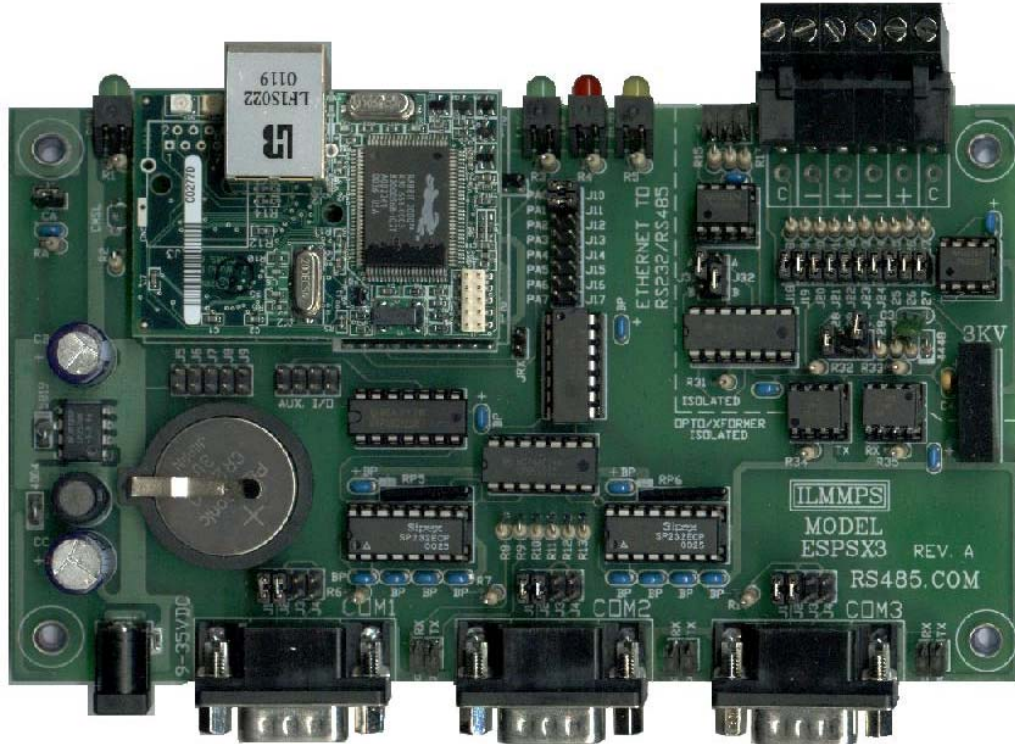


PRELIMINARY INFORMATION, 03-23-2002

ESPSX3 Ethernet Serial Port Server X 3

The ESPSX3 is an Ethernet Serial Port Sever with two RS232 and one RS232/RS485/RS422 ports. The R485/RS422 port has galvanic isolation for industrial/robust applications. These ports can be accessed via the local network or over the World Wide Web. ESPSX3 configuration can be accomplished via the web browser, windows configuration software, or with DHCP/BOOTP protocol. The ESPSX3 can also be configured to act in a stand-alone mode automatically connecting a serial port on one board to a serial port on another board via the LAN/WAN connection.



ESPSX3 - Ethernet Serial Port Server X 3

Jumper Configuration Tables
(Software version 2.0D and newer)

Table 2: RS-232 Device Type

RS-232 MODE	J1	J2	J3	J4
* COMPUTER	INSTALLED	INSTALLED	REMOVED	REMOVED
MODEM	REMOVED	REMOVED	INSTALLED	INSTALLED

Table 3: Reset Defaults Optional Configuration Settings

J10	FUNCTION		
I	Normal operation		
R	On power on 1 of 3-factory default settings are restored, must be installed for normal operation.		
	J16	J17	IP Address Default Configuration on Reset
	R	R	DHCP/BOOTP Enabled
	I	R	Static IP Address 128.0.0.75 (mfg. Test)
R	I	Static IP Address 192.168.1.1	

Table 4: Monitor Mode Enable

J11	FUNCTION
I	Normal operation of COM3
R	Enable Monitor Configuration Via COM3 at 9600,N,8,1

Note: Jumpers reserved for future operation include J5-J9, and J12-J15

Factory Default Software Settings

Table 1: Factory Default Settings

PORT	BAUD	TCP/IP	PORT
COM1	9600,N,8,1*	BOOTP/DHCP ENABLED	9101
COM2	9600,N,8,1	DEFAULT IP: 192.168.1.1	9102
COM3	9600,N,8,1	NETMASK: 255.255.255.0	9103

* Communications N,8,1 = no parity, eight bits, one stop bit

Windows 98/ME/NT/2000/XP Configuration Utility

R.E. SMITH TCP/IP CONFIGURATION UTILITY (VERSION 1.4)

IP Search

R.E. SMITH
4311 Tylersville Road
Hamilton, Ohio 45011
Phone (513) 874-4796 www.rs485.com

CONFIGURATION | TERMINAL | TESTER

SEARCH SERIAL SERVERS

MAC ADDRESS	IP ADDRESS	LOCATION/NAME	SOFTWARE VERSION
00:90:c2:c0:39:48	128.0.0.76	R.E.SMITH - ESPSX3 BOARD	V2.4A (03-23-02)
00:90:c2:c0:27:ab	128.0.0.75	R.E.SMITH - ESPSX3 BOARD	V2.3D (03-03-02)

Search Network 128 0 255 255 Searching ... 25

NOTE! YOU MAY NEED TO CHANGE THE SEARCH NETWORK ABOVE.

WINDOWS 98/ME/NT/2000/XP CONFIGURATION UTILITY

Double click on device in list to open the configuration dialog seen below.

CHANGE CONFIGURATION

SERIAL PORT CONFIGURATION

	PORT ADDRESS	BAUD	COMM SPEC
PORT 1	9101	9600	8-N-1
PORT 2	9102	9600	8-N-1
PORT 3	9103	9600	8-N-1

DEFAULT IP PARAMETERS

IP ADDRESS: 128.0.0.103

NETMASK: 255.255.255.0

GATEWAY: 0.0.0.0

CONFIG PROTOCOL

DHCP

BOOTP

STATIC

RARP

UNIT ID: R.E.SMITH - ESPSX3 BOARD

MAC ADDRESS: 00:90:c2:c0:39:48

SAVE Cancel

CONFIGURATION DIALOG

The TCP/IP Configuration Utility can be used to search a given network for serial server devices. In the above screen capture the network 128.0.0.xxx is searched this includes TCP/IP addresses 128.0.0.1 – 128.0.0.254. In this case the DHCP (Dynamic Host Configuration Protocol) server assigned addresses of 128.0.0.75 and 128.0.0.76 to the serial port servers. The user can configure a device with this software after selecting from the list of serial port servers found, then changing the appropriate parameters and then pressing the “SAVE SETTINGS” button. Note! The user must fill in the appropriate search Network for the search to work.

A second method for configuration can be done via COM3 with Jumper J11 (software version 2.0D and newer, J10 prior to 2.0D) removed; the following menu will be displayed after a carriage return is sent to COM3.

- ```

MAIN MENU
1. DISPLAY CURRENT SETTINGS
2. SETUP IP PARAMETERS
3. SETUP GATEWAY ADDRESS
4. ENABLE/DISABLE DCHP CONFIGURATION
5. SETUP PORT NUMBERS
6. RESET FACTORY DEFAULTS
7. REBOOT TO USE MODIFIED SETTINGS
8. SETUP STAND-ALONE MODE

```

### Sub Display (1) Display of Current Settings

```
CURRENT SETTINGS
DEFAULT TCP SETTINGS :
TCP/IP Address : 128.0.0.10
NETMASK : 255.255.255.0

DEFAULT GATEWAY : ...

***** CONFIGURED FOR STATIC ADDRESS
```

### Sub Display (2) Enter TCP/IP parameters

```
Enter TCP/IP Address : 128.0.0.12
128.0.0.12
Enter Netmask : 255.255.255.0
255.255.255.0
NOTE! TO ENABLE STATIC YOU MUST DISABLE DHCP (option 4)
AND THEN REBOOT(option 7)!
PRESS ENTER TO CONTINUE
```

### Sub Display (3) Enter Gateway parameters

```
Enter Gateway Address : 192.168.1.100
192.168.1.100
```

### Sub Display (4) Enable/Disable DHCP

```
USE DHCP Y/N (Enter 'N' for Static Address): y
USING DHCP ASSIGNED ADDRESS WHEN REBOOTED
PRESS ENTER TO CONTINUE
```

### Sub Display (5) Setup Port Numbers

```
PORT NUMBERS ARE CONFIGURED ON WEB PAGE
```

### Sub Display (6) Reset Factory Defaults

```
FACTORY DEFAULTS HAVE BEEN RESTORED
REBOOTING PLEASE WAIT
```

### Sub Display (7) Reboot

```
Rebooting Please Wait:
```

### Sub Display (8) SETUP STAND-ALONE MODE

```
Stand-alone Menu
1. Setup Destination TCP/IP Address and Port
2. Enable/Disable Stand-alone Operation on Port
3. Exit Stand-alone Menu
```

Once the TCP/IP address is known the user can adjust settings via their web browser interface show below.

**R.E. SMITH**  
 4311 Tylersville Road  
 Hamilton, Ohio 45011  
 Phone (513) 874-4796 www.rs485.com

**ETHERNET SERIAL PORT SERVER - RS232/RS485/RS422**  
 MODEL ESPSX3 HOME PAGE

**TCP/IP ADDRESS CONFIGURATION**  
 SOFTWARE VERSION : V2.4A (03-23-02)

| CONFIGURATION PROTOCOLS                                                                                                                |           | STATIC IP ADDRESS PARAMETERS                                        |                            |                 |                        |           |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------|----------------------------|-----------------|------------------------|-----------|
| ENABLE DHCP: <input type="checkbox"/><br>ENABLE BOOTP: <input type="checkbox"/><br>STATIC ADDRESS: <input checked="" type="checkbox"/> |           | TCP/IP ADDRESS: (if static operation selected)<br>128 . 0 . 0 . 103 |                            |                 |                        |           |
| HTTP (Web Browser) PORT: 80                                                                                                            |           | SUBNET MASK:<br>255 . 255 . 255 . 0                                 |                            |                 |                        |           |
| CONNECTION TIMEOUT<br>ENABLE: <input type="checkbox"/> TIMEOUT 300 sec.                                                                |           | DEFAULT GATEWAY:<br>0 . 0 . 0 . 0                                   |                            |                 |                        |           |
| COMMUNICATION PORT SETUP                                                                                                               |           |                                                                     | STANDALONE OPERATION SETUP |                 |                        |           |
| COM PORT                                                                                                                               | BAUD RATE | COM SPEC                                                            | NETWORK PORT               | STANDALONE MODE | DESTINATION IP ADDRESS | DEST PORT |
| 1                                                                                                                                      | 9600      | 8-N-1                                                               | 9101                       | DISABLE         | 0 . 0 . 0 . 0          | 0         |
| 2                                                                                                                                      | 9600      | 8-N-1                                                               | 9102                       | DISABLE         | 0 . 0 . 0 . 0          | 0         |
| 3                                                                                                                                      | 9600      | 8-N-1                                                               | 9103                       | DISABLE         | 0 . 0 . 0 . 0          | 0         |

**PRESS SUBMIT TO UPDATE CONFIGURATIONS SETTINGS**

**EXAMPLE WEB PAGE CONFIGURATION SCREEN**

R.E.SMITH TCP/IP CONFIGURATION UTILITY (VERSION 1.4)

JP Search

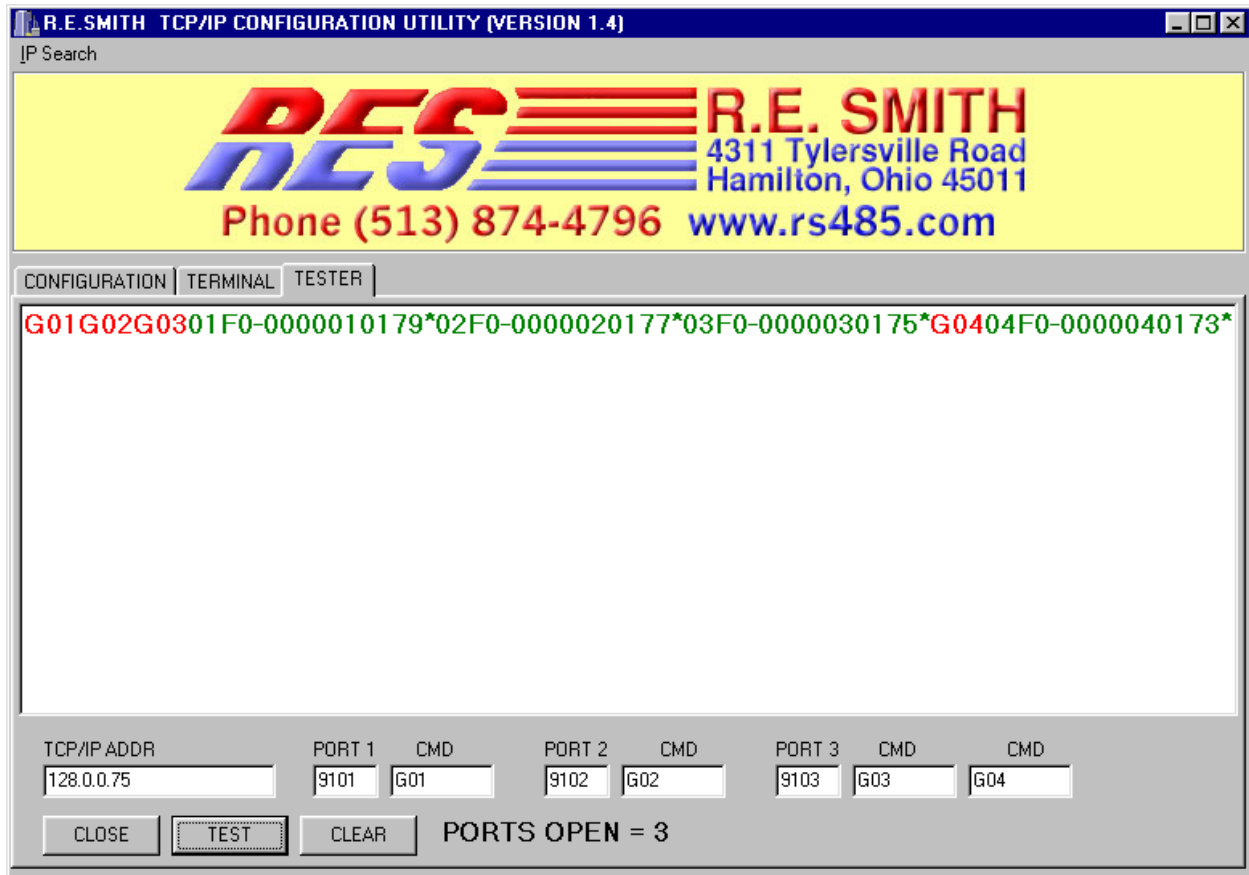
**DEC** **R.E. SMITH**  
4311 Tylersville Road  
Hamilton, Ohio 45011  
Phone (513) 874-4796 www.rs485.com

CONFIGURATION | **TERMINAL** | TESTER

```
L0101F0G0101F0-0000010179*G0101F0-0000010179*
```

Address: 128.0.0.75 Port: 9101 Close STATUS: CONNECTED 128.0.0.75 9101 TX RX

TCP/IP TERMINAL



### MANUFACTURING TEST

This tab illustrates our manufacturing test to verify all ports are functioning, when connect to test equipment (4 Pingnatron boards), commands in red are sent responses in green are shown.



## STAND-ALONE OPERATION

Stand-alone operation can be enabled via the web browser interface. In this mode one board can be configured to be the initiator of a connection between two ESPSX3 units. In the example below the unit with TCP/IP address 192.168.1.1 is configured with the following settings in the STANDALONE OPERATION PARAMETERS section. In this configuration the board with TCP/IP address 192.168.1.2 port 9101 (Serial 1) will be automatically connected to the master unit (192.168.1.1, Serial 1). Baud rate, data bits and stop bits can be different depending on the requirements of the connected devices. Long distance connections can be made in this fashion between RS-232, RS-422, or RS-485 devices/networks.

| STANDALONE OPERATION SETUP |                        |           |
|----------------------------|------------------------|-----------|
| STANDALONE MODE            | DESTINATION IP ADDRESS | DEST PORT |
| MASTER ▼                   | 192 . 200 . 1 . 1      | 9100      |
| TARGET ▼                   | 192 . 201 . 0 . 0      | 0         |
| TARGET ▼                   | 0 . 0 . 0 . 0          | 0         |

SAMPLE PARAMETERS FOR MASTER UNIT

## TCP/IP USING VISUAL BASIC

Accessing the Ethernet serial port server via the internet or local area network using Visual Basic 6.0 or higher. Note!

1. First open ESPSX3 serial port 1 with the Winsock component.

```
Winsock1.RemoteHost = "128.0.0.206"
Winsock1.RemotePort = "9101"
Winsock1.Connect
```

2. Second, Send to Serial Port 1 on the ESPSX3

```
Winsock1.SendData ("HELLO WORLD")
```

3. Finally, Data can be received with the DataArrival event.

```
Private Sub Winsock1_DataArrival (ByVal bytesTotal As Long)
 Dim strData As String
 Winsock1.GetData strData, vbString
End Sub
```

There are several other event functions available for the Winsock component including (Connect, Close, ConnectionRequest, DataArrival, Error, SendComplete, and SendProgress).