

JFW Industries, Inc.



50SA-276 MANUAL

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Additional Documents Provide with Manual:

1. Mechanical Outline Drawing
2. Specification Sheet

1. Introduction

1.1 Description

The JFW model 50SA-276 is switch assembly comprised of three 1P8T Reflective Electro-mechanical switches. When the unit is powered up, the switches are set port “all off”. The unit is controlled remotely via Ethernet or RS-232. The unit is manually controlled on the front panel using the keypad and LCD display. In Ethernet mode, up to 4 users can simultaneously connect to the test system.

In addition to this manual a CD is also provided. The CD contains the following:

- 1) Manual
- 2) Specification Sheet
- 3) Outline Drawing
- 4) JFW Test Program

1.2 Mechanical Specifications

The 50SA-276 is designed in a bench top style enclosure. The outline drawing details all necessary package dimensions and connector layouts. The unit is AC powered via a 3-prong receptacle on the rear panel. A standard power cord is supplied with the unit. The power supply itself is a universal AC power supply that can handle input AC voltages 100-240 VAC (47-63 Hz).

The 50SA-276 is AC current protected by use of a 2 Amp “Slo-Blo” AC fuse. The fuse is field replaceable in the event of any failure to the fuse. The fuse itself is a 5x20 mm “Slo-Blo” type fuse and is stocked by JFW (JFW #025-021, Littelfuse#215-002).

1.3 Front Panel Display

If the slide switch on the rear panel is set to Ethernet mode when the unit is powered on, then the LCD will display the text ***Ethernet Mode***. When a valid Ethernet connection to the unit has been made (using the correct IP address and port number), the text ***1 User Connected*** will be displayed. When the connection is closed, the text will be updated to read ***0 Users Connected***.

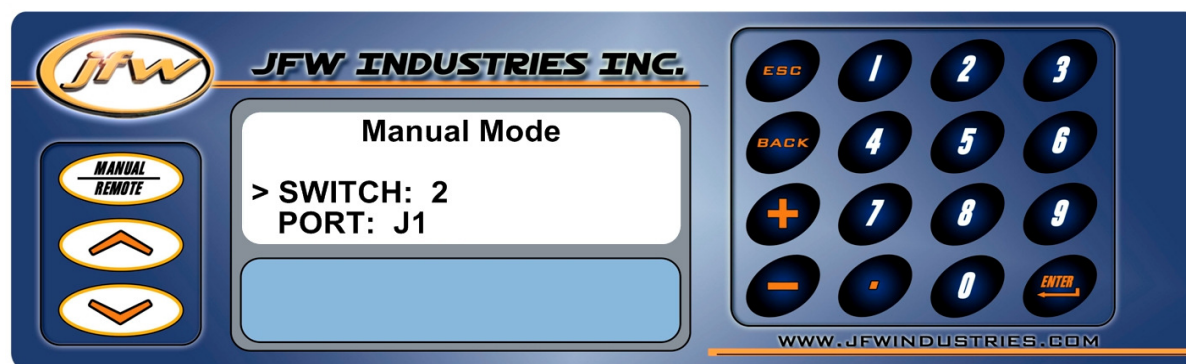
If the slide switch on the rear panel is set to RS-232 mode when the unit is powered on, then the LCD will display the text ***RS-232 Mode***. The current baud rate setting will also be displayed on the LCD. When the unit receives the Change Baud Rate remote command, the new baud will be immediately displayed.

2. Manual Mode

2.1 Switching Modes

If the unit is connected remotely to a user in Ethernet mode and you switch to manual mode using the *Manual/Remote* button, the unit will close that Ethernet connection before starting manual mode. While in manual mode, no remote Ethernet connections are allowed.

If the unit is in RS-232 mode and you switch to manual mode, the unit will stop executing RS-232 commands that it receives. When you switch back from manual mode to RS-232 mode, all RS-232 commands that were received while in manual mode are deleted from the receive buffer.



2.2 Using the Keypad

Manual control is based on the location of the “>” cursor on the left side of the LCD. The cursor indicates which line you are currently on. You may switch between the different lines with the Up and Down arrows located on the left side of the LCD. When the “>” cursor is on the *SWITCH* line, the switch address may be changed. When the “>” cursor is on the *Port* line, the port value may be changed.

Both the switch address and the port settings can be changed by using the number buttons (0-9) or the “+” and “-” buttons. Using the “+” and “-” keys while on the *SWITCH* line is a convenient way to quickly scroll through all of the current port settings.

The JFW logo on the keypad is also a button. If you press the logo button, the current revision level of the firmware will be display. The information will be displayed for 8-9 seconds, then return to the main menu automatically.

3. RS-232 Mode

3.1 Overview

This unit is RS-232 controlled via a standard 9-Pin D connector on the rear of the unit that is labeled “RS-232”. The test system must be in RS-232 mode for the RS-232 port to be active. The remote command format and examples can be found in the *JFW Command Set* section of this manual. The command formats are the same for both RS-232 and Ethernet control. If commands are sent incorrectly to the unit, you will receive error messages.

The baud rate can be set at 9600, 19200, or 38400. The current baud rate is displayed on the front panel by the LCD. To change to a different baud rate, the remote command *Change Baud Rate* must be sent. This remote command is fully described in the *JFW Command Set* section of this manual.

The slide switch on the rear panel allows the user to select between Ethernet and RS-232 modes. Set the slide switch to the desired mode and turn the unit off. When the unit is turned on, it will boot up in the selected mode.

3.2 RS-232 Cable

Included with the system should be one “Null Modem” cable (JFW part #012-174). This cable is used to interface with the RS-232 Port. This cable is DE-9P to DE-9S and is the “Null Modem” type. The female connector will plug into the serial port on most PC’s, and the male connector will connect to the “RS-232 Port” of the 50SA-276.

3.3 RS-232 Port Settings

When sending commands to the 50SA-276, your computer’s RS-232 port settings must be configured as follows. The baud rate must be set at 9600, 19200, or 38400. The parity must be set to “none”. The data length must be set to “8” data bits. The stop bit must be set to “1”. If your RS-232 port is not configured with these settings, the 50SA-276 will not receive and execute the commands sent. It will not send back an error either, because communication was never established.

BAUD RATE	9600 (or 19200, 38400)
PARITY	none
DATA LENGTH	8 bits
STOP BITS	1
FLOW CONTROL	none

4. Ethernet Mode

4.1 Overview

The 50SA-276 is Ethernet controlled via a standard RJ-45 Ethernet connector on the rear of the unit. The Ethernet port is a 10/100Base-T port that follows TCP/IP protocol. The remote command format and examples can be found in the *JFW Command Set* section of this manual. The command formats are the same for either Ethernet or RS-232 control. If commands are sent incorrectly to the unit, you will receive an error message.

The slide switch on the rear panel allows the user to select between Ethernet and RS-232 modes. Set the slide switch to the desired mode and turn the unit off. When the unit is turned on, it will boot up in the selected mode.

4.2 Multiple Ethernet Connections

The firmware for 50SA-276 allows for multiple Ethernet connections. There can be up to 4 users connected to the test system simultaneously. All users will connect to the test system using the same IP address and port number. When you send the identification command (IDN), it will send back an ASCII message that includes the number of current Ethernet connections to the test system.

All commands sent to the test system are stored in a receive buffer. Each command is executed sequentially until there are no more remote commands in the receive buffer. It takes about 1 millisecond for the firmware to process a *Set Switch* or *Read Switch* remote command.

5. Ethernet Configuration

This 50SA-276 comes configured with the following Ethernet settings.

I.P. Address **192.168.1.225**
Gateway **192.168.1.1**
Netmask **255.255.255.0**
Port **3001** (hard-coded into the unit and can not be changed)

There are two methods for changing the IP settings of the unit.

- 1) Use the JFW Test program to configure the settings using either a Serial Connection or Ethernet connection. For further information on this method see the Test program section #8.**
- 2) Use a terminal program like HyperTerminal to configure the unit. This method is outlined below and in the next section.**

In order to configure the IP settings, the test system must be in Ethernet mode. Use the Null Modem cable (JFW part #012-174) supplied with the test system to make the physical connection from your COM port to the “Ethernet Config. Port” on the rear panel. Open up a terminal session through your computer’s COM port using a program like HyperTerminal. The terminal session should use the following COM port settings:

Baud Rate: 9600
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control: None

The four commands listed below are used to change the IP properties. When the commands have been executed, the test system will send back an ASCII message. See the example session in the next section.

SET IP xxx.xxx.xxx.xxx	Changes the I.P address
SET NETMASK xxx.xxx.xxx.xxx	Changes the Netmask
SET GATEWAY xxx.xxx.xxx.xxx	Changes the Gateway

After you have changed the IP settings, you can verify the changes using the *Show* and *Show Eth0* commands. After these commands are sent, the test system will echo back an ASCII message that shows all of the updated settings. See the example in the next section.

SHOW	Displays the Gateway setting
SHOW ETH0	Displays IP address and Netmask settings

6. Ethernet Configuration Session

This is a sample Ethernet configuration session that show step by step how to configure the Ethernet settings. It shows the commands that are sent and the response of the test system.

The current settings are: IP address **192.168.1.222**
Gateway **192.168.1.2**
Netmask **255.255.255.2**
Port **3001** (hard-coded in system and can't be changed)

The new settings will be: IP address **192.168.1.250**
Gateway **192.168.1.1**
Netmask **255.255.255.0**
Port **3001** (hard-coded in system and can't be changed)

Step 1: Position the slide switch on the back panel to Ethernet mode.

Step 2: Turn on the power to the test system. The test system is now in Ethernet mode.

Step 3: Connect the Null modem cable from you computer's serial port to the port on the test system labeled "Ethernet Config. Port".

Step 4: Open a terminal program (such as Hyperterminal for Windows) and configure the serial settings to 9600 Baud, 8 data bits, no parity, 1 stop bit, no flow control.

Step 5: You are now ready to send commands to configure the Ethernet port. Text that you type is shown below in bold. The <enter> is the enter key on your keyboard.

help <enter>

TCP/IP User Block Console Version 1.1

Available commands: (type "help <command>" for more info)

echo - Turn on or off echoing of characters.
set - Configure various options.
add nameserver - Add a nameserver to the current l
mail - Send an e-mail.
show - Show current configuration.
help - This help screen.
OK

show <enter>

Current Configuration:

I/O Parameter: 9600
Gateway: 192.168.1.2
Name Servers:
Mail Server:
Mail From: user@somewhere.com
Interfaces: ETH0

OK

show eth0 <enter>

Current ETH0 Configuration:

```
Status:          up
IP Address:      192.168.1.222
Netmask:         255.255.255.2
MTU:             600
Ping Config:     off
Ping Config Done: no
```

OK

set ip 192.168.1.250 <enter>

IP address set to: 192.168.1.250

OK

set netmask 255.255.255.0 <enter>

Netmask set to: 255.255.255.0

OK

show eth0 <enter>

Current ETH0 Configuration:

```
Status:          up
IP Address:      192.168.1.250
Netmask:         255.255.255.0
MTU:             600
Ping Config:     off
Ping Config Done: no
```

OK

set gateway 192.168.1.1 <enter>

Gateway set to: 192.168.1.1

OK

show <enter>

Current Configuration:

```
I/O Parameter:  9600
Gateway:         192.168.1.1
Name Servers:
Mail Server:
Mail From:       user@somewhere.com
Interfaces:      ETH0
```

OK

3. Remote Command Set

The following command set is used for both Ethernet mode and RS-232 mode. The command set consists of the following commands:

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2) Change Baud Rate.....	11
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5) Set Switch with Response.....	12
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If you send a remote commands to the unit that is not properly formatted, then you will receive one of the following error messages.

Error1 Command is formatted incorrectly.

This error occurs if a command does not follow it's proper command syntax.

Error2 Switch address out of range.

This error occurs if the switch address is not 1-4.
There are 4 total switches in this test system.

Error3 Port value out of range.

This error occurs when the port value is not 1-2dB.
The switches in this test system are all 1P2T switches.

Error4 Interval time out of range.

This error occurs when the interval time of the pause command is not 1-9999.

Error5 Interval time not properly formatted.

This error occurs when a "M" or "S" does not follow the interval time for the pause command. The "M" formats the interval time to milliseconds. The "S" formats the interval time to seconds.

1 Identification Command

Syntax: IDN <CR>

<CR> = carriage return

Description: This command returns the identification information for this system and is followed by a carriage return and a line feed. It will list JFW Industries Inc, followed by the JFW model number and the firmware revision level.

Examples: *In RS-232 mode:*

IDN <CR>

“JFW Industries Inc., Model 75SA-050, Firmware Rev 0 <CR> <LF>”

In Ethernet mode:

IDN <CR>

“JFW Industries Inc., Model 75SA-050, Firmware Rev 0 <CR> <LF>”

“Current Ethernet Connections = 4 <CR> <LF>”

*

Notes: *The IDN command will also return a Message in Ethernet mode if a Message has been stored using the Message command.

To erase the message, any user can send the Clear command from Ethernet mode.

Command is not case sensitive, but must be terminated by a carriage return.

2) Change Baud Rate Command – RS-232 Only

Syntax: CBx <CR>

x = new baud rate

<CR> = carriage return

Description: This command changes the baud rate of the unit. The current baud rate is displayed on the LCD while in remote mode.

Examples: CB9600 <CR> Changes the baud rate to 9600 baud
CB19200 <CR> Changes the baud rate to 19200 baud
CB38400 <CR> Changes the baud rate to 38400 baud

Notes: “x” must be either 9600, 19200, or 38400.

Command is not case sensitive, but must be terminated by a carriage return

3) Disconnect Command

Syntax: DIS <CR>

<CR> = carriage return

Description: This command causes the test system to close the existing Ethernet connection. This command is only used while in Ethernet mode.

Examples: DIS <CR>

Returns: “ Connection Closing<CR><LF>” and closes the Ethernet connection.

Notes: There must NOT be a space between the “D”, “I”, and “S”.

Command is not case sensitive, but must be terminated by a carriage return.

4) Set Switch Command

Syntax: `SSx y <CR>`

x = switch number to control
y = port value to set the switch to
<CR> = carriage return

Description: This command sets switch “x” to port “y”.

Examples: `SS1 1 <CR>` Sets switch 1 to Port 1.
`SS4 2 <CR>` Sets switch 4 to Port 2.

Notes: “x” must be 1-4 (there are 4 total switches in this test system).
“y” must be 1-2 (port range is 1-2).
There must be a space between “x” and “y”.
Command is not case sensitive, but must be terminated by a carriage return.

5) Set Switch with Response Command

Syntax: `SSRx y <CR>`

x = switch number to control
y = port value to set the switch to
<CR> = carriage return

Description: This command sets switch “x” to port “y”.

Examples: `SSR1 1 <CR>` Sets switch 1 to Port 1. Returns: “Switch#1 = Port 1<CR><LF>”
`SSR4 2 <CR>` Sets switch 4 to Port 2. Returns: “Switch#4 = Port 2<CR><LF>”

Notes: “x” must be 1-4 (there are 4 total switches in this test system).
“y” must be 1-2 (port range is 1-2).
There must be a space between “x” and “y”.
Command is not case sensitive, but must be terminated by a carriage return.

6) Read Switch Command

Syntax: `RSx <CR>`

x = switch number to query
<CR> = carriage return
<LF> = line feed

Description: This command returns the port setting for switch “x”.

Examples: `SS1 2 <CR>` Sets switch 1 to Port 2.
`RS1 <CR>` Returns: “Switch#1 = Port 2<CR><LF>”.

Notes: “x” must be 1-4 (there are 4 total switches in this test system).
Command is not case sensitive, but must be terminated by a carriage return.

7) Set All Switch Command

Syntax: SAS x <CR>

x = port value to set the switches to
<CR> = carriage return

Description: This command sets all switches to Port “x”.

Examples: SAS 1 <CR> Sets all switches to Port 1.
Returns: “Switches 1-4 = Port 1<CR><LF>”
SAS 2 <CR> Sets all switches to Port 2.
Returns: “Switches 1-4 = Port 2<CR><LF>”

Notes: “x” must be 1-2 (port range is 1-2).
Command is not case sensitive, but must be terminated by a carriage return.

8) Set Multiple Switch Command

Syntax: SMS x1 y1,x2 y2<CR>

x = switch number
y = port value to set the switch to
<CR> = carriage return
<LF> = line feed

Description: This command can set multiple switches to multiple port values in one command.
It sets switch “x1” to Port “y1”, switch “x2” to Port “y2”, etc.
Sends back “n Switches Set” where “n” is the number of switches that were set.

Examples: SMS 1 1,2 2<CR> Sets switch 1 to Port 1 and switch 2 to Port 2.
Returns: “2 switches Set<CR><LF>”

Notes: “x” must be 1-4 (there are 4 total switches in this test system).
“y” must be 1-2 (port range is 1-2).
There must be a space between “SMS” and “x1”.
There must be a space between all “x”s and “y”s.
You only have to set the switches you want to change.
Ex. “SMA 1 1, 4 2<CR>” sets switch 1 to Port 1 and switch 4 to Port 2.
Command is not case sensitive, but must be terminated by a carriage return.

9) Read All Switch Command

Syntax: RAS<CR>

<CR> = carriage return

Description: This command returns the values of all of the switches, each switch on one line.

Examples: SMS 1 1,2 2,3 1,4 2 <CR> Sets switch 1 to Port 1, switch 2 to Port 2, switch 3 to Port 1, and switch 4 to Port 2.

RAS<CR>

Returns:

“Checksum = DC45”

“Switch 1 1”

“Switch 2 2”

“Switch 3 1”

“Switch 4 2”

Notes: This command is helpful if you are parsing the returned values in your own program. The checksum is calculated by doing a CRC (Cyclic Redundancy Check) of the current ports, it is used to quickly compare the port settings of the entire system to a known and expected value.

Command is not case sensitive, but must be terminated by a carriage return.

10) Close Command – Ethernet Only

Syntax: **CLOSE<CR>**

<CR> = carriage return

Description: This command causes the test system to close all other user's Ethernet connections to the test system, but leaves your Ethernet connection open. This command is only used while in Ethernet mode.

1. Example: Four users are connected to the test system. Send an IDN to verify.

IDN<CR>

“JFW Industries Inc., Model 75SA-050, Firmware Rev 0<CR><LF>”

“Current Ethernet Connections = 4<CR><LF>”

CLOSE<CR>

“75SA-050 – 3 Connections Closing<CR><LF>”

Sending the close command will disconnect the other 3 users and leave you as the only Ethernet connection. Send an IDN to verify.

IDN<CR>

“JFW Industries Inc., Model , Firmware Rev 0<CR><LF>”

“Current Ethernet Connections = 1<CR><LF>”

The one connection that is left open is your connection.

Notes: This command is used mainly if you are running an important test and need sole access to the switches by closing any other Ethernet connections to the 75SA-050.

This command is also helpful to use if you have an intermittent Ethernet connection to your network, possibly through wireless or connecting via VPN. If you lost your connection, you would then have to reconnect to the 75SA-050 and it would open a new socket. Sending the Close command would then close the original socket and correct the current number of connections.

Command is not case sensitive, but must be terminated by a carriage return.

11) Pause Command

Milliseconds Interval Syntax: **PAUSExM<CR>**

Seconds Interval Syntax: **PAUSExS<CR>**

x = duration of time to pause

M = interval time format set to milliseconds

S = interval time format set to seconds

<CR> = carriage return

Description: This command pauses the test system for “x” duration of time. The time duration can be set from 1-9999. The time duration can be formatted to be in milliseconds or in seconds depending on if there is a “M” for milliseconds or “S” for seconds. The pause command is useful when sending scripts to the test system and you want a timed pause between other remote commands.

Examples: **PAUSE100M<CR>** Returns: “Pause Starting<CR><LF>”
Test system pauses for 100 milliseconds.
Returns: “Pause Finished<CR><LF>”

PAUSE15S<CR> Returns: “Pause Starting<CR><LF>”
Test system pauses for 15 seconds.
Returns: “Pause Finished<CR><LF>”

Notes: Command is not case sensitive, but must be terminated by a carriage return.

Feedback: At the beginning and ending of each PAUSE command, the test system will send all connected users a message to provide feedback of the test system status. At the beginning, the message “Pause Started” is sent. When the command has finished executing, the message “Pause Finished” is sent.

12) Message Command – Ethernet Only

Syntax: MESSAGE x<CR>

<CR> = carriage return

Description: This command will allow you to send a custom message to any new user that connects to the 75SA-050.

Examples: MESSAGE I will be using switches 1 and 2 on the 75SA-050 today (9/2) -CLK<CR>
Returns: "Message Stored<CR><LF>"
Then if a new user connects to the 75SA-050, they would see:
"Connection Open 75SA-050<CR><LF>"
"I WILL BE USING SWITCHES 1 AND 2 ON THE 75SA-050 TODAY (9/2) -CLK<CR><LF>"

-or if an IDN command is sent-

IDN<CR> Returns:
"JFW Industries Inc., Model 75SA-050, Firmware Rev 0 <CR> <LF>"
"Current Ethernet Connections = 2 <CR> <LF>"
"I WILL BE USING SWITCHES 1 AND 2 ON THE 75SA-050 TODAY (9/2) -CLK<CR><LF>"

Notes: "x" can be any ASCII string up to 100 characters long.
There must be a space between MESSAGE and "x".
This command is helpful for letting colleagues know you are using the test system for an important test and the port settings must not be disturbed.
The Message can be cleared by sending the Clear command from any user connected in Ethernet mode.
Command is not case sensitive, but must be terminated by a carriage return.

13) Clear Command – Ethernet Only

Syntax: CLEAR<CR>

<CR> = carriage return

Description: This command clears the custom Message stored by the Message command.

Examples: MESSAGE I will be using switches 1 and 2 on the 75SA-050 today (9/2) -CLK<CR>
IDN<CR> Returns:
"JFW Industries Inc., Model 75SA-050, Firmware Rev 0 <CR> <LF>"
"Current Ethernet Connections = 2 <CR> <LF>"
"I WILL BE USING SWITCHES 1 AND 2 ON THE 75SA-050 TODAY (9/2) -CLK<CR><LF>"

CLEAR<CR> Returns: "Message Cleared<CR><LF>"
IDN<CR> Returns:
"JFW Industries Inc., Model 75SA-050, Firmware Rev 0 <CR> <LF>"
"Current Ethernet Connections = 2 <CR> <LF>"

Notes: Command is not case sensitive, but must be terminated by a carriage return.

14) Store Command

Syntax: STORE<CR>

<CR> = carriage return

Description: This command will write the current switch settings to the onboard flash memory to be recalled at a later time, even after power cycling the 75SA-050.

Examples: SMS 1 1,2 2,3 1,4 2 <CR> Sets switch 1 to Port 1, switch 2 to Port 2, switch 3 to Port 1, and switch 4 to Port 2.

RAS<CR>

Returns:

“Checksum = DC45”

“Switch 1 1”

“Switch 2 2”

“Switch 3 1”

“Switch 4 2”

STORE<CR>

Returns: “4 Switch Settings Stored In Memory<CR><LF>”

: Please allow approximately 1 second to write the data to memory.
Command is not case sensitive, but must be terminated by a carriage return.

15) Recall Command

Syntax: RECALL<CR>

<CR> = carriage return

Description: This command reads the data stored on the onboard flash memory from the last Store command, and resets all of the switches to those settings.

Example: (Continuing From the STORE Command Example Above)

SAS 1<CR>

Returns: “Switches 1-4 = Port 1<CR><LF>”

RAS<CR>

Returns: “Checksum = DC45”

“Switch 1 1”

“Switch 2 2”

“Switch 3 1”

“Switch 4 2”

RECALL<CR>

Returns: “4 Switch Settings Loaded From Memory<CR><LF>”

RAS<CR>

Returns: “Checksum = DC45”

“Switch 1 1”

“Switch 2 2”

“Switch 3 1”

“Switch 4 2”

Notes: Command is not case sensitive, but must be terminated by a carriage return.

8. JFW Test Program

No installation program needs to be run in order to use the JFW test program. Just copy the executable file and directory located on the CD that is provided with this manual onto any location on your computer.

While using the program, you will see the commands you send displayed in the “Data Sent” window and any response from the test system in the “Data Received” window.

Typed Command

Allows you to send any ASCII message you want to the test system. Just type your message in the text box and click on the Send Message button. Your Message is displayed in the “Data Sent” window.

JFW Industries, Inc.

50SA-271 Test Program (Rev 0)

RS-232 Setup

Close RS-232 Port

Com Port: COM7

Baud Rate:

Ethernet Setup

Connect Ethernet

I.P. Address: 192.168.1.225

Port Number: 3001

Ethernet Configuration

Remote Commands

Set Switch Switch #: 1

Port #: 1

Read Switch Switch #: 1

Change Baud Rate

Typed Commands

Send Message Clear Message

Data Sent Clear Text

RS100

Data Received Clear Text

Ethernet Configuration with JFW Test Software

Used to configure the unit for the first time through the Serial Port.

Used to change the IP address when unit is already on your network through the current Ethernet connection.

The screenshot shows the 'Ethernet Configuration' window. It is divided into two main panels: 'Serial Network Configuration' and 'Ethernet Network Configuration'. The Serial panel includes a dropdown for 'Com Port' (set to COM7) and a 'Baud' rate of 9600. The Ethernet panel shows the 'Current I.P. Address' as 192.168.1.225 and 'Port Number' as 23. Below these are fields for 'New IP Address' (192.168.1.226), 'New Gateway Address' (192.168.0.1), and 'New Netmask Address' (255.255.0.0), each with a 'Set' button. At the bottom of the configuration section are 'Show' and 'Show ETH0' buttons. The bottom of the window features 'Data Sent' and 'Data Received' text areas, each with a 'Clear Text' button.

New IP Address To be set.

Read the systems current settings.

Ethernet Configuration can be done using the provided JFW Test Software. When the unit is tested here at JFW we set it up on a standard 192.168.1.1 network so depending on your own network settings, you may not immediately be able to connect to the test system.

If this is the case you will first need to change the network settings of the unit serially via the serial “Ethernet Config” port on the rear panel of the unit.

- 1) Open the Ethernet Configuration window of the test program, located below the Ethernet Connection section.
- 3) From here, select the COM Port you have connected to the “Ethernet Config” RS-232 connector on the rear panel in the drop-down box under Network Configuration, and click “Connect to Serial Ethernet Config Port” button.

The three Set buttons should activate, allowing you to now reprogram the IP Address, Gateway, and Netmask below. The Show and ShowETH0 buttons allow you to read the current settings of the unit.

- 4) Once the Gateway and Netmask have been programmed to your network, you should be able to connect to the unit at the IP you selected. At this point you may change the IP address via Ethernet by connecting to it on port 23 under the Change Current IP Address section. Only the IP address can be changed via Ethernet however.

9. FAQ's

If you are reading this page because you are having problems with a JFW test system, please contact JFW at **317-887-1340** or **sales@jfwindustries.com**. One of our engineers would be more than happy to help you troubleshoot the unit and get you back on track.

Why is the unit not responding to my Ethernet port configuration commands?

The Ethernet is configured using the "Ethernet Config. Port" on the back panel. It is a RS-232 port. You must use a Null Modem type RS-232 cable. You must use the following RS-232 port settings with this port: baud rate (9600), data bits (8), parity (none), stop bits (1), flow control (none).

How do I find out the revision level of my firmware?

Right after the unit is powered on, the firmware revision level is displayed on the LCD. The firmware revision level is also included with the information sent back from an "identification" remote command. In manual mode, you can press the JFW logo on the keypad. The JFW logo is a button that will display the firmware revision level.

I just switched from Ethernet mode to RS-232 mode using the switch on the back panel, but I am still in Ethernet mode. Why did the mode not change?

You must turn the unit off and then back on for the change to take affect.

Why won't the unit respond to my Ethernet commands?

Verify the following settings: IP address, Gateway, Netmask, and Port Number. Remember that the Port Number is hard-coded to 3001 and can not be changed. Check your command format in the "Remote Command Set" section of this manual.

Why won't the unit respond to my RS-232 commands?

Verify the following RS-232 settings: baud rate, parity (none), data bits (8), and stop bits (1). The current baud rate is displayed on the front panel by the LCD. Check you command format in the "Remote Command Set" section of this manual.

Why don't I get a response from the unit when I send the remote command "RS1"?

All remote commands must be terminated with carriage returns. Attach a carriage return to your command string right after the "1".

10. Startup Information

Below is some basic information that you will need to know in order to operate your JFW test system. Refer to the test system manual for more detailed information. If you have any problems getting the test system up and running, please contact JFW (317-887-1340, sales@jfwindustries.com) and one of our engineers will assist you.

Changing from RS-232 mode to Ethernet mode

1. Turn off power to the test system.
2. Change the position of the slide switch (on back panel) from RS-232 mode to Ethernet mode.
3. Turn on power to the test system. The display on the front panel will display "Ethernet Mode".

Ethernet Config. Port

1. The "Ethernet Config. Port" is only used while the test system is in Ethernet mode.
2. This port will only process the Ethernet configuration commands (i.e. set ip, set gateway, set netmask).
3. This port will NOT process the JFW command set (i.e. set switch, read switch, identification).
4. For a step by step guide to configuring the Ethernet port, refer to the document "Sample Ethernet Configuration Session". Also, the test system manual has a section that covers Ethernet configuration.

Ethernet Port

1. The "Ethernet Port" is only used while the test system is in Ethernet mode.
2. This port will only process the JFW command set (i.e. set switch, read switch, identification).
3. This port will NOT process the Ethernet configuration commands (i.e. set ip, set gateway, set netmask).
4. The test system manual has a complete list of the JFW command set.

RS-232 Port

1. The "RS-232" is only used while the test system is in RS-232 mode.
2. This port will only process the JFW command set (i.e. set switch, read switch, identification).
3. This port will NOT process the Ethernet configuration commands (i.e. set ip, set gateway, set netmask).
4. The test system manual has a complete list of the JFW command set.

11. Test Scripts

Listed below are answers to frequently asked questions about using test scripts with JFW test systems.

What is a test script?

A test script is a text file (.txt) that lists multiple remote commands in a specific order in order to perform a specific RF test. Terminal programs such as Hyperterminal for Windows can be used to send the text file to a test system via Ethernet or RS-232.

Why would I want to use test scripts?

You have a test that will be run repeatedly and it uses the same remote commands each time. Using a test script saves you from having to type in the same set of remote commands over and over.

How does the JFW test system execute a test script?

All remote commands listed in a test script are executed sequentially. When you send the script the terminal program lists all of the remote commands sent in the terminal window. The JFW test system stores all of the commands in a receive buffer. It reads the first command and executes the command. Only when the first command is fully executed does the test system read in the second command from the receiver buffer. Each command is read in and executed sequentially until all of the commands in the receive buffer are executed.

How many remote commands can be in one test script?

JFW has used test scripts on Ethernet test systems and RS-232 test systems that contain as many as 1000 remote commands in a single test script.

What happens if I send a second test script before the first test script is finished?

The commands contained in the second test script will be processed after all of the commands in the first script have been executed.

How do I terminate each remote command in my text file with a carriage return?

When you use the “enter” key to go to the next line it will include a carriage return and line feed in the text file. This means that each line of the text file should contain only one remote command.

Why does the last remote command in my script does not execute?

The last command is not properly terminated with a carriage return. You must press the “enter” key at the end of the last remote command to add a carriage return in the text file.

11. Test Scripts Cont'd

How is the PAUSE command used in a script?

The PAUSE command can be used between Set Switch commands for automated testing purposes. You could set Switch #1 to Port #1, then pause 10 seconds and then set Switch #1 to Port #2.

The Script would read.

```
SS1 1<CR>  
PAUSE 15S<CR>  
SS1 2<CR>
```

This script would be saved in .txt file and uploaded to the unit via a terminal program like HyperTerminal.