



Thunder Eagle, Inc.

P.O. Box 625
Vienna, VA 22183

tel: 703-242-0122
toll free: 1-888-553-2928
fax: 703-281-7459

email: support@thuneagle.com
website: www.thuneagle.com



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Thunder Eagle® NI-100 Network Interface Instructions

1) Background

- a. The NI-100 (Network Interface) is an easy to use Ethernet to serial data converter using a Newport iServer web server and a pc board with a power supply and connectors to make network connections plug and play.
- b. The NI-100 has one each of an RJ-11 connector, a DB9 connector and a screw terminal wire connector. Use only one connector at a time.
- c. The power supply is 12VDC. A power led shows that the unit has power.
- d. In Thunder Eagle® systems, the primary use of the NI-100 is to transfer the serial alert message data from the AE400, across the internet, to the serial port of a PC running the FipsSender software. In this manner, the AE400 can be remotely located from the FipsSender PC.

2) Setup NI100

- a. Power up the NI100 and make sure the power led and the Ethernet status leds light. If the Ethernet port is not connected to a network, it is normal for the Ethernet status light to go out.
- b. Run the iConnect software on your PC. See www.thuneagle.com/login WebServer configuration information for details concerning the iServer software.
- c. Connect the NI100 to the same network as the PC, or use a crossover cable for direct connection. NOTE: The PC and the iServer MUST be on the same network for programming.
- d. Enter the MAC address for the iServer, which appears on a label on the NI100, into the iConnect software. Assign an IP address to the NI100 and click the Send IP button on the iConnect software.
- e. In about 30 seconds a message should appear asking you to test the iServer. Click OK and then click the View Webpage button.
- f. The iServer homepage should appear. Click the update button.
- g. Click the configuration button.
- h. Enter the configuration password 12345678 and press ok.

3) Setup Host (near the AE400 sender)

- a. The host unit is the unit that receives the serial data from the AE400 and sends it to the slave unit, at the other side of the internet, to the pc.

b. The host configuration (near the AE400) screen follows:

CONFIGURATION

Serial Communication

Baud Rate: 9600 Data Bits: 8 bits Parity: none Stop Bits: 1 bit

Flow Control: none Transceiver: RS-232 Modbus/TCP: disable

End Character(Hex): 0A Forward End Char: enable Timeout: 0000 msec

Serial Port Password: disable 1234abcd

Terminal Server

TCP/UDP: TCP Server Type: slave Number of Connections: 1 Local Port: 02000

Connection Control: not used Connection Timeout: 00000 X 10 msec

Remote Access(Tunneling)

Remote Access: disable Remote IP Address: 0.0.0.0 Remote Port: 02000

Save Reset

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c. The host configuration is as follows:

Baud: 9600
 Data Bits 8
 Parity None
 Stop Bits 1
 Flow Control None
 Transceiver RS232
 Modbus/TCP Disable
End Character 0A (that is zero A)
 Forward End Character Enable
 Timeout 0000
 Serial Port Password Disable
 TCP/UDP TCP
 Server Type Slave
Number Connections 1
 Local Port 2000
 Connection Control Not Used
 Timeout 0000
 Remote Access Disable
 Remote IP Address 0.0.0.0
 Remote Port 2000

d. The slave configuration (near the PC) screen follows:

CONFIGURATION

Serial Communication

Baud Rate|9600| Data Bits|8 bits| Parity|none| Stop Bits|1 bit|

Flow Control|none| Transceiver|RS-232| Modbus/TCP|disable|

End Character(Hex)|00| Forward End Char|enable| Timeout|0000| msec

Serial Port Password|disable| |1234abcd|

Terminal Server

TCP/UDP|TCP| Server Type|slave| Number of Connections|1| Local Port|02000|

Connection Control|not used| Connection Timeout|00000| X 10 msec

Remote Access(Tunneling)

Remote Access|enable| Remote IP Address|100.100.1.204| Remote Port|02000|

Save Reset

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e. The slave configuration is as follows:

Baud: 9600

Data Bits 8

Parity None

Stop Bits 1

Flow Control None

Transceiver RS232

Modbus/TCP Disable

End Character 00 (that is zero zero)

Forward End Character Enable

Timeout 0000

Serial Port Password Disable

TCP/UDP TCP

Server Type Slave

Number Connections 1

Local Port 2000

Connection Control Not Used

Timeout 0000

Remote Access Enable

Remote IP Address xxx.xxx.xxx.xxx is the IP address of the host

Remote Port 2000

f. Check the system

- 1) Connect one end of the supplied RJ11 cable to the AE400 led sign port (rear of unit) and the other end to the NI100. A DB9 male to male gender adapter is required.

- 2) Press the last alert button on the AE400 and make sure the Ethernet leds flash. If they do not, open the NI100 and reverse the DB9 transmit jumpers (from 1-2 to 2-3) and (2-3 to 1-2). Try the last alert button again and make sure the Ethernet leds flash.
- 3) Open a session of Hyperterminal using the serial port (9600, 8, 1 none, no flow control and under ascii settings, add line feed to incoming lines). Local character echo on.
- 4) Connect a serial cable between the PC and the slave NI100 DB9. Hit a few random keys on the PC and make sure the Ethernet leds flash. If they do not, open the NI100 and reverse the DB9 transmit jumpers (from 1-2 to 2-3) and (2-3 to 1-2). Hit a few random keys again and make sure the Ethernet leds flash.
- 5) Press the last alert button on the AE400 and the last alert should travel out of the AE400, into the host NI100, across the internet, to the slave NI100 and into the PC's serial port running Hyperterminal.
- 6) Close Hyperterminal and run FipsSender and hit the last alert button on the AE400 and the system should be operational.
- 7) Note: You can access the iServer from a web browser by typing in the IP address of the NI100. You can change all configurations of the iServer from the web browser. The password for the Access Control (password and IP address change) is 00000000 (eight zeros). Sometimes you need to first access the configuration menu (pw 12345678) and then return to the main menu before the iServer will let you access the Access Control area.