



TS-EPS

Installation Instructions

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Important Safety Messages


INCON equipment is designed to be installed in association with volatile hydrocarbon liquids such as gasoline and diesel fuel. Installing or working on this equipment means working in an environment in which these highly flammable liquids may be present. Working in such a hazardous environment presents a risk of severe injury or death if these instructions and standard industry practices are not followed. Read and follow all instructions thoroughly before installing or working on this, or any other related equipment.


As you read this guide, please be aware of the following symbols and their meanings.

Warning  This symbol identifies a warning. A warning sign will appear in the text of this document when a potentially hazardous situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of severe bodily harm or even death.

Caution  This is a caution symbol. A caution sign will appear in the text of this document when a potentially hazardous environmental situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous environmental situation may involve the leakage of fuel from equipment that could severely harm the environment.

Danger  This symbol identifies an electrical danger. An electrical danger sign will appear in the text of this document when a potentially hazardous situation involving large amounts of electricity may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of electrocution, severe bodily harm, or even death.

Warning  **Follow all applicable codes governing the installation and servicing of this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and any related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on during installation or servicing. Please refer to the *Installation and Owner's Manual* for this equipment, and the appropriate documentation for any other related equipment, for complete installation and safety information.**

Warning  **Follow all federal, state and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage and/or environmental contamination.**

Introduction

The TS-EPS (Tank Sentinel - Ethernet Port Server) and TS-EPS-N (Tank Sentinel - Ethernet Port Server - Null) provide communication to an ATG (Automatic Tank Gauge) through a LAN (Local Area Network). The EPS uses a 10 Base-T network configuration and communicates with the ATG using the RS-232 protocol, which allows the user to communicate to the ATG remotely, without the need for a phone line, using INCON's System Sentinel, System Sentinel AnyWare, or other software application.

There are two versions of the EPS: the TS-EPS and the TS-EPS-N. The TS-EPS is packaged with a DB-9M to DB-9F straight serial cable and configured to connect to any Franklin Fueling Systems ATG. The TS-EPS-N is packaged with a DB-9F to DB-25M null modem cable and is configured to connect to a Veeder Root TLS-350 or other manufacturer's ATG.

Abbreviations and Acronyms

ATG - Automatic Tank Gauge

DHCP - Dynamic Host Configuration Protocol

IP - Internet Protocol

ISP - Internet Service Provider

LAN - Local Area Network

PC - Personal Computer

SSA - System Sentinel *AnyWare*

TS-EPS - Tank Sentinel - Ethernet Port Server

TS-EPS-N - Tank Sentinel - Ethernet Port Server - Null

Tools and Supplies Needed

- 10 Base-T network (Cat-5) cable with RJ-45 connectors – to connect the EPS to a LAN
- Mounting hardware
- PC with a null modem adaptor/cable or connected to a LAN
 - Minimum PC system requirements: 233mhz processor, 32MB RAM, 5MB of disk space, CD-ROM drive and Windows 95, 98, NT 4.0, 2000 or XP

The network administrator will need to provide the following information for programming the EPS:

- IP Address
- Subnet Mask
- Gateway and Destination IP

Hardware Installation

1. With an indelible ink pen, record the IP address that will be used for this device on the label on the back of the unit (see Figure 1). *The IP address will be handy to have around when working with a multiple IP node site.*

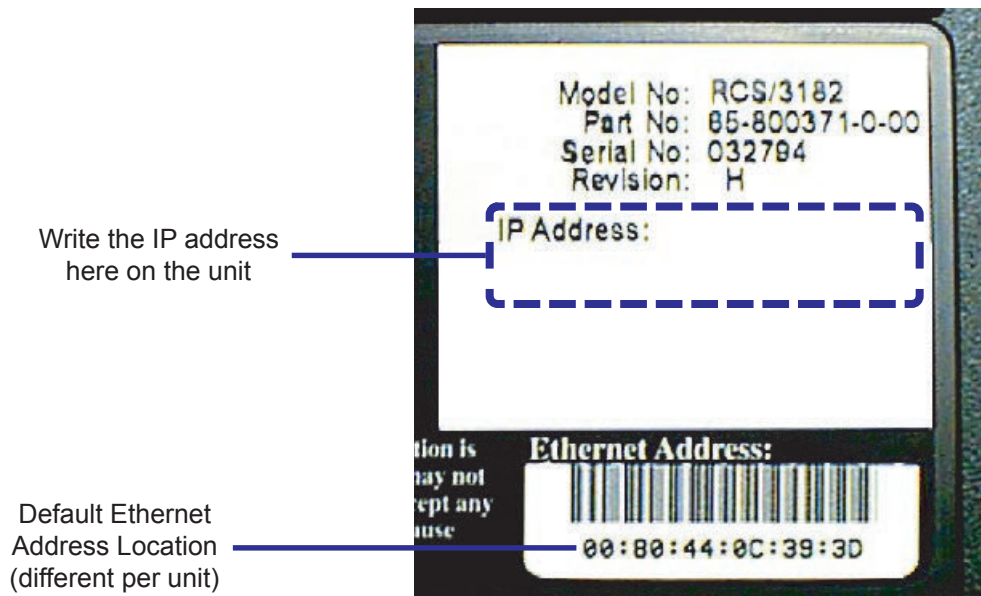


Figure 1 - Bottom of TS-EPS

2. Assemble the TS-EPS unit in the following order (see Figure 2):
 - a). Mount the two side brackets onto the unit.
 - b). Connect the interface cable (provided) from Port 1 on the EPS to: Comm 1 on a FFS ATG, the RS-232 card on a TLS-350, or the appropriate port on another manufacturer's ATG. Some models may need a DB-9 to DB-25 adaptor (also known as a "gender changer").
 - c). Plug one end of a RJ-45, 10 Base-T Ethernet cable into the TS-EPS LAN Port and the other end into the server or server hub.
 - d). Plug the power adapter into the back of the TS-EPS and the 115 VAC plug into an electrical outlet.
 - e). Install the TS-EPS on a vertical or horizontal surface using four (4) appropriate fasteners (e.g. dry wall screws).
3. Once the connections are made, the unit will turn on and become ready for use. The TS-EPS will run onboard diagnostics and the LEDs will light.

Note: • The front panel LED will blink green during normal operation.

- The LAN connection LED will light up green and blink to reflect data activity on the LAN.
- The TS-EPS Port 1 LED will remain amber until INCON's System Sentinel establishes a connection with the ATG, and, once the connection has been made, the LED will flash green.

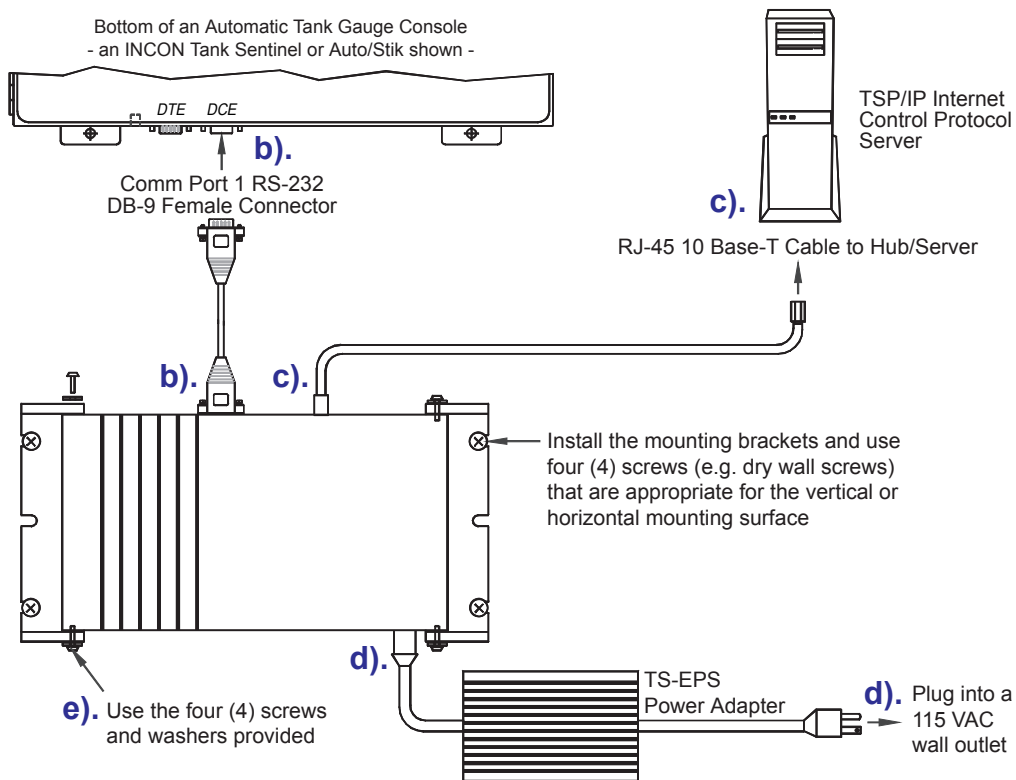
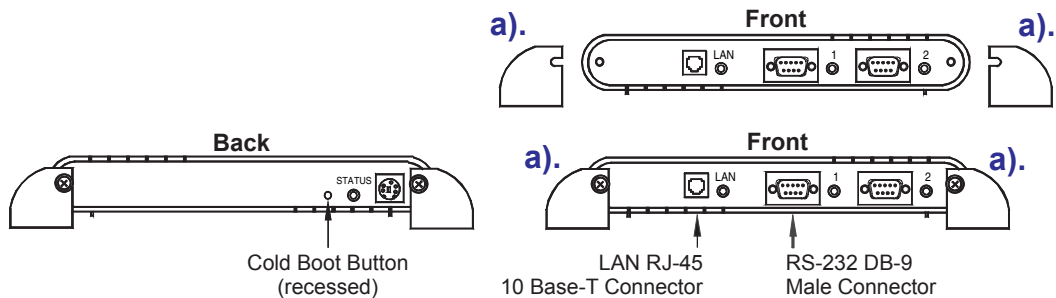


Figure 2 - TS-EPS Installation

Network Configurations

There are many possible network configurations that the TS-EPS can integrate with. In this section we will discuss two common setups: frame relay networks and cable/DSL connections.

Frame Relay Networks

When setting up an EPS on a frame relay network, the router will have a public IP address (provided by the site). The router needs to be programmed to route the traffic it receives on port 8001 to a private IP address. The EPS is programmed with that private IP address and the route on the EPS is programmed as: Gateway = the IP of the router and Destination = the IP of the firewall where SSA is. The site in System Sentinel AnyWare (SSA) and/or System Sentinel will be programmed with the public IP of the router and port 8001.

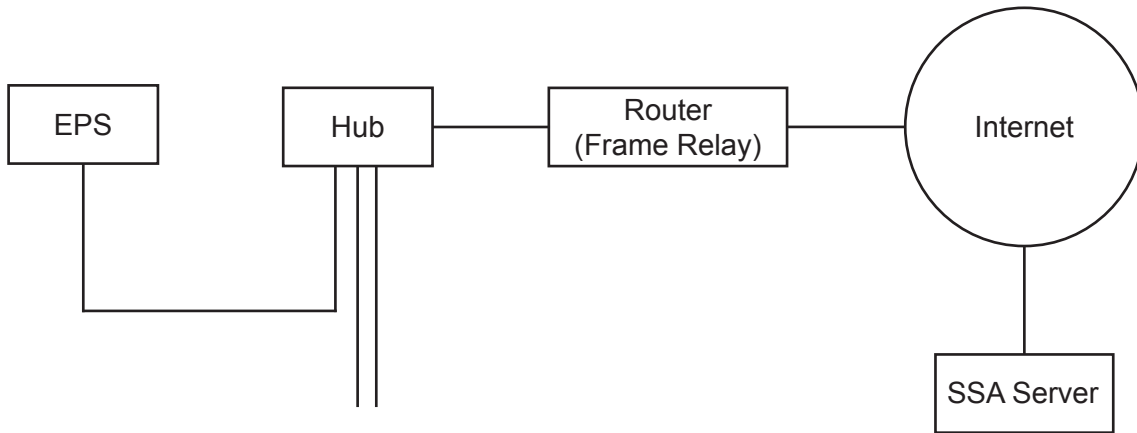


Figure 3 - Frame Relay Network

Cable/DSL Connections

When setting the EPS up on a cable/DSL connection, the ISP (Internet Service Provider) will provide a cable/DSL modem and a public, static IP. The EPS will then be programmed with the provided public IP address and connected to the Internet via the modem. There could also be a router added to this configuration for added security and to allow other devices to share the same public IP. If a router is installed, it will be programmed to have the public IP address and to route any traffic received on that public IP. The router will then send any data received on that public IP address for 8001 to a private IP address. The EPS is programmed with the private IP address and the route for the EPS will be: Gateway = private IP address and Destination = IP of the firewall where SSA resides. The Site in System Sentinel AnyWare (SSA) and/or System Sentinel will be programmed with the public IP of the router and port 8001.

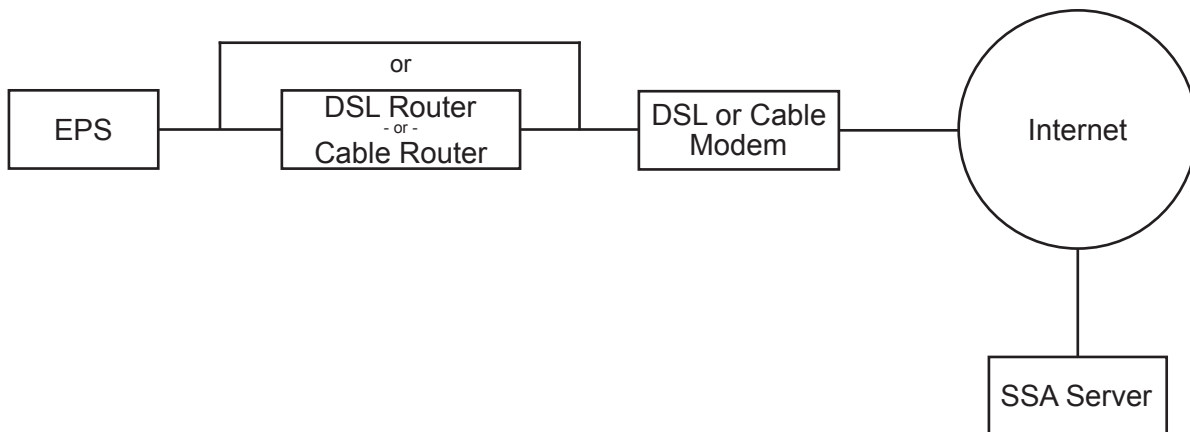


Figure 4 - Cable/DSL Connections

Programming

There are two ways to program the TS-EPS: use the Port Server Utility (provided) with Internet Explorer or use HyperTerminal. To program the EPS you will need to know the IP address, the subnet mask, and the gateway that's going to be assigned to the EPS. The following is a detailed description of each method.

Note: Sometimes it may be necessary to cold start and reprogram the EPS. See the instructions for reprogramming in the sections below. For instructions on cold starting the EPS, please refer to the Troubleshooting chapter.

Programming an EPS using the Port Server Utility and Internet Explorer

The Port Server Utility, found on the included CD, can be used to locate the EPS on your LAN and set its IP address. Once the IP address is set, you can browse to the EPS using Internet Explorer and program the other settings from there. Follow the steps below to program your EPS.

1. Connect the EPS to a port on your LAN.
2. On a PC connected to the same LAN as the EPS, insert the CD that came with the EPS into the PC's CD-ROM drive.
 - a). Click on the link for the Port Server Utility.
 - b). Click on the link for PSUtil_5.03.exe.
 - c). Save the PSUtil_5.03.exe file to your desktop, then double-click on the file to install (remove the CD at this time, but keep it for future use).
 - d). After installation is complete, go to **Start – All Programs** and select **Systech Port Server Utilities**.
3. Assigning or Changing the IP Address:

The Port Server Utility's main screen (see Figure 5) displays a list of all EPS devices available on your network. The first entry field shows the port server's IP address. If your LAN uses DHCP, a dynamic (temporary) address will be automatically assigned to the EPS. If your LAN does not use DHCP, this field will say **Click to Assign**. Either way, the proper IP address for this EPS will need to be programmed.

Note: To identify your TS-EPS in the Port Service Utilities screen, match the Ethernet address from the list shown to the address on your TS-EPS's label.

To assign an IP address to the port server, click on the line for that port server and click the IP address field. The field will become a text box, then enter the IP address to be assigned to the port server.

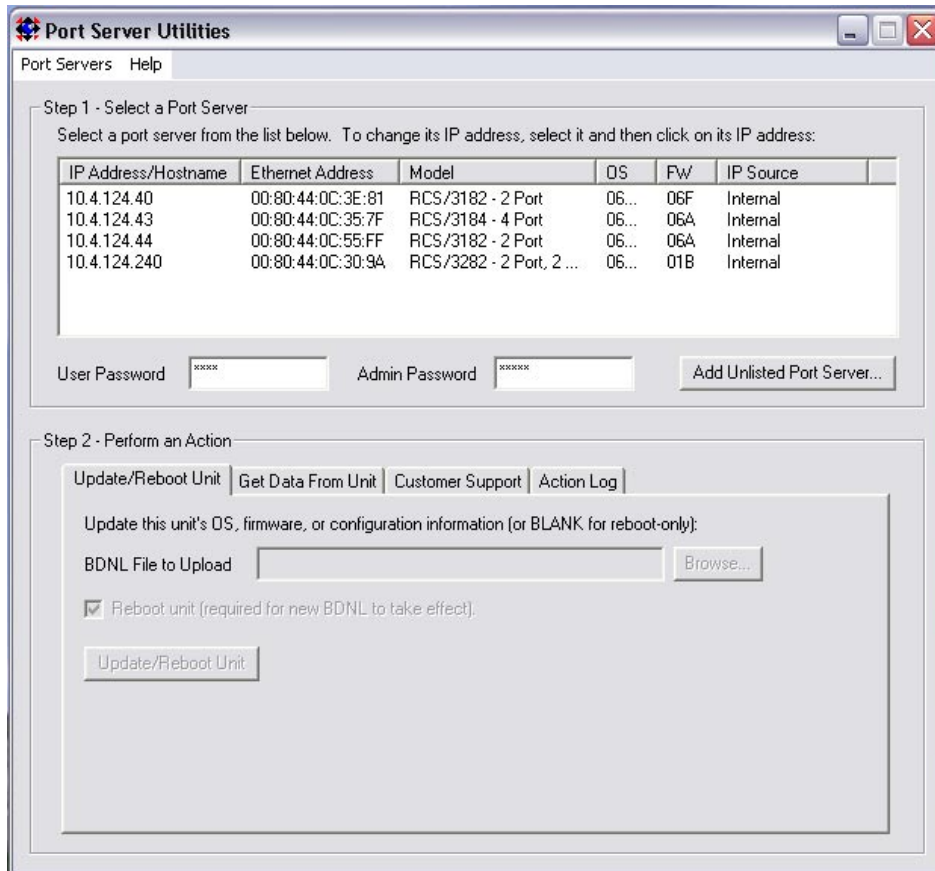


Figure 5 - Port Server Utility Screenshot

Internet Explorer (or Other Browser)

Once the EPS has been assigned an IP address, you can browse to it using Internet Explorer (or any other browser) from any PC that is connected to the same LAN as your EPS.

TS-EPS Configuration - Microsoft Internet Explorer provided by Franklin Electric

File Edit View Favorites Tools Help

Address <http://10.4.124.40/>

TS-EPS Configuration

 [Changes Saved]

General Settings
[Welcome](#)
[Banner/Passwords](#)
[Syslog](#)
[RADIUS](#)

Network Settings
[IP Address](#)
[DHCP](#)
[DNS](#)
[Routing/Gateways](#)
[PPP](#)
[Dial-On-Demand](#)
[SNMP](#)
[NAT](#)
[TCP Keep Alive](#)

Port Settings
[Port Parameters](#)
[Reverse Telnet](#)
[Custom Configs](#)
[Modem Definitions](#)
[Copy Port Config](#)

Utilities
[Port Status](#)
[SSA Config](#)

Welcome to the TS-EPS

You are using the browser-based configuration and diagnostics utility for the TS-EPS. To work with your port server, select the desired item from the menu on the left.

IMPORTANT: If you are configuring your port server, make sure that you save your changes when you are finished. The top right-hand corner of the page will always tell you if your configuration needs saving.

Port Server Information

Model	RCS/3182 (2 Ports)
Part Number	65-800370-9-00
Serial Number	329161
Firmware	06F (Aug 29 2002 09:19:01)
Onboard OS	RCS_3000_BDNL Version 06G (TS-EPS 1.0.2.1) (Jul 10 2002 09:14:27)
Configuration Database	00A
Ethernet Address	00:80:44:0c:3e:81
IP Address	10.4.124.40 (Source: Configuration Database)
IP Netmask	255.0.0.0 (Source: Configuration Database)

Figure 6 - TS-EPS Screenshot

1. Open Internet Explorer and type in the IP address that was assigned to the EPS (see Figure 6).
2. Click on the **IP Address** link and perform the following steps:
 - a). Verify that the **IP address** is correct.
 - b). Enter the **Subnet Mask**.
3. Click on the **Routing / Gateway** link.
 - a). Under Add New Entry, enter the **Destination** and **Gateway**. If there is no Destination, enter 0.0.0.0 for the Destination.
 - b). Set **Flags** to Net.
 - c). Set **Metric** to 1.
 - d). Click on **Add Entry**.
4. Click on Save Changes in the upper right hand corner.
5. If the EPS has been cold booted, complete the steps in the next section before moving on to Steps 6 through 8.
6. Close Internet Explorer.
7. Cycle power to the EPS.
8. If the FFS System Sentinel *AnyWare* software is going to be performing remote monitoring, continue to the next section entitled Starting the EPS.bdnl File (Optional). If no remote monitoring is going to be performed however, connect the EPS to the ATG – the EPS should now be correctly configured and ready for use.

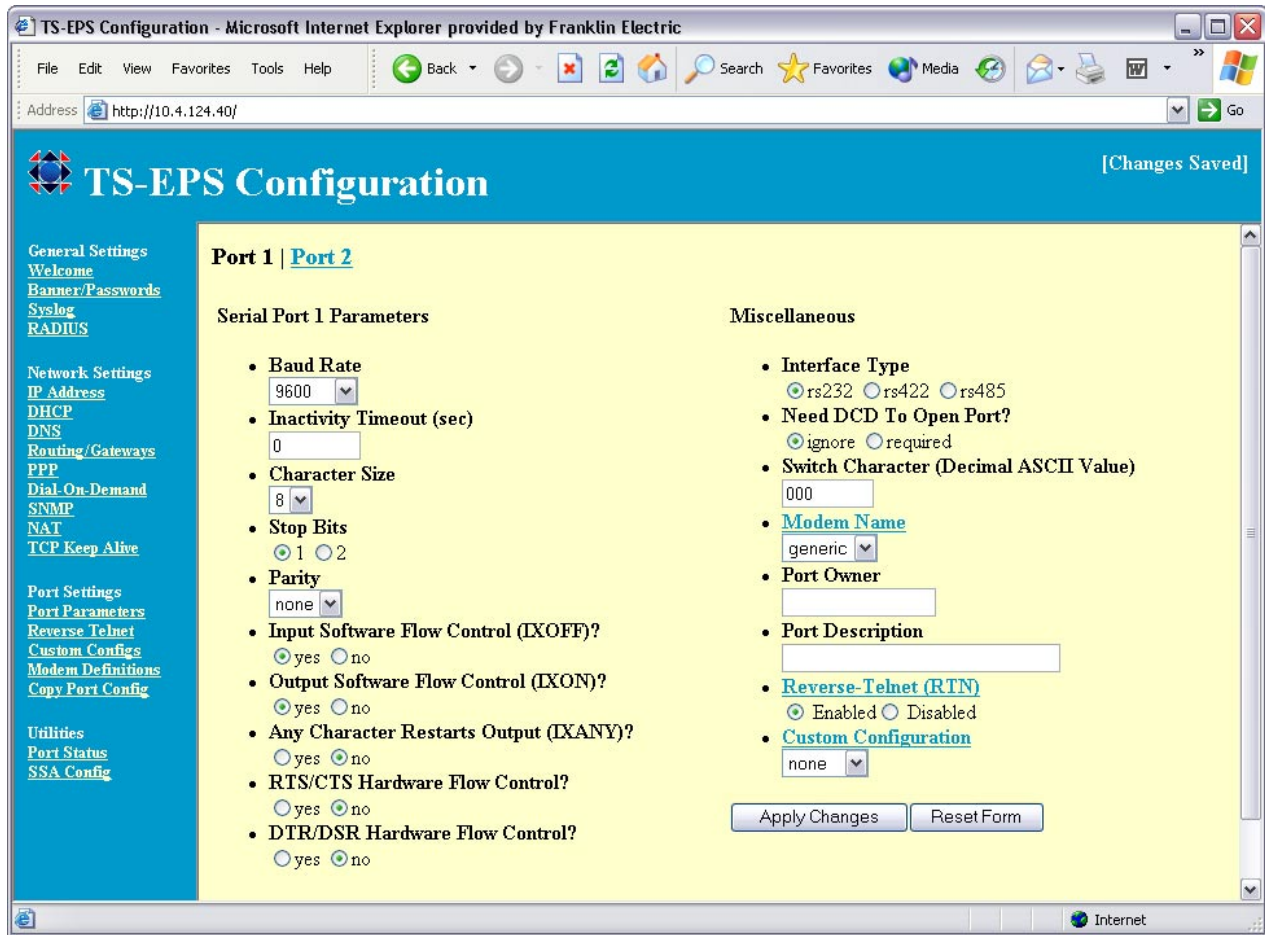


Figure 7 - TS-EPS Configuration Screenshot

Cold Boot Programming with Internet Explorer

While still connected to the EPS with Internet Explorer, complete the following steps:

1. Click on the **Port Parameters** link.
 - a). Adjust the following settings to match the screen in Figure 7:
 - Need DCD to Open Port – Ignore
 - Reverse Telnet – Enabled
 - Custom Configuration – None
 - b). For the TS-EPS-N only, set the communication settings to:
 - Baud – 2400
 - Character Size – 7
 - Parity – Odd
2. Return to the beginning of the Programming section and reprogram the EPS correctly now that its defaults have been reset.

Starting the EPS.bdl File (Optional)

If the FFS System Sentinel *AnyWare* software is going to be performing remote monitoring, then the following steps need to be performed. Do not perform these steps if you are using regular System Sentinel.

1. Open a MS-DOS command prompt and Telnet to the EPS from any PC on the same LAN.
Example: C:\Telnet x.x.x.x (where x.x.x.x = the EPS's IP Address)
2. Log into the EPS as the administrator.
 - a). Once you have connected to the EPS, the "Welcome" banner and password prompt will appear on your terminal. Type the commands shown in bold - what you type may not be displayed on the screen.
Welcome to the INCON TS-EPS
Password: **user**
>> **admin**
Password: **admin**
3. Once you have logged into the EPS, enter the following commands:
 - a). **Set tcp_service 6789 epsif**
 - b). **Set custom task 1**
 - c). Enter task number (1-10): **1**
 - d). Enter Command to execute: **atgif /i**
 - e). Values correct? **Y**
 - f). **Show C*** The reply for this command should be: Task 1: atgif /1
 - g). **Save**
4. Cycle power to the EPS, which can be done remotely by typing **export** <enter> then **reboot** <enter>.
5. Connect the EPS to the ATG – the EPS should now be correctly configured and ready for use.

Programming an EPS Using Hyper Terminal

Connect a PC with Hyper Terminal to Port 2 of the TS-EPS using a null modem cable. Set the communication parameters for Hyper Terminal to: 9600 bits per second, 8 data bits, 1 stop bit, and no parity. Type the commands shown in bold - what you type may not be displayed on the screen.

1. Once you have connected to the EPS, the "Welcome" banner and password prompt will appear on your terminal:
Welcome to the INCON TS-EPS
Password: **user**
>> **admin**
Password: **admin**
2. Set the following:
 - a). **Set IP (IP Address)**
 - b). **Set mask (Mask IP)**
 - c). **Add route (Destination IP) (Gateway IP) Net 1**

Note: A Destination IP may not be needed, and, if it's not, set it to 0.0.0.0.

3. If the EPS has been cold booted, then continue to the next section before moving on to Step 4.
4. Verify the following settings:
 - a). **Show IP**
Current IP address : xxx.xx.x.x
IP Address After Reboot : xxx.xx.xx.x

Note: The new address should be listed under Address After Reboot.

- b). **Show Mask**
Current IP Netmask : xxx.xxx.xxx.x
IP Netmask After Reboot : xxx.xxx.xxx.x

Note: The IP Netmask After Reboot will be the mask you set.

- c). **Show ro**

Initial Routes:

<u>Destination</u>	<u>Gateway</u>	<u>Flags</u>	<u>Metric</u>	<u>Gateway Type</u>
xx.xxx.xx.x	xx.xxx.xx.x	Net	1	address

d). **Show Port 1**

```
Port : port1
Baud Rate : 9600 or 2400 (2400 for the TS-EPS-N)
Inactivity Timeout : 0
Character Size : 8 or 7 (7 for the TS-EPS-N)
Stopbits : 1
Parity : none or odd (odd for the TS-EPS-N)
Switch Character : <undef>
Ignore dcd : yes
Input Processing : xoff
Output Processing : xon
Modem Name : generic
Port Owner :
Port Description :
Interface : RS232
Configuration : rtelnet
```

5. Cycle power to the EPS.
6. If the FFS System Sentinel *AnyWare* software is going to be performing remote monitoring, continue to the Starting the EPS.bndl File (Optional) section. If no remote monitoring is going to be performed however, connect the EPS to the ATG – the EPS should now be correctly configured and ready for use.

Cold Boot Programming with Hyper Terminal

1. Set the following after a cold boot:
 - d). **Set rtelnet 1**
 - e). **Delete default 1**
 - f). **Set ignoredcd 1 yes**
2. For the TS-EPS-N only – set the communication parameters with the following commands:
 - a). **Set Speed 1 2400**
 - b). **Set pa 1 odd**
 - c). **Set size 1 7**

Starting the EPS.bndl File (Optional)

Only perform the following steps if FFS's System Sentinel *AnyWare* software is going to be used to do remote monitoring. Do not perform these steps if you are using regular System Sentinel.

7. Open a MS-DOS command prompt and Telnet to the EPS from any PC on the same LAN, or connect via HyperTerminal.

Example: C:\Telnet x.x.x.x (where x.x.x.x = the EPS's IP Address)

8. Log into the EPS as the administrator.
 - a). Once you have connected to the EPS, the "Welcome" banner and password prompt will appear on your terminal. Type the commands shown in bold - what you type may not be displayed on the screen.

```
Welcome to the INCON TS-EPS
```

```
Password: user
```

```
>> admin
```

```
Password: admin
```

9. Once you have logged into the EPS, enter the following commands:
 - a). **Set tcp_service 6789 epsif**
 - b). **Set custom task 1**
 - c). Enter task number (1-10): **1**
 - d). Enter Command to execute: **atgif /i**
 - e). Values correct? **Y**
 - f). **Show C*** The reply for this command should be: Task 1: atgif /i
 - g). **Save**

10. Cycle power to the EPS, which can be done remotely by typing **export** <enter> then **reboot** <enter>.

11. Connect the EPS to the ATG – the EPS should now be correctly configured and ready for use.

Troubleshooting

If you begin to have problems with the TS-EPS that can't be easily solved by checking the connections to/from the unit, cycling power or verifying network settings, you can try cold booting the unit and reprogramming it. This section will walk you step by step through the cold boot procedure; for instructions on cold boot programming, please refer to the appropriate section in the Programming chapter. If the cold boot is unsuccessful in solving your problem, please contact FFS Technical Support.

Cold Booting an EPS

1. Locate the recessed reset button located next to the units status light (see Figure 2).
2. Using a paper clip or small screw driver, push and hold the cold boot button in. The status light should flash between red and yellow.
3. Continue to hold the reset button until the status light changes from flashing red and yellow to flashing green and yellow.
4. Cycle power to the EPS and reprogram as shown in the Programming chapter.

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