the Power Save Mode

1. Select the **Power Save** mode by checking the Enable box from the Card Configuration screen.

2. Set the **Algorithm** to a value between 1 and 10. 1 is the shortest sleep time (uses battery power quicker, but responds faster); 10 is the longest sleep time (optimal battery conservation, but responds slower).

   If the **Power Save** mode is not enabled, the device operates in CAM mode (constantly awake). CAM means the printer is continuously receiving and transmitting data. This mode uses battery power quickly.

NOTE: Do not change the Beacon Minimum and Beacon Maximum values. The printer does not support these parameters.

Do not use the Micro AP Mode, Operation Options, or Communication Settings. Changing any of these values may cause the printer to stop communicating!

Do not change the **Manager MAC Address** from the **Other Parameters** section.

Setting WEP Options

**1.** To set WEP options, click **Extended Configuration** from the Card Configuration screen.

NOTE: Make sure these WEP settings match those for your Access Point.

2. Set the **WEP Authentication** as
0 − Open System,
1 − 40-bit keys, or
2 − 128-bit keys.

3. Enter the four Key values according to the Access Point.

NOTE: The key values must be entered in Hexadecimal.

4. Select the Key you want to be active.
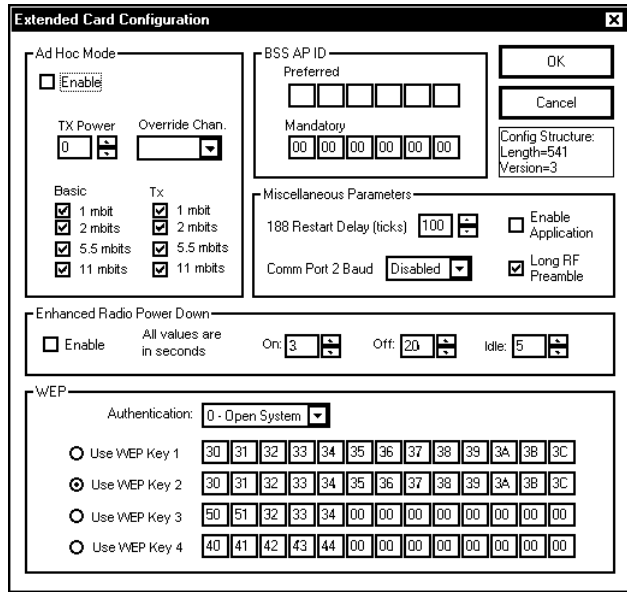
Setting Ad Hoc Mode

1. Select the **Ad Hoc Mode** by checking the Enable box.

2. Select the **Override Channel**. All devices must be on the same channel to communicate.

In Ad Hoc Mode, you do not need an Access Point. It operates as peer-to-peer, so as long as the devices are in range, they will connect and communicate with each other.

In Ad Hoc Mode, set the ESS ID address to something other than what the Access Point is set to; otherwise, you may not be able to communicate. For example, use the letters "AH" at the end of your ESS ID for "Ad Hoc" Mode.

NOTE: If you do not enable Ad Hoc Mode, you are in infrastructure mode, which requires an Access Point.

Setting Miscellaneous Parameters

1. Set the **Basic** and **TX Rates** for Ad Hoc mode only. In infrastructure mode, the printer uses the Access Point's TX Rates.

2. Set the **Preferred BSS AP ID** or **Mandatory BSS AP ID**.

    If Mandatory AP (Access Point) is set, the printer ONLY associates with that Access Point. If that particular Access Point is not found, the printer is unable to access the network.

    Preferred BSS AP ID is reserved for future use. If Preferred AP is set, the printer attempts to associate with the preferred Access Point. If that particular Access Point is not found, the printer associates with any available Access Point it detects.

    If neither of these settings are specified, the printer associates and roams to any Access Point it can reach.

3. Set the **TX Power** (transmit power) for Ad Hoc mode only. 0 is the maximum "full power"; 4 is the minimum. In infrastructure mode, the printer uses the Access Point's TX Power settings.

NOTE: Do not change the 188 Restart Delay (ticks), Comm Port 2 Baud, leave the Enable Application check box disabled (unchecked), and do not change any of the Enhanced Power Down Mode selections.

4. Enable or disable the **Long RF preamble** from the Card Configuration screen check box based on your Access Point. If your Access Point has long RF preambles disabled, make sure they are disabled here.

5. Click **Ok** when finished with the extended card configuration options.

Selecting the IP Addressing Method

Determine which method of IP addressing your network supports: Static IP, BOOTP, or DHCP.

Static IP Configuration

1. Enter the Local IP Address on the Card Configuration screen.
2. Enter the Subnet Mask.
3. Enter the Gateway (if necessary).
4. Enter a valid address for the Remote IP (even if you are not using the Remote IP).

BOOTP Configuration

1. Set the IP Address (Local) to all zeros on the Card Configuration screen.
2. Make sure the check box for "Enable DHCP" is NOT checked.
3. If you enable the check box "Replace static remote IP with BOOTP server IP," the current remote IP address is overwritten with the IP address of the BOOTP server.

DHCP Configuration

1. Set the IP Address (Local) to all zeros on the Card Configuration screen.
2. Select the check box for "Enable DHCP."
3. If you enable the check box "Replace static remote IP with DHCP server IP," the current remote IP address is overwritten with the IP address of the DHCP server.
4. Set the remaining options according to your network.

NOTE: Use extreme caution if you check "Flash DHCP settings upon response." If checked, the DHCP settings are flashed and saved. The next time the device is turned on, it comes up as a Static IP, not DHCP.

Saving the Configuration

1. Click **Program Card and Exit** to program the card with the current configuration settings on the Card Configuration screen. A message appears "Ready to update the card. Ok to proceed?" Select **Ok** or **Cancel** to continue. OR
Click **Save to File** to save this configuration to a file to use for another printer. When you use **Restore from File**, update the IP address, etc. if needed.

2. Click **Exit** when you are finished configuring the printer using the Configuration Utility.

3. Turn off the printer.

4. Remove the serial cable from the host to the printer's radio harness.

5. Connect the printer's radio harness to the printer's serial port.

6. Turn on the printer.

   The IP printer is ready to use.

Serial Port

Radio Harness
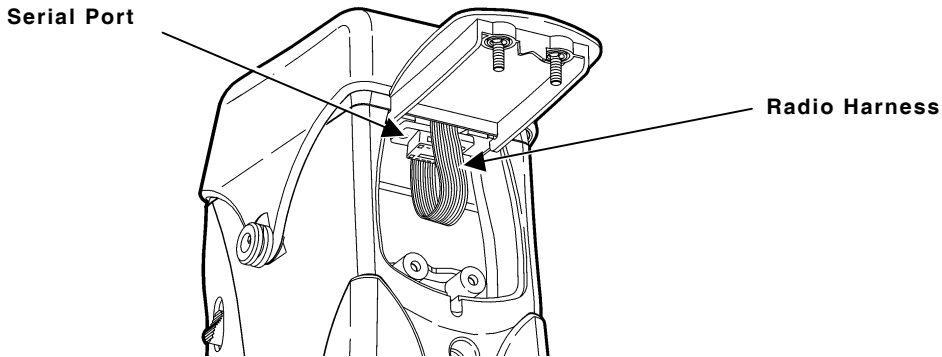
NOTE: Do not change any of the communication settings on the printer itself. Changing those values causes the printer to stop communicating!

Checking the IP Address

Turn **on** the printer by pressing and holding the ⓘ button until the display turns on.

The display flashes printer version information, battery charging status, and then you will see:

```
Ready


  ‖       <T>
```
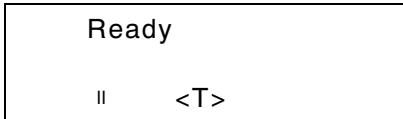
The **<T>** on the display indicates the printer is connected to a network (peer to peer or infrastructure mode). 𝓧 indicates the printer is not connected to a network.

When you see "Ready," press the **Center** navigational button to display the printer's IP address. Press any button to return to Ready mode.

Battery and Safety Information

♦ The printer uses a 7.4V lithium-ion battery.

♦ You must charge a battery before using it. For optimal battery life, fully charge the battery within three months of receipt.

♦ The battery should be charged immediately for either long term storage or after the battery has been exhausted from a printing session. Frequent charging will actually prolong battery life and has no negative effects such as memory issues.

♦ It is normal for battery capacity to decrease up to 20% over the first 300 cycles.

WARNING

Use only Monarch chargers (Monarch® 9462™ Single Station Charger or the Monarch® 9464™ Four Station Charger) designed for lithium-ion batteries when charging. The battery might explode if placed on a different charger.

♦ Charging time is approximately 1.5 to 3 hours.

♦ Take the battery out of the printer when storing the printer for a month or longer.

- The optimal battery storage temperature is 50°F to 73°F (10°C to 23°C) with a maximum temperature of 104°F (40°C). The battery may permanently lose charging capacity at temperatures less than 32°F (0°C) or greater than 104°F (40°C). For longest life, the battery should be stored in a cool, dry place.
- The recommended temperature for charging is 68°F (20°C) to 77°F (25°C).
- Disposal information - Do not throw in trash. Dispose according to your local regulations. The Rechargeable Battery Recycling Corporation (RBRC®) is a non-profit organization created to promote recycling of rechargeable batteries. For more information about how to recycle batteries in your area, visit **www.rbrc.org**. Batteries can also be returned postage-paid to: ERC; 200 Monarch Lane Door #39; Miamisburg, OH 45342.

<div align="center">

CAUTION

Do not disassemble, short circuit, heat above 80°C, or incinerate. The battery may explode.

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- Do not let the battery get wet or come into contact with metal objects.
- Do not use a battery with a cracked case.

Battery Considerations

- The printer uses battery power even when the printer is not printing. Remove the printer's battery and place on a charger when the printer is not in use.
- Your printer and network's usage and configuration impacts your printer battery life -- use the printer, access point, and wireless network power management configuration's to increase your printer's battery life.
- Many factors affect your battery's performance, including the quantity of labels being printed, intervals of batches printed, percentage of black per label, power management of the printer, power management of the radio, connectivity and configuration of the host or node, and buffered queues.

Troubleshooting

Use the following table to correct some minor problems that may occur.

Problem	Action
Printer does not connect to a network (peer to peer or infrastructure mode) or display **<T>**.	Make sure the printer's radio harness is still connected to the printer's serial port. After a drop, the cable may become disconnected. Verify the settings for Infrastructure or Ad Hoc mode (ESS ID, WEP, etc.).
The printer is not configured.	Make sure the correct cable is connected. **To configure the printer's radio**, use a DB9 female to DB9 female (all lines wired straight through) cable. After configuring the printer's radio, connect the printer's radio harness to the printer's serial port. **To configure the printer** using the serial port, use a null modem cable (part number 12029314 or 12029315).
The printer does not communicate with your network.	Make sure your network settings for : ♦ ESS ID ♦ Protocol ♦ Ad Hoc or Infrastructure mode ♦ WEP options for keys and encryption ♦ Long RF preamble ♦ IP Address, Gateway, and Subnet Mask match the printer's radio configuration. If your network's protocol is set for LPR, make sure you specify LPD protocol, not TCP.

For additional troubleshooting, disconnect the printer's radio harness and use the printer's RS232 port for diagnostic purposes. Your System Administrator can use the printer's Diagnostics Menu. Call Technical Support for more information.

Printer Specifications

Height:	6.6 inches (168 mm)
Width:	3.6 inches (91 mm)
Depth:	4.8 inches (122 mm)
Weight:	1.9 pounds (.86 kg)
Shipping Weight:	3.5 pounds (1.6 kg)
Printing Rate:	Up to 3 inches (76 mm) per second
Operating Limits:	40° to 104° F (5° to 40° C) Storage -40° to 140° F (4° to 60° C) **NOTE:** This is also the operating range for the battery.
Battery Type:	7.4V Lithium Ion
Inches Per Charge:	Up to 5,000" of 25% black printing on the supply **NOTE:** Inches per charge will vary according to your setup and usage.
Battery Cycle Life:	Approximately 300 discharge cycles Cycle life is approximate. Many factors effect an individual battery's performance.

IEEE 802.11b Specifications

Frequency:	2.4 GHz range, direct sequence
Communication Rate:	11 Mbps
Protocols:	TCP/IP PassThrough BOOTP DHCP LPD/LPR

For supplies, service or assistance, call toll free:
1-800-543-6650 (In the U.S.A.)
1-800-263-4650 (In Canada)
www.paxar.com