NPort IA5150A/IA5250A Series User's Manual

First Edition, May 2010

www.moxa.com/product



© 2010 Moxa Inc. All rights reserved. Reproduction without permission is prohibited.

NPort IA5150A/IA5250A Series User's Manual

The software described in this manual is furnished under a license agreement and may be used only in accordance with the terms of that agreement.

Copyright Notice

Copyright ©2010 Moxa Inc. All rights reserved. Reproduction without permission is prohibited.

Trademarks

The MOXA logo is a registered trademark of Moxa Inc. All other trademarks or registered marks in this manual belong to their respective manufacturers.

Disclaimer

Information in this document is subject to change without notice and does not represent a commitment on the part of Moxa.

Moxa provides this document as is, without warranty of any kind, either expressed or implied, including, but not limited to, its particular purpose. Moxa reserves the right to make improvements and/or changes to this manual, or to the products and/or the programs described in this manual, at any time.

Information provided in this manual is intended to be accurate and reliable. However, Moxa assumes no responsibility for its use, or for any infringements on the rights of third parties that may result from its use.

This product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

Technical Support Contact Information

www.moxa.com/support

Moxa Americas		<u>Moxa China (Shanghai office)</u>	
1-888-669-2872	Toll-free:	800-820-5036	
+1-714-528-6777	Tel:	+86-21-5258-9955	
+1-714-528-6778	Fax:	+86-10-6872-3958	
ope	Moxa Asia-Pacific		
+49-89-3 70 03 99-0	Tel:	+886-2-8919-1230	
+49-89-3 70 03 99-99	Fax:	+886-2-8919-1231	
	1-888-669-2872 +1-714-528-6777 +1-714-528-6778 ope +49-89-3 70 03 99-0	1-888-669-2872 Toll-free: +1-714-528-6777 Tel: +1-714-528-6778 Fax: ope Moxa Asia +49-89-3 70 03 99-0 Tel:	

Table of Contents

1.	Introduction	
	Overview	
	Package Checklist	
	Product Features	
	Product Specifications	
2.	Getting Started	
	Panel Layout	
	Connecting the Hardware	
	Wiring Requirements	
	Connecting the Power	
	Connecting to the Network	
	Connecting to a Serial Device LED Indicators	
	Adjust the Pull-high/Pull-low Resistors and Terminators for RS-422/RS-485 Ports	
3.	Initial IP Address Configuration	
	Initializing the NPort's IP Address	3-2
	Factory Default IP Address	
	NPort Administration Suite	
	Telnet Console	
	Serial Console (19200, n, 8, 1)	
4.	Choosing the Proper Operation Mode	
	Overview	
	Real COM Mode	
	RFC2217 Mode	
	TCP Server Mode	
	TCP Client Mode UDP Mode	
	Pair Connection Mode	
	Ethernet Modem Mode	
	Reverse Telnet Mode	
	Disabled Mode	
5.	Web Console Configuration	
э.	Opening Your Browser	
	Export/Import	
	Basic Settings	
	Network Settings	
	SNMP Settings	
	IP Address Report	
	Serial Settings	
	Serial Parameters	
	Operating Settings	5-11
	Real COM Mode	
	RFC2217 Mode	
	TCP Server Mode	
	TCP Client Mode	
	UDP Mode	
	Pair Connection Mode Ethernet Modem Mode	
	Reverse Telnet Mode	
	Disabled Mode	
	Accessible IP Settings	
	Auto Warning Settings	
	Auto warning: Email and SNMP trap	
	Event Type	5-32
	Upgrade Firmware	
	Monitor	
	Monitor Line	
	Monitor Async	
	Monitor Async-Settings	
	Monitor Relay Output	
	Change Password	
	Load Factory Default Save/Restart	
_		
6.	Configuring NPort Administrator	
	Installing NPort Administrator	
	Configuration	6-4

Unlock Password Protection		Broadcast Search	6-4
Upgrading the Firmware. Export Configuration Import Configuration Monitor Port Monitor On-line COM Mapping Off-line COM Mapping Off-line COM Mapping CCM Grouping Creating a COM Group Deleting a COM Group Adding a Port to a COM Group Removing a Port from a COM Group Modify Ports in a COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing Advanced Settings and Serial Parameters of the COM Group IP Serial LIB Overview IP Serial LIB Function Groups Example Program A Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-232/422/485 (5-contact term			
Export Configuration Import Configuration Monitor Port Monitor COM Mapping Off-line COM Mapping Off-line COM Mapping CCM Grouping Creating a COM Group Deleting a COM Group Removing a Port to a COM Group Removing a Port form a COM Group Changing the COM Number of a COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Address Report. 7. IP Serial LIB Overview IP Serial LIB Function Groups Example Program A Port Pinout Diagrams Ethernet Port PrinoutS RS-232/422/485 (male DB9) Pinouts RS-232/422/485 (male DB9) Pinouts Serial Cable Wiring Power Input and Relay Output Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring DB9 Female DB9 to Male DB9. Female DB9 to Male DB2. Ethernet Cables B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups. RFCI213 MIB-III Supported SNMP Variables RFCI213 MIB-III Supported SNMP Variables RFCI213 MIB-III Supported SNMP Variables RFCI213 MIB-III Supported SNMP Variables RFCI317: RS-232 MIB Objects.			
Import Configuration			
Monitor Port Monitor Port Monitor On-line COM Mapping On-line COM Mapping On-line COM Mapping COM Grouping Creating a COM Group Deleting a COM Group Deleting a COM Group Adding a Port to a COM Group Modify Ports in a COM Group Modify Ports in a COM Group Modify Ports in a COM Group Changing the COM Number of a COM Group Changing the COM Number of a COM Group Changing the COM Number of a COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Serial LIB Overview Overview IP Serial LIB Overview Serial Compare Overview Example Program Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-322/422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series Newer Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9 Female DB9 Female DB9 Female DB9 to Male DB25 Ethernet Cables B. Well Known Port Numbers<			
Port Monitor. COM Mapping. On-line COM Mapping Off-line COM Mapping COM Grouping. Creating a COM Group Deleting a COM Group Adding a Port to a COM Group Removing a Port from a COM Group Modify Ports in a COM Group Modify Ports in a COM Group Changing the COM Number of a COM Group Changing the COM Number of a COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Serial LIB Overview IP Serial LIB Function Groups Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9. Female DB9 to Male DB25 Ethernet Cables B. Well Known Port Numbers C.			
COM Mapping On-line COM Mapping Off-line COM Mapping Com Grouping Creating a COM Group Deleting a COM Group Adding a Port to a COM Group Removing a Port from a COM Group Changing the COM Number of a COM Group Changing the COM Number of a COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Address Report 7. IP Serial LIB Overview IP Serial LIB Function Groups Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-323/422/485 (male DB9) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9 Female DB9 to Male DB9 Female DB9 to Male DB9 Female DB9 to Male DB2 Ethernet Cables B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups RFC1213 MIB-II Supported SMMP Variables RFC1213 MIB-II Supported SMMP Variables RFC1317: RS-232 MIB Objects			
On-line COM Mapping Off-line COM Mapping COM Grouping Creating a COM Group Deleting a COM Group Adding a Port to a COM Group Removing a Port from a COM Group Modify Ports in a COM Group Changing the COM Number of a COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Address Report. 7. IP Serial LIB Overview IP Serial LIB Function Groups Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-322/425 (5-contact terminal block) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9 Female DB9 to Male DB25 Ethernet Cables B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups.			
Off-line COM Mapping COM Grouping. Creating a COM Group Deleting a COM Group Adding a Port to a COM Group Removing a Port from a COM Group Modify Ports in a COM Group Changing the COM Number of a COM Group Changing the COM Number of a COM Group Changing the COM Number of a COM Group Changing the Serial Port Specified as Signal Port for the COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Address Report. 7. IP Serial LIB Overview IP Serial LIB Function Groups Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-232/422/485 (s-contact terminal block) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9 Female DB9 to Male DB9 Female DB9 to Male DB9 Female DB9 to Male DB25 Ethernet Cables B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups			
COM Grouping			
Creating a COM Group Deleting a COM Group Adding a Port to a COM Group Removing a Port from a COM Group Modify Ports in a COM Group Changing the COM Number of a COM Group Changing Advanced Settings and Serial Parameters of the COM Group. Changing the Serial Port Specified as Signal Port for the COM Group IP Address Report. 7. IP Serial LIB Function Groups Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts. RS-232/422/485 (male DB9) Pinouts. RS-422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts. Serial Cable Wiring Diagrams Female DB9 to Male DB9. Female DB9 to Male DB9. Female DB9 to Male DB9. Remale			
Deleting a COM Group Adding a Port to a COM Group Removing a Port to a COM Group Modify Ports in a COM Group Changing the COM Number of a COM Group Changing the COM Number of a COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Serial LIB Overview IP Serial LIB Function Groups Example Program A Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-232/422/485 (G-contact terminal block) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9. Female DB9 to Male DB25. Ethernet Cables B Well Known Port Numbers C. SNMP Agents with MIB I1 & RS-232 Like Groups. RFC1213 MIB-II Supported SNMP Variables RFC1317: RS-232 MIB Objects. D. Auto IP Report Protocol			
Adding a Port to a COM Group Removing a Port from a COM Group Modify Ports in a COM Group Changing the COM Number of a COM Group Changing the Serial Port Specified as Signal Port for the COM Group. Changing the Serial Port Specified as Signal Port for the COM Group. IP Address Report			
 Removing a Port from a COM Group			
 Modify Ports in a COM Group			
Changing the COM Number of a COM Group Changing Advanced Settings and Serial Parameters of the COM Group Changing the Serial Port Specified as Signal Port for the COM Group IP Address Report 1P Serial LIB Overview IP Serial LIB Function Groups Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts. RS-232/422/485 (male DB9) Pinouts. RS-422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9. Female DB9 to Male DB9. Female DB9 to Male DB9. Female DB9 to Male DB9. Female DB9 to Male DB25. Ethernet Cables B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups . RFC1213 MIB-II Supported SNMP Variables RFC1317: RS-232 MIB Objects. D. Auto IP Report Protocol			
Changing Advanced Settings and Serial Parameters of the COM GroupChanging the Serial Port Specified as Signal Port for the COM Group IP Address Report		Modify Ports in a COM Group	6-24
Changing the Serial Port Specified as Signal Port for the COM Group IP Address Report		Changing the COM Number of a COM Group	6-24
 IP Address Report			
 7. IP Serial LIB. Overview. IP Serial LIB Function Groups. Example Program A. Pinouts and Cable Wiring. Port Pinout Diagrams. Ethernet Port Pinouts. RS-232/422/485 (male DB9) Pinouts. RS-422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series. Power Input and Relay Output Pinouts. Serial Cable Wiring Diagrams. Female DB9 to Male DB9. Female DB9 to Male DB9. Female DB9 to Male DB25. Ethernet Cables. B. Well Known Port Numbers. C. SNMP Agents with MIB II & RS-232 Like Groups. RFC1213 MIB-II Supported SNMP Variables. RFC1317: RS-232 MIB Objects. D. Auto IP Report Protocol. 			
Overview IP Serial LIB Function Groups Example Program Example Program A. Pinouts and Cable Wiring Port Pinout Diagrams Ethernet Port Pinouts RS-232/422/485 (male DB9) Pinouts RS-232/422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9. Female DB9 to Male DB9. Female DB9 to Male DB25. Ethernet Cables Ethernet Cables B. Well Known Port Numbers SNMP Agents with MIB II & RS-232 Like Groups. RFC1213 MIB-II Supported SNMP Variables RFC1317: RS-232 MIB Objects D. Auto IP Report Protocol Power Input and Power Protocol		IP Address Report	6-29
 IP Serial LIB Function Groups	7.	IP Serial LIB	7-1
 IP Serial LIB Function Groups		Overview	7-2
 Example Program			
 A. Pinouts and Cable Wiring			
 Port Pinout Diagrams	^		
Ethernet Port Pinouts	А.		
 RS-232/422/485 (male DB9) Pinouts			
 RS-422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series			
Power Input and Relay Output Pinouts Serial Cable Wiring Diagrams Female DB9 to Male DB9 Female DB9 to Male DB25 Ethernet Cables B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups RFC1213 MIB-II Supported SNMP Variables RFC1317: RS-232 MIB Objects D. Auto IP Report Protocol			
 Serial Cable Wiring Diagrams			
 Female DB9 to Male DB9			
 Female DB9 to Male DB25			
Ethernet Cables B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups RFC1213 MIB-II Supported SNMP Variables RFC1317: RS-232 MIB Objects D. Auto IP Report Protocol			
 B. Well Known Port Numbers C. SNMP Agents with MIB II & RS-232 Like Groups			
 C. SNMP Agents with MIB II & RS-232 Like Groups RFC1213 MIB-II Supported SNMP Variables RFC1317: RS-232 MIB Objects D. Auto IP Report Protocol 			
RFC1213 MIB-II Supported SNMP Variables RFC1317: RS-232 MIB Objects D. Auto IP Report Protocol	В.		
RFC1317: RS-232 MIB Objects D. Auto IP Report Protocol	C.		
D. Auto IP Report Protocol			
		RFC1317: RS-232 MIB Objects	C-3
E Compliance Notice	D.	Auto IP Report Protocol	D-1
	Ε.	Compliance Notice	E-1

Welcome to the NPort IA5150A/IA5250A Series of industrial serial device servers. In this manual, we refer to the eight products in the series collectively as the "NPort IA5150A/IA5250A Series."

Surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5150A-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5150AI1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C opera		
NPort IA5150A-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5150AI1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating <th>NPort IA5150A</th> <th>1-port RS-232/422/485 industrial automation device server with serial/LAN/power</th>	NPort IA5150A	1-port RS-232/422/485 industrial automation device server with serial/LAN/power
Surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5150AI1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5150AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation		surge protection, two $10/100BaseT(X)$ ports (1 IP), 0 to $60^{\circ}C$ operating temperature
temperatureNPort IA5150AI1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolation	NPort IA5150A-T	1-port RS-232/422/485 industrial automation device server with serial/LAN/power
NPort IA5150AI1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolation		surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating
NPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating		temperature
2KV isolationNPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating	NPort IA5150AI	1-port RS-232/422/485 industrial automation device server with serial/LAN/power
NPort IA5150AI-T1-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation		surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature,
NPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating		2KV isolation
temperature, 2KV isolationNPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating	NPort IA5150AI-T	1-port RS-232/422/485 industrial automation device server with serial/LAN/power
NPort IA5250A2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature, 2KV isolation		surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating
surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperatureNPort IA5250A-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperatureNPort IA5250AI2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolationNPort IA5250AI-T2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating		temperature, 2KV isolation
NPort IA5250A-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature NPort IA5250AI 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation NPort IA5250AI-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation	NPort IA5250A	2-port RS-232/422/485 industrial automation device server with serial/LAN/power
Surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating temperature NPort IA5250AI 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation NPort IA5250AI-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation		surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature
temperature NPort IA5250AI 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation NPort IA5250AI-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating	NPort IA5250A-T	2-port RS-232/422/485 industrial automation device server with serial/LAN/power
NPort IA5250AI 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation NPort IA5250AI-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating		surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating
surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature, 2KV isolation NPort IA5250AI-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating		temperature
2KV isolation NPort IA5250AI-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating	NPort IA5250AI	2-port RS-232/422/485 industrial automation device server with serial/LAN/power
NPort IA5250AI-T 2-port RS-232/422/485 industrial automation device server with serial/LAN/power surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating		surge protection, two 10/100BaseT(X) ports (1 IP), 0 to 60°C operating temperature,
surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating		2KV isolation
	NPort IA5250AI-T	2-port RS-232/422/485 industrial automation device server with serial/LAN/power
temperature, 2KV isolation		surge protection, two 10/100BaseT(X) ports (1 IP), -40 to 75°C operating
		temperature, 2KV isolation

The four models in the NPort IA5150A/IA5250A Series are:

The following topics are covered in this chapter:

- Overview
- Package Checklist
- Product Features
- Product Specifications

Overview

These advanced NPort IA device servers are more rugged than ever before, from the design, casing, connectors, mounting methods, to the surge protection. Not only has the hardware been upgraded, but more flexible and user-friendly software has been added. The NPort IA5150A/IA5250A series of device servers deliver easy and reliable serial-to-Ethernet connectivity for the industrial automation market. The NPort IA5150A/IA5250A series is designed to allow any serial device to connect to an Ethernet network. The compact size of the NPort IA5150A/IA5250A device servers makes them an ideal choice for connecting RS-232/422/485 serial devices, such as PLCs, sensors, meters, motors, drives, barcode readers, and operator displays. The NPort IA5150A/IA5250A Series device servers come with a compact casing and a DIN-Rail mounting kit.

The NPort IA5150A/IA5250A serial device servers ensure the compatibility of network software that uses a standard network API (Winsock or BSD Sockets) by providing five modes: TCP Server, TCP Client, UDP, Pair Connection, Ethernet Modem, and Rtelnet. Thanks to the NPort IA5150A/IA5250A series' Real COM/TTY drivers, software that works with COM/TTY ports can be set up to work over a TCP/IP network, without modifying the serial COM software applications. This excellent feature preserves your software investment and lets you enjoy the benefits of networking your serial devices instantly.

The NPort IA5150A/IA5250A serial device servers support automatic IP configuration protocols (DHCP, BOOTP) and manual configuration via a handy web browser console. Both methods ensure quick and effective installation. And with the NPort IA5150A/IA5250A's Windows Utility, installation is very straightforward, since all system parameters can be stored and then copied to other device servers simultaneously.

Package Checklist

The NPort IA5150A/IA5250A Series device servers are shipped with the following items:

Standard Accessories

- 1 NPort IA5150A/IA5250A Serial Device Server
- Documentation & Software CD
- NPort IA5150A/IA5250A Series Quick Installation Guide
- Warranty Card

Optional Accessories

- DR-4524: 45W/2A DIN-Rail 24 VDC Power Supply with universal 85 to 264 VAC input
- DR-75-24: 75W/3.2A DIN-Rail 24 VDC Power Supply with universal 85 to 264 VAC input
- DR-120-24: 120W/5A DIN-Rail 24 VDC Power Supply with 88 to 132 VAC/176 to 264 VAC input by switch

NOTE: Notify your sales representative if any of the above items is missing or damaged.

Product Features

The NPort IA5150A/IA5250A Series device servers have the following features:

- 1. Make your serial devices Internet ready
- 2. Versatile socket operating modes, including TCP Server, TCP Client, UDP, Reverse Telnet, RFC2217, and Real COM driver
- 3. 2- or 4-wire RS-485 with patented ADDC[™] (Automatic Data Direction Control)
- 4. Slim type, inch-wide industrial strength casing
- 5. DIN-Rail or wall mountable
- 6. Built-in Ethernet cascading ports for easy wiring (RJ45 only)
- 7. Redundant dual DC power inputs
- 8. Warning by relay output and E-mail

Product Specifications

Ethernet Interface

Number of Ports: 2 Speed: 10/100 Mbps, auto MDI/MDIX Connector: 8-pin RJ45 Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: NPort® IA5150A: 1 NPort® IA5250A: 2 Serial Standards: RS-232/422/485 Connector: NPort® IA5150A Series: DB9 male for RS-232, terminal block for RS-422/485 NPort® IA5250A Series: DB9 male for RS-232/422/485 Serial Line Protection:

- 15 KV ESD protection for all signals
- 2 KV isolation protection (NPort IA5150AI/IA5150AI-T, NPort IA5250AI/IA5250AI-T)
- 1 KV surge protection (Level 2)

RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8 Stop Bits: 1, 1.5, 2 Parity: None, Even, Odd, Space, Mark Flow Control: RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF Baudrate: 50 to 921.6 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND **RS-422**: Tx+, Tx-, Rx+, Rx-, GND **RS-485-4w**: Tx+, Tx-, Rx+, Rx-, GND **RS-485-2w**: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP, IGMP

Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility Windows Real COM Drivers: Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64 Fixed TTY Drivers: SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i

Linux Real TTY Drivers: Linux kernel 2.4.x, 2.6.x

Physical Characteristics

Housing: Metal Weight: NPort® IA5150A Series: 475 g (1.05 lb) NPort® IA5250A Series: 485 g (1.07 lb) Dimensions: 36 x 140 x 105 mm (1.42 x 5.51 x 4.13 in)

Environmental Limits

Operating Temperature: Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F) Operating Humidity: 5 to 95% RH Storage Temperature: -40 to 85°C (-40 to 185°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:

NPort® IA5150A: 12 to 48 VDC, 220 mA @ 12 VDC; 110 mA @ 24 VDC NPort® IA5150AI: 12 to 48 VDC, 255 mA @ 12 VDC; 130 mA @ 24 VDC NPort® IA5250A: 12 to 48 VDC, 250 mA @ 12 VDC; 125 mA @ 24 VDC NPort® IA5250AI: 12 to 48 VDC, 290 mA @ 12 VDC; 150 mA @ 24 VDC

Regulatory Approvals

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A Safety: UL508, LVD Hazardous Location: UL/cUL Class 1 Division 2 Groups A, B, C and D ATEX: Class I, Zone 2 EMS: EN61000-4-2 (ESD), Criteria B, Level 3 EN61000-4-3 (RS), Criteria A, Level 3 EN61000-4-4 (EFT), Criteria B, Level 4 EN61000-4-5 (Surge), Criteria B, Level 3 for power line, Level 2 for communication line EN61000-4-6 (CS), Criteria A, Level 3 EN61000-4-8, Criteria A, Level 3 EN61000-4-11 Shock: IEC60068-2-27 Freefall: IEC60068-2-32 Vibration: IEC60068-2-6

Reliability

Alert Tools: Built-in buzzer and relay output Automatic Reboot Trigger: Built-in WDT (watchdog timer)

Warranty

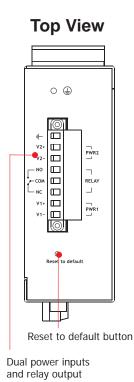
Warranty Period: 5 years Details: See www.moxa.com/warranty In this chapter, we give instructions on installing the NPort IA5150A/IA5250A device servers. Software installation is covered in subsequent chapters.

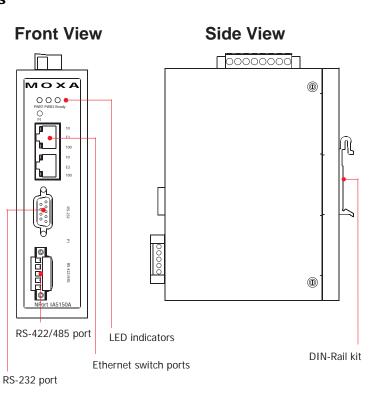
The following topics are covered in this chapter:

- Panel Layout
- Connecting the Hardware
 - > Wiring Requirements
 - \succ Connecting the Power
 - Connecting to the Network
 - > Connecting to a Serial Device
 - ➤ LED Indicators
 - > Adjust the Pull-high/Pull-low Resistors and Terminators for RS-422/RS-485 Ports

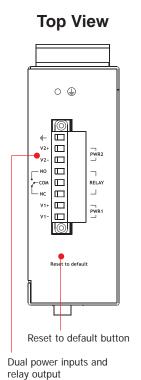
Panel Layout

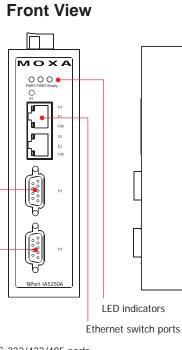
NPort IA5150A Series

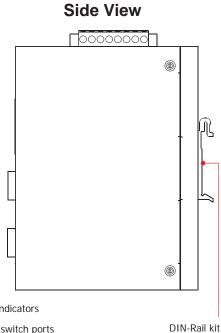




NPort IA 5250A







RS-232/422/485 ports

Connecting the Hardware

This section describes how to connect the NPort IA5150A/IA5250A to serial devices for first time testing purposes. We cover **Wiring Requirements**, **Connecting the Power**, **Grounding the NPort** IA5150A/IA5250A Series, Connecting to the Network, **Connecting to a Serial Device**, and **LED** Indicators.

Wiring Requirements



ATTENTION

Safety First!

Be sure to disconnect the power cord before installing and/or wiring your NPort IA5150A/IA5250A Series. Wiring Caution!

Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size.

If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

Temperature Caution!

Please take care when handling the NPort IA5150A/IA5250A. When plugged in, the NPort IA5150A/IA5250A's internal components generate heat, and consequently the casing may feel hot to the touch. When installed with other components, make sure that there is at least 2 cm clearance on all sides of the NPort IA5150A/IA5250A in order to allow proper heat dissipation.

You should heed the following:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
 NOTE: Do not run signal or communication wiring and power wiring in the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.
- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar electrical characteristics can be bundled together.
- Keep input wiring and output wiring separate.
- Where necessary, it is strongly advised that you label wiring to all devices in the system.

Connecting the Power

Connect the 12-48 VDC power line with the NPort IA5150A/IA5250A's terminal block. If the power is properly supplied, the "Ready" LED will show a solid red color until the system is ready, at which time the "Ready" LED will change to a green color.

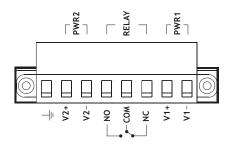
Grounding the NPort IA5150A/IA5250A Series

Grounding and wire routing helps limit the effects of noise caused by electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices.



WARNING

This product is intended to be mounted to a well-grounded mounting surface such as a metal panel.



SG:

The Shielded Ground (sometimes called Protected Ground) contact is the left most contact of the 8 contact power terminal block connector when viewed from the angle shown here. Connect the SG wire to an appropriate grounded metal surface.

Connecting to the Network

Connect one end of the Ethernet cable to the NPort IA5150A/IA5250A's 10/100M Ethernet port and the other end of the cable to the Ethernet network. If the cable is properly connected, the NPort IA5150A/IA5250A will indicate a valid connection to the Ethernet in the following ways:

- The Ethernet LED maintains a solid green color when connected to a 100 Mbps Ethernet network.
- The Ethernet LED maintains a solid orange color when connected to a 10 Mbps Ethernet network.
- The Ethernet LED will flash when Ethernet packets are being transmitted or received.



ATTENTION

Every NPort IA5150A/ IA5250A series is equipped with 2 Ethernet ports, which can be used to create an open chain of NPort IA5150A/IA5250A device servers. You must be careful not to connect the Ethernet ports of the two device servers at the ends of the chain. In other words, NPort IA does NOT support a closed chain.

Connecting to a Serial Device

Connect the serial data cable between the NPort IA5150A/IA5250A and the serial device. Serial data cables are optional accessories for NPort.

LED Indicators

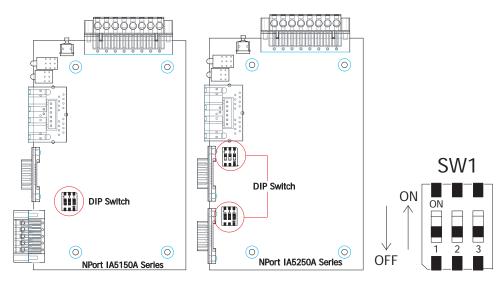
The top panels of all NPort IA5150A/IA5250As have four LED indicators, as described in the following table.

LED Name	LED Color	LED Function		
PWR1, PWR2	red	Power is being supplied to power input PWR1, PWR2.		
Ready	red	Steady on: Power is on and the NPort IA5150A/IA5250A is booting up.		
		Blinking: Indicates an IP conflict, or DHCP or BOOTP server of		
			respond properly, or a relay output occurred.	
			When the above two conditions occur at the same time,	
			check the relay output first. If after resolving the relay output	
			the Ready LED is still blinking, then there is an IP conflict, or	
			the DHCP or BOOTP server did not respond properly.	
	green	Steady on: Power is on and the NPort IA5150A/IA525		
		normally.		
		Blinking:	The device server has been located by Administrator's	
			Location function.	
	off	Power is off,	or power error condition exists.	
E1, E2	orange	10 Mbps Ethe	ernet connection.	
	green	100 Mbps Eth	nernet connection.	
off Ethernet cable is disconnected, or has a short.		le is disconnected, or has a short.		
P1, P2	orange	Serial port is receiving data.		
green Serial port is transmitting data.		transmitting data.		
	off	No data is being transmitted or received through the serial port.		

Adjust the Pull-high/Pull-low Resistors and Terminators for RS-422/RS-485 Ports

In certain critical environments, you may need to add termination resistors to prevent the reflection of serial signals. When using termination resistors, it is important to set the pull high/low resistors properly so that electrical signals do not become corrupted. It is improbable for a single pull high/low resistor value to suit all the various environments and this is why the NPort IA5150A/IA5250A series provides DIP switches for setting the pull high/low resistor values for each serial port.

The DIP switches are located on the PCB board; you will need to take off the covers to access them. To set the pull-high resistor to 150 K Ω , flip DIP1 to "OFF," and then set the pull-low resistor to 150 K Ω , and then flip DIP2 to "OFF." To set the pull-high resistor to 1 K Ω , flip DIP1 to "ON," and then set the pull-low resistor to 1 K Ω , and then flip DIP2 to "ON." Make sure that DIP3 is "ON" to enable the 120 Ω terminator. The default settings for the pull-high and pull-low resistors, and the terminators are all at "OFF."



Initial IP Address Configuration

When setting up your NPort IA5150A/IA5250A for the first time, the first thing you should do is configure the IP address. This chapter introduces the methods that can be used to configure the device server's IP address. Select one of the initial IP Address configuration methods to configure the NPort IA5150A/IA5250A's IP Address. For more details about network settings, see the Network Settings section from Chapter 5, Web Console Configuration.

The following topics are covered in this chapter:

- Initializing the NPort's IP Address
- Factory Default IP Address
- INPort Administration Suite
- 🗖 ARP
- Telnet Console
- Serial Console (19200, n, 8, 1)

Initializing the NPort's IP Address

Determine whether your NPort IA5150A/IA5250A needs to use a Static IP or Dynamic IP (either DHCP or BOOTP application).

If the NPort IA5150A/IA5250A is used in a Static IP environment, you can use the NPort Administration Suite, ARP, Web Console, Telnet Console, or Serial Console to configure the new IP address.

If the NPort IA5150A/IA5250A is used in a Dynamic IP environment, you can use the NPort Administration Suite, Web Console, Telnet Console, or Serial Console to configure the NPort IA5150A/IA5250A to get an IP address dynamically with DHCP, DHCP/BOOTP, or BOOTP.



ATTENTION

Consult your network administrator on how to reserve a fixed IP address for your NPort IA5150A/IA5250A in the MAC-IP mapping table when using a DHCP Server or BOOTP Server. In most applications, you should assign a fixed IP address to your NPort IA5150A/IA5250A.

Factory Default IP Address

NPort IA5150A/IA5250A products are configured with the following default private IP address:

Default IP address: 192.168.127.254

(IP addresses of the form 192.168.xxx.xxx are referred to as private IP addresses, since it is not possible to directly access a device configured with a private IP address from a public network. For example, you would not be able to ping such a device from an outside Internet connection. NPort IA5150A/IA5250A applications that require sending data over a public network, such as the Internet, require setting up the server with a valid public IP address, which can be leased from a local ISP.)

NPort Administration Suite

NPort Administration Suite consists of some useful utility programs that are used to configure and manage your NPort IA5150A/IA5250A.

See Chapter 5 for details on how to install NPort Administration Suite, and how to use this suite of useful utilities to set up IP addresses and configure your NPort IA5150A/IA5250A Series serial device servers.

ARP

You can make use of the ARP (Address Resolution Protocol) command to set up an IP address for your NPort IA5150A/IA5250A. The ARP command tells your computer to associate the NPort IA5150A/IA5250A's MAC address with the intended IP address. You must then use Telnet to access the NPort IA5150A/IA5250A, at which point the device server's IP address will be reconfigured.



ATTENTION

In order to use this setup method, both your computer and NPort IA5150A/IA5250A must be connected to the same LAN. Or, you may use a cross-over Ethernet cable to connect the NPort IA5150A/IA5250A directly to your computer's Ethernet card. Before executing the ARP command, your NPort IA5150A/IA5250A must be configured with the factory default IP address (192.168.127.254), and your computer and the NPort IA5150A/IA5250A must be on the same subnet.

Take the following steps to use ARP to configure the IP address:

- 1. Obtain a valid IP address for your NPort IA5150A/IA5250A from your network administrator.
- 2. Obtain the NPort IA5150A/IA5250A's MAC address from the label on its bottom panel.
- 3. Execute the 'arp -s' command from your computer's MS-DOS prompt by typing:
- 4. arp -s 192.168.200.100 00-90-E8-xx-xx-xx
- This is where 192.168.200.100 is the new IP address and 00-90-E8-xx-xx is the MAC address for your NPort IA5150A/IA5250A. (Be sure to use the actual IP address and MAC address for your NPort IA5150A/IA5250A.)
- 6. Next, execute a special Telnet command by typing:

telnet 192.168.200.100 6000

After issuing this command, a Connect failed message will appear, as shown here. After the NPort reboots, its IP address should be updated to the new address, and you can reconnect using either Telnet, Web, or Administrator to check that the update was successful.

Connect	failed 🛛 🔀
8	Could not open a connection to 192.168.200.100

Telnet Console

Depending on how your computer and network are configured, you may find it convenient to use network access to set up your NPort IA5150A/IA5250A's IP address. This can be done using Telnet.



ATTENTION

Figures in this chapter were generated using NPort IA5450AI.

- 1. From the Windows desktop, click on Start and then select Run.
- 2. Type telnet 192.168.127.254 (use the correct IP address if different from the default) in the **Open** text input box, and then click **OK**.

Run	? 🛛
-	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel Browse

3. When the Telnet window opens, if you are prompted to input the **Console password**, input the password and then press **Enter**.

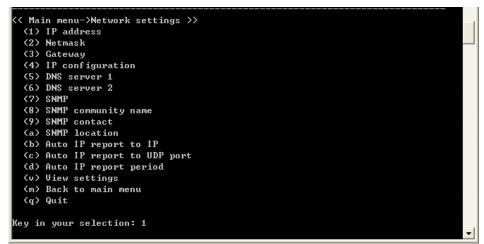
Note that this page will only appear if the NPort is password protected.

Telnet 192.168.127.254		- 🗆 ×
Model name		_
MAC address	: 00:90:E8:12:34:57	
Serial No.	: 2	
Firmware version	: 1.0 Build 10032318	
System uptime	: 0 days, 00h:00m:07s	
Please keyin your	password:	

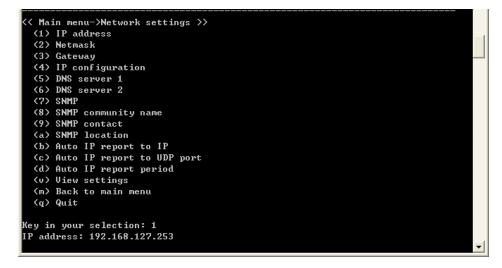
4. Type 2 to select Network settings, and then press Enter.

(1) Basic settings
(2) Network settings
(3) Serial settings
(4) Operating settings
(5) Accessible IP settings
(6) Auto warning settings
(7) Monitor
(8) Ping
(9) Change password
(a) Load factory default
<pre>(v) View settings</pre>
(s) Save/Restart
(q) Quit
Key in your selection: 2_

5. Type 1 to select IP address and then press Enter.



6. Use the Backspace key to erase the current IP address, type in the new IP address, and then press Enter.



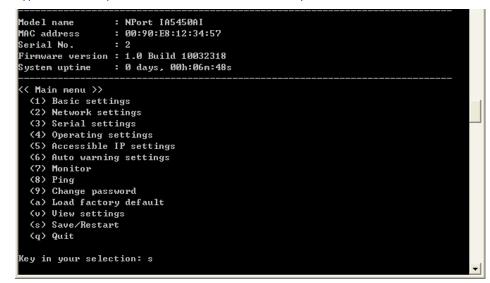
7. Press any key to continue...

<pre></pre> K< Main menu->Network settings >>
(1) IP address
(2) Netmask
(3) Gateway
(4) IP configuration
(5) DNS server 1
(6) DNS server 2
(7) SNMP
(8) SNMP community name
(9) SNMP contact
(a) SNMP location
(b) Auto IP report to IP
(c) Auto IP report to UDP port
(d) Auto IP report period
(v) View settings
(m) Back to main menu
(q) Quit
Key in your selection: 1 IP address: 192.168.127.253 Set IP address success
Press any key to continue

8. Type **m** and then press **Enter** to return to the main menu.



9. Type s and then press Enter to Save/Restart the system.



10. Type y and then press Enter to save the new IP address and restart the NPort IA5150A/IA5250A.



Serial Console (19200, n, 8, 1)

You may use the RS-232 console port to set up the IP address for the NPort IA5150A/IA5250A. We suggest using PComm Terminal Emulator, which is available free of charge as part of the PComm Lite program suite, to carry out the installation procedure, although other similar utilities may also be used.



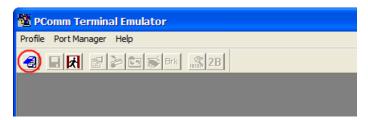
ATTENTION

The **Serial Console** is serial port 1 of the NPort IA5250A series and it is the DB9 serial port (in RS-232 mode) of the NPort IA5150A series.

Before you start to configure the NPort IA5150A/IA5250A via serial console, turn off the power and connect the serial cable from the NPort IA5150A/IA5250A to your computer's serial port.

1. Connect the NPort IA5150A/IA5250A's serial port 1 directly to your computer's male RS-232 serial port. From the Windows desktop click on Start → Programs → PComm Lite → Terminal Emulator.

2. When the PComm Terminal Emulator window opens, first click on the Port Manager menu item and select Open, or simply click on the Open icon.



- 3. The Property window opens automatically. From the Communication Parameter page, select the appropriate COM port for the connection, COM1 in this example, and 19200 for Baud Rate, 8 for Data Bits, None for Parity, and 1 for Stop Bits.
- 4. From the Property window's Terminal page, select ANSI or VT100 for Terminal Type and then click OK.

5. If you select Dumb Terminal as the terminal type, some of the console functions—especially the "Monitor" function—may not work properly.

Property 🔀
Communication Parameter Terminal File Transfer Capturing
COM Options
Ports : COM1 -
Baud Rate : 19200 -
Data Bits : 8
Parity : None 💌
Stop Bits : 1
Flow Control Output State RTS/CTS DTR I ON I OFF XON/XOFF RTS I ON I OFF
OK Cancel

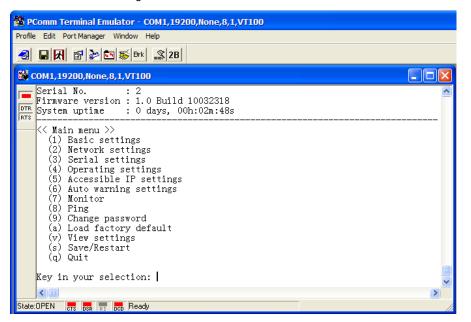
6. Press the "`` " key continuously and then power on the NPort IA5150A/IA5250A.

Esc F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12	Friet Scroll Paule Syste Lock Break	Num Caps Scroll Lock Lock Lock
Image: Control of the	Inset Kome Page Up Decke End Page - 1	Nom / · · 7cm * * · 7cm * * · 4 * * · 1 * · · 1 * · · 1 * · · 0 · · · 0 · · ·

- 7. NPort IA5150A/IA5250A will automatically switch from data mode to console mode as it receives a continuous string of "``".
- 8. Input the password when prompted. Note that this page will only appear when the NPort IA5150A/IA5250A has been set up for password protection.

🖥 PComm Terminal Emulator - COM1,19200,None,8,1,VT100	
Profile Edit Port Manager Window Help	
🐔 🖬 🕅 🎥 🔄 🐺 Brk 🔊 28	
COM1,19200,None,8,1,VT100	
Model name : NPort IA5450AI MAC address : 00:90:E8:12:34:57 Serial No. : 2 Firmware version : 1.0 Build 10032318 System uptime : 0 days, 00h:00m:02s Please keyin your password:********	~
	v
	>
State:OPEN CTS DSR RI DCD Ready	

9. Start configuring the IP address under Network Settings. Refer to step 4 in the Telnet Console section for the rest of the IP settings.



Choosing the Proper Operation Mode

In this chapter, we describe the NPort IA5150A/IA5250A various Toperation modes. The options include an operation mode that uses a driver installed on the host computer, and operation modes that rely on TCP/IP socket programming concepts. After choosing the proper operation mode in this chapter, refer to Chapter 5 for detailed configuration parameter definitions.

The following topics are covered in this chapter:

- Overview
- Real COM Mode
- RFC2217 Mode
- TCP Server Mode
- TCP Client Mode
- UDP Mode
- Pair Connection Mode
- Ethernet Modem Mode
- Reverse Telnet Mode
- Disabled Mode

Overview

NPort IA5150A/IA5250A serial device servers network-enable traditional RS-232/422/485 devices, in which a Serial Device Server is a tiny computer equipped with a CPU, real-time OS, and TCP/IP protocols that can bi-directionally translate data between the serial and Ethernet formats. Your computer can access, manage, and configure remote facilities and equipment over the Internet from anywhere in the world.

Traditional SCADA and data collection systems rely on serial ports (RS-232/422/485) to collect data from various kinds of instruments. Since the NPort IA5150A/IA5250A serial device servers network-enable instruments equipped with an RS-232/422/485 communication port, your SCADA and data collection system will be able to access all instruments connected to a standard TCP/IP network, regardless of whether the devices are used locally or at a remote site.

The NPort IA5150A/IA5250A is an external IP-based network device that allows you to expand the number of serial ports for a host computer on demand. As long as your host computer supports the TCP/IP protocol, you won't be limited by the host computer's bus limitation (such as ISA or PCI), or lack of drivers for various operating systems.

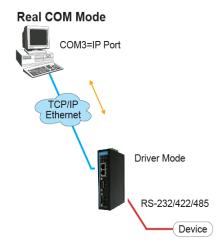
In addition to providing socket access, the NPort IA5150A/IA5250A also comes with a Real COM/TTY driver that transmits all serial signals intact. This means that your existing COM/TTY-based software can be preserved, without needing to invest in additional software.

Three different Socket Modes are available: TCP Server, TCP Client, and UDP Server/Client. The main difference between the TCP and UDP protocols is that TCP guarantees delivery of data by requiring the recipient to send an acknowledgement to the sender. UDP does not require this type of verification, making it possible to offer speedier delivery. UDP also allows unicast or multicast of data to only one IP or groups of IP addresses.

Real COM Mode

The NPort IA5150A/IA5250A comes equipped with COM drivers that work with Windows

95/98/ME/NT/2000/XP/2003/Vista/2008/7/XP x64/2003 x64/Vista x64/2008 x64/7 x64 systems, and also TTY drivers for Linux or Unix systems. The driver establishes a transparent connection between host and serial device by mapping the IP:Port of the NPort IA5150A/IA5250A's serial port to a local COM/TTY port on the host computer. Real COM Mode also supports up to eight simultaneous connections, so that multiple hosts can collect data from the same serial device at the same time.





ATTENTION

The driver used for Real COM Mode comes with the NPort IA5150A/IA5250A NPort Administrator. The driver is installed automatically on your computer when you install the NPort Administration Suite.

One of the major conveniences of using Real COM Mode is that Real COM Mode allows users to continue using RS-232/422/485 serial communications software that was written for pure serial communications applications. The driver intercepts data sent to the host's COM port, packs it into a TCP/IP packet, and then redirects it through the host's Ethernet card. At the other end of the connection, the NPort IA5150A/IA5250A accepts the Ethernet frame, unpacks the TCP/IP packet, and then transparently sends it to the appropriate serial device attached to one of the NPort IA5150A/IA5250A's serial ports.



ATTENTION

Real COM Mode allows several hosts to have access control over the same NPort IA5150A/IA5250A. The driver that comes with your NPort IA5150A/IA5250A controls host access to attached serial devices by checking the host's IP address. Refer to Accessible IP Settings in Chapter 5 for more details.

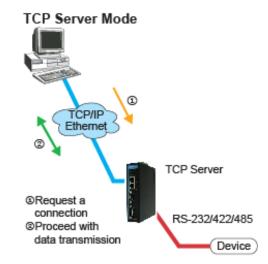
RFC2217 Mode

RFC2217 mode is similar to Real COM mode in that a driver is used to establish a transparent connection between a host computer and a serial device by mapping the serial port on the NPort IA5150A/IA5250A to a local COM port on the host computer. RFC2217 defines general COM port control options based on the Telnet protocol. Third party drivers supporting RFC2217 are widely available on the Internet and can be used to implement Virtual COM mapping to your NPort IA5150A/IA5250A serial port(s).

TCP Server Mode

In TCP Server mode, the NPort IA5150A/IA5250A is configured with a unique IP:Port address on a TCP/IP network. The NPort IA5150A/IA5250A waits passively to be contacted by the host computer, allowing the host computer to establish a connection with and get data from the serial device. This operation mode also supports up to eight simultaneous connections, so that multiple hosts can collect data from the same serial device—at the same time. As illustrated in the figure, data transmission proceeds as follows:

- The host requests a connection from the NPort IA5150A/IA5250A configured for TCP Server Mode.
- Once the connection is established, data can be transmitted in both directions—from the host to the NPort IA5150A/IA5250A, and from the NPort IA5150A/IA5250A to the host.



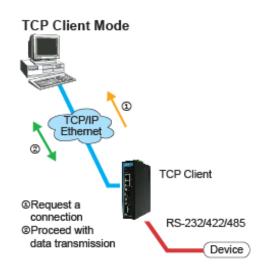
TCP Client Mode

In TCP Client mode, the NPort IA5150A/IA5250Acan actively establish a TCP connection to a pre-defined host computer when serial data arrives.

After the data has been transferred, the NPort can automatically disconnect from the host computer by using the **TCP alive check time** or **Inactivity time** settings. Refer to chapter 5 for more details.

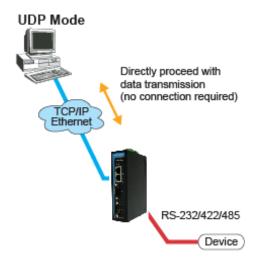
As illustrated in the figure, data transmission proceeds as follows:

- 1. The NPort IA5150A/IA5250A configured for TCP Client Mode requests a connection from the host.
- Once the connection is established, data can be transmitted in both directions—from the host to the NPort IA5150A/IA5250A, and from the NPort IA5150A/IA5250A to the host.



UDP Mode

Compared to TCP communication, UDP is faster and more efficient. In UDP mode, you can not only unicast but also multicast data from the serial device to multiple host computers, and the serial device can also receive data from multiple host computers, making this mode ideal for message display applications.



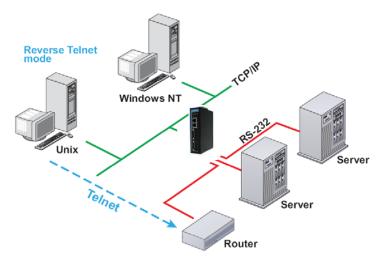
Pair Connection Mode

Pair Connection Mode employs two NPort IA5150A/IA5250A units in tandem, and can be used to remove the 15-meter distance limitation imposed by the RS-232 interface. One NPort IA5150A/IA5250A is connected from its RS-232 port to the COM port of a PC or other type of computer, such as a hand-held PDA, and the serial device is connected to the RS-232 port of the other NPort IA5150A/IA5250A. The two NPort IA5150A/IA5250A units are then connected to each other with a cross-over Ethernet cable, both are connected to the same LAN, or in a more advanced setup, they communicate with each other over a WAN (i.e., through one or more routers). Pair Connection Mode transparently transfers both data and modem control signals (although it cannot transmit the DCD signal) between the two NPort device servers.

Ethernet Modem Mode

Ethernet Modem Mode is designed for use with legacy operating systems, such as MS-DOS, that do not support TCP/IP Ethernet. By connecting one of the NPort IA5150A/IA5250A's serial port to the MS-DOS computer's serial port, it is possible to use legacy software originally designed to transmit data via modem, but now transmit the data over the Ethernet.

Reverse Telnet Mode



Console management is commonly used by connecting to Console/AUX or COM ports of routers, switches, and UPS units. Rtelnet works the same as RAW mode in that only one TCP port is listened to after booting up. The system then waits for a host on the network to initiate a connection. The difference is that the RAW mode does not provide the conversion function provided by Telnet. If the connected devices need to use the CR/LF conversion function when controlling, then users must choose Reverse Telnet mode.

Disabled Mode

When the Operation Mode for a particular port is set to Disabled, that port will be disabled.

Web Console Configuration

The Web Console is the most user-friendly method available to configure the NPort IA5150A/IA5250A. In this chapter, we will introduce the Web Console function groups and function definitions.

The following topics are covered in this chapter:

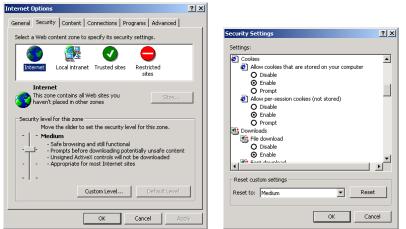
- Opening Your Browser
- Export/Import
- Basic Settings
- Network Settings
 - SNMP Settings
 - IP Address Report
- Serial Settings
 - Serial Parameters
- Operating Settings
 - ➤ Real COM Mode
 - ➢ RFC2217 Mode
 - ➤ TCP Server Mode
 - ➤ TCP Client Mode
 - ➤ UDP Mode
 - Pair Connection Mode
 - Ethernet Modem Mode
 - ➢ Reverse Telnet Mode
 - Disabled Mode
- Accessible IP Settings

Auto Warning Settings

- > Auto warning: Email and SNMP trap
- Event Type
- Upgrade Firmware
- Monitor
 - Monitor Line
 - Monitor Async
 - Monitor Async-Settings
 - Monitor Relay Output
- Change Password
- Load Factory Default
- Save/Restart

Opening Your Browser

1. Open your browser with the cookie function enabled. (To enable your browser for cookies, right click on your desktop Internet Explorer icon, select Properties, click on the Security tab, and then select either Enable or Prompt as shown in the figure below.)



- 2. Type 192.168.127.254 in the **Address** input box (if using an IP address that is different from the default, input that), and then press **Enter**.
- Input your password if prompted. The password will be transmitted with MD5 encryption over the Ethernet. Note: if the NPort IA5150A/IA5250A is not password protected, you will not be prompted to enter a password.

MO	ХЛ [®] То	otal Solution for Indu	ustrial Device Networking	www.moxa.com
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127.254 - 2	MAC Address - 00:90:E8:12:34:57 Firmware - 1.0 Build 10032318
		Password:	Login	



ATTENTION

If you use a web browser other than IE, remember to enable the "allow cookies that are stored on your computer" or "allow per-session cookies" functions.

The NPort IA5150A/IA5250A uses cookies only for the purpose of transmitting password..



ATTENTION

Refer to Chapter 3, **Initial IP Address Configuration**, to for detailed information on configuring the IP address. The examples shown in this chapter use the factory default IP address (192.168.127.254).

 The NPort IA5150A/IA5250A homepage will appear. There are two buttons on this page: Quick Setup and Export/Import. You can click Overview at any time to go back to this page. The following sections introduce these two convenient functions and the other settings listed in the Main Menu on the left of the page.





ATTENTION

If your password, the ONLY way to start configuring the NPort IA5150A/IA5250A is to load the factory defaults by using the "Reset to default" button located on the top of the NPort IA5150A/IA5250A. Remember to export the configuration files when you have finished the configuration. After using the "Reset to default" button to load the factory defaults, your configuration can be easily reloaded into the NPort IA5150A/IA5250A by using the Import function.



ATTENTION

If your NPort IA5150A/IA5250A application requires password protection, you must enable the cookie function in your browser. If the cookie function is disabled, you will not be allowed to enter the Web Console screen.

Quick Setup streamlines the configuration of your NPort into three basic and quick steps that cover commonly used settings. While in Quick Setup you may click the **Back** button at any time to return to the previous step, or the **Cancel** button to reverse all settings. For detailed information about the different settings, refer to the "Basic Settings," "Network Settings," "Serial Settings," and "Operating Settings," sections in this chapter.

 In Step 1/3, you must assign a valid IP address to the NPort IA5150A/IA5250A before the NPort can start operating within your network. Your network system administrator should provide you with an IP address and related settings for your network. In addition, the server name field is a useful way to specify the location or application of different NPort IA5150A/IA5250As.

	ΧΛ° Τα	otal Solution for Indu	ustrial Device Network	ing	W	ww.moxa.com
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127.254 - 2		MAC Addres Firmware	s - 00:90:E8:12:34:57 - 1.0 Build 10032318
		:∙St ep 1/3				
		Server Settings				
		Server name	NPIA5450AI_2			
		Network Settings				
		IP settings	Static 💌			
		IP address	192.168.127.254			
		Netmask	255.255.255.0			
		Gateway				

 In the Step 2/3, you must specify the operation mode you will be using. If your operation mode is not Real COM, TCP Server, TCP Client, or UDP mode, click Cancel and to go back to main menu and choose **Operating Settings** to select suitable settings.

M	OX	∧ °	Total Solution f	or Industr	ial Device	Networking		www.moxa.com
	Model Name	- NPort IA5450 - NPIA5450AI_		IP Serial NO.	- 192.168.1 - 2	27.254	MAC AdFirmwa	ldress - 00:90:E8:12:34:57 ire - 1.0 Build 10032318
			:•Step	2/3				
			Operation Mod	le Settings				
			Real COM PC communi	cate with ser	ial device thro	ugh COM port.		
			C TCP PC communi	cate with ser	ial device thro	ugh TCP port.		
			Device is					
			O UDP	n IP address				Port 4001
			PC communi Destination I	_	1al device thro	Port 400	1	
					Back	Next	Cance	el

3. In the Step 3/3, you can modify the serial settings.

M	IOX		Total Solution	for Industr	ial Device N	etworking		WV	w.moxa.com
-	Model Name	- NPort IA545 - NPIA5450AI		IP Serial NO.	- 192.168.127 - 2	.254	i	MAC Address Firmware	- 00:90:E8:12:34:57 - 1.0 Build 10032318
			:•Step	3/3					
			Serial Setting	IS					
			Baud rate Data bits		15200 🗸				
			Stop bits Parity	1 N	Ione 🗸				
			Interface	R	S-232 💌]			
					Back	Next		Cancel	

4. Review your settings on the **Finish Settings** page. If you are sure they are correct, then click the **Save/Restart** button to restart the device with these new settings.

MO		al Solution for Industr	ial Device Networking	www.moxa.com
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127.254 - 2	 MAC Address - 00:90:E8:12:34:57 Firmware - 1.0 Build 10032318
		⊹ Finish Se	ttings	
			een saved. Please check that tes to take effect or click Ba	t your settings in the following and click ick to modify it.
		Server name	NPIA5450AI 2	
		Network Settings		
		IP settings	Static	
		IP	192.168.127.254	
		Netmask	255.255.255.0	
		Gateway		
		Operation Mode Settings	3	
		Mode	RealCOM	
		Parameters		
		Serial Settings		
		Baudrate	115200	
		Parameters	Data bits: 8, Stop bits: 1,	Parity: None
		Interface	RS-232	

Note: If your IP address changes, you will not be able to return to the Home Page with the Home button.



Export/Import

Export/Import allows you to back up and recover your settings.

Click **Export**, to store all configuration data into a default file, **<Servername>.txt**. Click the **Import** button to upload a configuration file to the NPort IA5150A/IA5250A.



Basic Settings

MOX	∧ ® Tot	tal Solution for Industrial Device Networking				www.moxa.cor		
	NPort IA5450AI NPIA5450AI_2	IPSerial NO.	- 192.168. - 2	127.254	1	MAC Address Firmware	- 00:90:E8:12:34:57 - 1.0 Build 10032318	
		-Basic Se	ttings					
- Main Menu		Server Settings						
Overview Quick Setup Export/Import		Server name	NPIA5450AI_	2				
Basic Settings Network Settings		Time Settings						
- Serial Settings - Operating Settings		Time zone Time	(GMT)Greenv	vich Mean Time:		dinburgh, Lisb	on, London 💌 Modify	
Accessible IP Settings - Auto Warning Settings		Time server						
Upgrade Firmware - Monitor		Console Settings						
Change Password		Web console	Enable	ODisable				
Load Factory Default Save/Restart		Telnet console Reset button protect	Enable No	O Disable O Yes				
			Submit					

Server name

Setting	Factory Default	Necessity
1 to 39 characters	NP[model name]_[Serial No.]	Optional

Web/Telnet Console

The **Disable** option for "Web console" and "Telnet console" is included for security reasons. In some cases, you may want to disable one or both of these console utilities as an extra precaution to prevent unauthorized users from accessing your NPort IA5150A/IA5250A. The factory default for both "Web console" and "Telnet console is **Enable**.

Web console

Setting	Factory Default	Necessity
Enable or Disable	Enable	Required

Telnet console

Setting	Factory Default	Necessity
Enable or Disable	Enable	Required



ATTENTION

If you disable both the "Web console" and "Telnet console," you can still use the NPort Administrator to configure the NPort IA5150A/IA5250A device servers either locally or remotely over the network. Refer to Chapter 6 for more details.

Reset button protect						
Setting	Factory Default	Necessity				
No or Yes	None	Optional				

NOTE: Select Yes to allow limited use of the Reset Button, this means that the "Reset to default" button only works within a 60 seconds time frame. I.e., within 60 seconds after booting up, after which the "Reset to default" button will be automatically disabled and will no longer work.

Network Settings

MOX	Tot	otal Solution for Industrial Device Networking			www.moxa.cor			
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127.254 - 2	ł	MAC Address Firmware	- 00:90:E8:12:34:57 - 1.0 Build 10032318		
- Main Menu		Gateway IP configuration DNS server 1	Static V					
Overview Quick Setup Export/Import Basic Settings		DNS server 2 SNMP Settings						
Network Settings - Serial Settings - Operating Settings Accessible IP Setting - Auto Warning Setting Upgrade Firmware - Monitor		SNMP Community name Contact Location	Enable Disable public					
Change Password Load Factory Default Save/Restart		Auto report to IP Auto report to UDP port Auto report period	4002 10 seconds					

You must assign a valid IP address to the NPort IA5150A/IA5250A before the NPort can start operating within your network. Your network system administrator should provide you with an IP address and related settings for your network. The IP address must be unique within the network (otherwise the NPort IA5150A/IA5250A will not have a valid connection to the network). First time users may refer to Chapter 3, **Initial IP Address Configuration**, for more information.

You can choose from four possible **IP Configuration** modes—**Static**, **DHCP**, **DHCP**/**BOOTP**, and **BOOTP**—located under the web console screen's IP configuration drop-down box.

Method	Function Definition
Static	User definable IP address, Netmask, and Gateway.
DHCP	DHCP server assigned IP address, Netmask, Gateway, DNS, and Time Server
DHCP/BOOTP	DHCP server assigned IP address, Netmask, Gateway, DNS, and Time Server, or BOOTP server assigned IP address (if the DHCP server does not respond)
BOOTP	BOOTP server assigned IP address

IP configuration

IP address

Setting	Factory Default	Necessity
E.g., 192.168.1.1 (IP	192.168.127.254	Required
addresses in the form		
x.x.x.0 and x.x.x.255		
are invalid.)		

An IP address is a number assigned to a network device (such as a computer), which works as a permanent address on the network. Computers use IP addresses to identify and talk to each other over the network. Choose a proper IP address that is unique and valid in your network environment.

Netmask

Setting	Factory Default	Necessity
E.g., 255.255.255.0	255.255.255.0	Required

A subnet mask represents all the network hosts at one geographic location, such as all the hosts in a building or on the same local area network. When a packet is sent out over the network, the NPort IA5150A/IA5250A will use the subnet mask to check whether the desired TCP/IP host specified in the packet is on the local network segment. If the address is on the same network segment as the NPort IA5150A/IA5250A, a connection is established directly from the NPort IA5150A/IA5250A. Otherwise, the connection will be established through the given default gateway.

Gateway

Setting	Factory Default	Necessity
E.g., 192.168.1.1	None	Optional

A network gateway acts as an entrance to another network. Usually, the computers that control the traffic within the network or at the local Internet service provider are gateway nodes. The NPort IA5150A/IA5250A needs to know the IP address of the default gateway computer in order to communicate with hosts outside the local network environment. To obtain correct gateway IP address information, consult your network administrator.

IP configuration

Setting	Factory Default	Necessity
Static, DHCP,	Static	Required
DHCP/BOOTP, BOOTP		



ATTENTION

In Dynamic IP environments, the firmware will retry every 30 seconds, up to three times, until network settings are assigned by the DHCP or BOOTP server. The timeout for each try increases from one second, to three seconds, then to give seconds.

If the DHCP/BOOTP server is unavailable, the firmware will use the default IP address (192.168.127.254), metmask, and gateway as IP settings.

DNS server 1/DNS server 2		
Setting	Factory Default	Necessity
E.g., 192.168.1.1	None	Optional
(IP addresses in the		
form of x.x.x.0 and		
x.x.x.255 are invalid.)		

When a user wishes to visit a website, the computer will request a Domain Name System (DNS) server for the website's correct IP address, and then the computer uses the response to connect to the web server. DNS is how Internet domain names are identified and translated into IP addresses. A domain name is an alphanumeric name, such as moxa.com, which makes it easier for people to remember. A DNS server is a host that translates this kind of text-based domain name into numeric IP address to be used for establishing a TCP/IP connection.

In order to use the NPort IA5150A/IA5250A's DNS feature, you need to configure the DNS server. Doing so allows the NPort IA5150A/IA5250A to use a host's domain name to access the host. The NPort IA5150A/IA5250A provides DNS server 1 and DNS server 2 configuration items to configure the IP address of the DNS server; DNS Server 2 is included for use when DNS sever 1 is unavailable.

The NPort IA5150A/IA5250A acts as a DNS client by actively querying the DNS server for the IP address that is associated with a particular domain name. NPort IA5150A/IA5250A functions that support domain name are **Time server**, **Destination IP Address in TCP Client mode**, **Mail Server**, **SNMP trap server**, and **Auto report to IP**.

SNMP Settings

Community name

Setting	Factory Default	Necessity
1 to 39 characters	public	Optional

A community name is a plain-text password mechanism that is used to weakly authenticate queries to agents of managed network devices.

Contact

Setting	Factory Default	Necessity
1 to 39 characters	None	Optional
(E.g., Support,		
886-89191230 #300)		

The SNMP contact information usually includes an emergency contact name and telephone or pager number.

Location

Setting	Factory Default	Necessity
1 to 39 characters	None	Optional
(E.g., Floor 1, office 2)		

Specifies the location string of SNMP agents, such as the NPort IA5150A/IA5250A. This string is usually set to the street address where the NPort IA5150A/IA5250A is physically located.

IP Address Report

When NPort IA5150A/IA5250A products are used in a dynamic IP environment, users need to spend more time with IP management tasks. For example, if the NPort IA5150A/IA5250A works as a server (TCP or UDP), then the host, which acts as a client, must know the IP address of the server. If the DHCP server assigns a new IP address to the NPort IA5150A/IA5250A, the host needs a way to determine the NPort IA5150A/IA5250A's new IP address.

NPort IA5150A/IA5250A products help out by periodically reporting their IP addresses to the IP location server in case the dynamic IP has changed. The parameters shown below are used to configure the Auto IP Report function. There are two ways to develop an "Auto IP report server" to receive the NPort IA5150A/IA5250A's Auto IP report.

- 1. Use the NPort Administrator's IP Address Report function.
- Use "Auto IP report protocol", which can automatically receive the Auto IP report on a regular basis. It can
 also be used to help you develop your own software. Refer to Appendix E for the "Auto IP report protocol".

Auto report to IP

Setting	Factory Default	Necessity
E.g., 192.168.1.1 or	None	Optional
URL		
(IP addresses in the		
form of x.x.x.0 and		
x.x.x.255 are invalid.)		

Reports generated by the Auto report function will be automatically sent to this IP address.

Auto report to TCP port

Setting	Factory Default	Necessity
E.g., 4001	4002	Optional

Auto report period

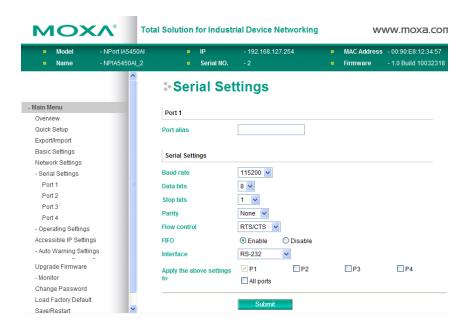
Setting	Factory Default	Necessity
Time interval (in	10	Optional
seconds)		

Serial Settings

Click Serial Settings, located under Main Menu, to display the serial port settings.

ΜΟΧΛ [®]			otal Solution for Industrial Device Networking				www.moxa.com			
Model	- NPort IA5450	AI	= IP	_	192.168.12	7.254		MAC Addres	ss - 00:90:E	8:12:34:57
Name	- NPIA5450AI_		Seria	al NO. –				Firmware	- 1.0 Buil	d 10032318
			- Serial	Setti	ngs					
Main Menu		Port	Alias	Baud rate	Data bits	Stop bits	Parity	FIFO	Flow ctrl	Interface
Overview		1		115200	8	1	None	Enable	RTS/CTS	RS-232
Quick Setup		2		115200	8	1	None	Enable	RTS/CTS	RS-232
Export/Import		3		115200	8	1	None	Enable	RTS/CTS	RS-232
Basic Settings		4		115200	8	1	None	Enable	RTS/CTS	RS-232
Network Settings										
- Serial Settings										
Port 1										
Port 2										
Port 3										
Port 4										

To modify the serial settings for a specific port, click Port X (X=1 or 2) under Serial Settings.



Port alias

Setting	Factory Default	Necessity
1 to 15 characters	None	Optional
(E.g., PLC-No.1)		

"Port alias" is included to allow easy identification of the serial devices that are connected to the NPort IA5150A/IA5250A's serial ports.

Serial Parameters



ATTENTION

Check the serial communication parameters in your Serial Device's user's manual. You should set up the NPort IA5150A/IA5250A's serial parameters with the same communication parameters being used by your serial devices.

Baudrate

Setting	Factory Default	Necessity
50 bps to 921.6 Kbps	115.2 Kbps	Required

Data bits

Setting	Factory Default	Necessity
5, 6, 7, 8	8	Required

When a user sets the Data bits to 5 bits, the Stop bits setting will automatically change to 1.5 bits.

Stop bits

Setting	Factory Default	Necessity
1, 1.5, 2	1	Required

Stop bits will be set to 1.5 when the Data bits is set to 5 bits.

Parity

Setting	Factory Default	Necessity
None, Even, Odd,	None	Required
Space, Mark		

Flow control

Setting	Factory Default	Necessity
None, RTS/CTS,	RTS/CTS	Required
DTR/DSR, Xon/Xoff		

FIFO

Setting	Factory Default	Necessity
Enable, Disable	Enable	Required

The NPort IA5150A/IA5250A's serial ports provide a 16-byte FIFO in the Tx and Rx directions. To prevent unexpected communication, disable the FIFO setting if your serial device does not offer FIFO.

Interface

Setting	Factory Default	Necessity
RS-232/422/485	RS-232 (NPort 5110A/5150A)	Required
	RS-422 (NPort 5130A)	

Operating Settings

MOXA® Total Solution for Industrial Device Netwo		orking WWW.MOXa		noxa.co			
	- NPort IA5450AI - NPIA5450AI_2	■ IP ■ Seria	- 192 Il NO 2	2.168.127.254	1	MAC Address - 00:90 Firmware - 1.0 B):E8:12:34:57 uild 1003231
		:•Opera	tion M	odes			
Main Menu Overview Quick Setup	P	ort Operating Mode	Packing Length	Delimiter 1	Delimiter 2	Delimiter Process	Force Transmit
Export/Import Basic Settings	1	RealCOM	0 TCP alive che Max connectio		00 (Disable)	Do Nothing	0
Network Settings - Serial Settings - Operating Settings	⊒ 2	RealCOM	0 TCP alive che Max connectio		00 (Disable)	Do Nothing	0
Port 1 Port 2 Port 3	3	RealCOM	0 TCP alive che Max connectio		00 (Disable)	Do Nothing	0
Port 4 Accessible IP Settings - Auto Warning Settings	4	RealCOM	0 TCP alive che Max connectio		00 (Disable)	Do Nothing	0

Click **Operating Settings**, under **Main Menu**, to display the operating settings of the NPort IA5150A/IA5250A's serial ports.

Real COM Mode

MOX	∧° то	otal Solution for Indust	rial Device Networkin	g \	www.moxa.co
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127.254 - 2	MAC AddreFirmware	ss - 00:90:E8:12:34:57 - 1.0 Build 1003231
	^	:•Operatio	n Modes		
- Main Menu		Port 1			
Overview		POIT 1			
Quick Setup		Operation mode	RealCOM 🗸		
Export/Import		TCP alive check time	7 (0 - 99 min)		
Basic Settings		Max connection	1 -		
Network Settings					
- Serial Settings		Ignore jammed IP	● No ○ Yes		
- Operating Settings		Allow driver control	● No ○ Yes		
Port 1					
Port 2		Data Packing			
Port 3					
Port 4		Packing length	0 (0 - 1024)		
Accessible IP Settings		Delimiter 1	00 (Hex) 🗌 Enable		
- Auto Warning Settings	3	Delimiter 2	00 (Hex) Enable		
Port 4 Accessible IP Settings		Delimiter process	Do Nothing 🗸 (Process	ed only when packing I	length is 0)
- Auto Warning Settings	2	Force transmit	0 (0 - 65535 ms)		2 ,
Upgrade Firmware	, ,				
- Monitor		Apply the above settings to	✓ P1 P2	P3	P4
Change Password		10	All ports		
Load Factory Default					
Save/Restart	~		Submit		

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Optional

0 min: TCP connection is not closed due to an idle TCP connection.

1 to 99 min: the NPort IA5150A/IA5250A will automatically close the TCP connection if there is no TCP activity during this given time. After the connection has closed, the NPort IA5150A/IA5250A will start "listening" for another Real COM driver connection from another host.

Max connection

Setting	Factory Default	Necessity
1, 2, 3, 4, 5, 6, 7, 8	1	Required

Max connection is usually used when the user needs to receive data from different hosts simultaneously. The factory default is 1, this means that only one specific host can access this NPort IA5150A/IA5250A, and the Real COM driver on that host will have full control over the port.

Max Connection 1:

Only a single host's Real COM driver can access the specific NPort IA5150A/IA5250A serial port.

Max Connection 2 to 8:

Allows two to eight host's Real COM drivers to access the specific NPort IA5150A/IA5250A serial port at the same time. When multiple hosts' Real COM drivers access the serial port at the same time, the COM driver only provides pure data tunneling without control ability. This means that the serial port will use the parameter of the firmware's settings and not those of your application program (AP).

Application software that is based on the COM driver will receive a driver response of "success" when the software uses any of the Win32 API functions. The firmware will only send the data back to the driver on the host.

Data will be sent first-in-first-out when the data is received by the NPort IA5150A/IA5250A from the Ethernet interface.



ATTENTION

When "Max connection" is set greater than 1, this means that the NPort IA5150A/IA5250A will be using a "multi connection application" (i.e., up to eight hosts are allowed access to the port at the same time). When using a multi connection application, the NPort IA5150A/IA5250A will use the serial communication parameters set in the console. All of the hosts connected to that port must use the same serial settings. If one of the hosts opens the COM port with parameters that are different from the NPort IA5150A/IA5250A's console setting, data communication may not transmit properly.

Ignore jammed IP

Setting	Factory Default	Necessity
No or Yes	No	Optional

If you select "No" when Max connections is > 1 and the serial device is transmitting data, in the event one of the connected hosts is not responding, the second group of data will not be sent until all the data from the first group has been successfully transmitted. If you select "Yes" for "Ignore jammed IP," hosts that are not responding will be ignored, but the data will still be transmitted to all the other hosts.

Allow driver control

Setting	Factory Default	Necessity
No or Yes	No	Optional

If "Max connection" is greater than 1, NPort will ignore the driver control commands from all connected hosts. However, if you set "Allow driver control" to "Yes," control commands will be accepted. Note: Since the NPort IA5150A/IA5250A may get configuration changes from multiple hosts, the most recent command it receives will take precedence.

Packing length

Setting	Factory Default	Necessity
0 to 1024	0	Optional

Default = 0, The Delimiter Process will be followed, regardless of the length of the data packet. If the data length (in bytes) matches the configured value, the data will be forced out. The data length can be configured for 0 to 1024 bytes. Set to 0 if you do not need to limit the length.

Delimiter 1

Setting	Factory Default	Necessity
00 to FF (hex)	None	Optional

Delimiter 2

Setting	Factory Default	Necessity
00 to FF (hex)	None	Optional

Once the NPort IA5150A/IA5250A receives both delimiters through its serial port, it immediately packs all data currently in its buffer and sends it to the NPort IA5150A/IA5250A's Ethernet port.



ATTENTION

Delimiter 2 is optional. If left blank, then Delimiter 1 alone trips the clearing of the buffer. If the size of the serial data received is greater than 1 KB, the NPort IA5150A/IA5250A will automatically pack the data and send it to its Ethernet port. However, to use the delimiter function, you must at least enable Delimiter 1. If Delimiter 1 is left blank and Delimiter 2 is enabled, the delimiter function will not work properly.

Delimiter p	process
-------------	---------

Setting	Factory Default	Necessity
Do nothing, Delimiter +	Do Nothing	Optional
1, Delimiter + 2, Strip		
Delimiter		

[Delimiter + 1] or [Delimiter + 2]: The data will be transmitted when an additional byte (for Delimiter +1), or an additional 2 bytes (for Delimiter +2) of data is received after receiving the Delimiter.

[Strip Delimiter]: When the Delimiter is received, the Delimiter is deleted (i.e., stripped), and the remaining data will be transmitted.

[Do nothing]: The data will be transmitted when the Delimiter is received.

Force transmit

Setting	Factory Default	Necessity
0 to 65535 ms	0 ms	Optional

0: Disable the force transmit timeout.

1 to 65535: Forces the NPort IA5150A/IA5250A's TCP/IP protocol software to try to pack serial data received during the specified time into the same data frame.

This parameter defines the time interval during which the NPort IA5150A/IA5250A fetches the serial data from its internal buffer. If data is incoming through the serial port, the NPort IA5150A/IA5250A stores the data in its internal buffer. The NPort IA5150A/IA5250A transmits the data stored in the buffer via TCP/IP, but only if the internal buffer is full or if the Force transmit time interval reaches the time specified under the Force transmit timeout.

The ideal Force transmit timeout depends on your application, but it must be at least larger than a single character interval within the specified baudrate. For example, assume that the serial port is set to 1200 bps, 8 data bits, 1 stop bit, and no parity. In this case, the total number of bits needed to send a character is 10 bits, and the time required to transfer one character is

(10 (bits) / 1200 (bits/s)) * 1000 (ms/s) = 8.3 ms.

Therefore, you should set the Force transmit timeout to be larger than 8.3 ms, so in this case, it must be greater than or equal to 10 ms.

If a user wants to send a series of characters in the same packet, the serial device attached to the NPort IA5150A/IA5250A should send that series of characters during a time interval that is less than the Force transmit timeout of the NPort IA5150A/IA5250A, and the total length of data must be less than or equal to the NPort IA5150A/IA5250A's internal buffer size. The serial communication buffer size for the NPort IA5150A/IA5250A is 1 KB per port.

RFC2217 Mode

MOX	Tot	al Solution for Indu	strial Device Netwo	orking	W	ww.moxa.co
ModelName	- NPort IA5450AI - NPIA5450AI_10	IPSerial NO.	- 192.168.127.254 - 10		MAC Addre Firmware	ess - 00:90:E8:19:28:88 - 1.0 Build 1005060
	<u> </u>	Port 1				
		Operation mode	RealCOM	~		
- Main Menu		TCP alive check time	7 (0 - 99 min)			
Overview		Max connection	1 🗸			
Quick Setup		Ignore jammed IP	No ○Yes			
Export/Import						
Basic Settings		Allow driver control	● No ○ Yes			
Network Settings						
- Serial Settings	=	Data Packing				
- Operating Settings	=	Packing length	0 (0 - 1024)			
Port 1			(0 1021)			
Port 2		Delimiter 1	00 (Hex) Enable			
Port 3		Delimiter 2	00 (Hex) 🗌 Enable			
Port 4		Delimiter process	Do Nothing 🛛 🗸 (Proc	essed or	nly when pacl	king length is 0)
Accessible IP Setting	JS	Force transmit	0 (0 - 65535 ms			
- Auto Warning Settin	igs		(0 00000 mil	<i>•</i>)	_	_
Upgrade Firmware		Apply the above	✓ P1		P3	P4
- Monitor		settings to	All ports			
Change Password						
Load Factory Default	~		Submit			

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Optional

0 min: TCP connection is not closed due to an idle TCP connection.

1 to 99 min: The NPort IA5150A/IA5250A automatically close the TCP connection if there is no TCP activity during this given time. After the connection has closed, the NPort IA5150A/IA5250A will start "listening" for another host's TCP connection.

Local TCP port

Setting	Factory Default	Necessity
1 to 65535	4001	Required

The "Local TCP port" is the TCP port that the NPort IA5150A/IA5250A uses to listen to connections, and that other devices must use to contact the NPort IA5150A/IA5250A. To avoid conflicts with well known TCP ports, the default is set to 4001.

Packing length

Setting	Factory Default	Necessity
0 to 1024	0	Optional

Default = 0: The Delimiter Process will be followed, regardless of the length of the data packet. If the data length (in bytes) matches the configured value, the data will be forced out. The data length can be configured for 0 to 1024 bytes. Set to 0 if you do not need to limit the length.

Delimiter 1

Setting	Factory Default	Necessity
00 to FF	None	Optional

Delimiter 2

Setting	Factory Default	Necessity
00 to FF	None	Optional

Once the NPort IA5150A/IA5250A receives both delimiters through its serial port, it immediately packs all data currently in its buffer and sends it out the NPort IA5150A/IA5250A's Ethernet port.

Delimiter process

Setting	Factory Default	Necessity
Do Nothing,	Do Nothing	Optional
Delimiter + 1,		
Delimiter + 2,		
Strip Delimiter		

[Delimiter + 1] or [Delimiter + 2]: The data will be transmitted when an additional byte (for Delimiter +1), or an additional 2 bytes (for Delimiter +2) of data is received after receiving the Delimiter.

[Strip Delimiter]: When the Delimiter is received, the Delimiter is deleted (i.e., stripped), and the remaining data is transmitted.

[Do Nothing]: The data will be transmitted when the Delimiter is received.

Force transmit

Setting	Factory Default	Necessity
0 to 65535 ms	0 ms	Optional

0: Disable the force transmit timeout.

1 to 65535: Forces the NPort IA5150A/IA5250A's TCP/IP protocol software to try to pack serial data received during the specified time into the same data frame.

This parameter defines the time interval during which the NPort IA5150A/IA5250A fetches the serial data from its internal buffer. If data is incoming through the serial port, the NPort IA5150A/IA5250A stores the data in its internal buffer. The NPort IA5150A/IA5250A transmits the data stored in the buffer via TCP/IP, but only if the internal buffer is full or if the Force transmit time interval reaches the time specified under the Force transmit timeout.

The ideal Force transmit timeout depends on your application, but it must be at least larger than a single character interval within the specified baudrate. For example, assume that the serial port is set to 1200 bps, 8 data bits, 1 stop bit, and no parity. In this case, the total number of bits needed to send a character is 10 bits, and the time required to transfer one character is

(10 (bits) / 1200 (bits/s)) * 1000 (ms/s) = 8.3 ms.

Therefore, you should set the Force transmit timeout to a value larger than 8.3 ms, so in this case, it must be greater than or equal to 10 ms.

If a user wants to send a series of characters in the same packet, the serial device attached to the NPort IA5150A/IA5250A should send that series of characters during a time interval that is less than the Force transmit timeout for the NPort IA5150A/IA5250A, and the total length of data must be less than or equal to the NPort IA5150A/IA5250A's internal buffer size. The serial communication buffer size for the NPort IA5150A/IA5250A is 1 KB per port.

TCP Server Mode

Model Name	- NPort IA5450AI - NPIA5450AI_10	IPSerial NO.	- 192.168.127.253 - 10	ł	MAC Address Firmware	- 00:90:E8:19:2 - 1.0 Build 100
ain Menu Dverview Aulck Setup Xxport/Import asic Settings Serial Settings Operating Settings Port 1 Port 2 Port 3 Port 4 Auto Warning Setting Auto Warning Setting		Port 1 Operation mode TCP alive check time Inactivity time Max connection Ignore jammed IP Allow driver control Local TCP port Command port	TCP Server Image: Constraint of the server 7 (0 - 99 min) 0 (0 - 65535 ms) 1 Image: Constraint of the server Image: No Yes Image: No Yes			
Jpgrade Firmware Monitor Change Password .oad Factory Default Bave/Restart	~	Packing length Delimiter 1 Delimiter 2 Delimiter process Force transmit Apply the above settings to	0 0 - 1024) 0 (Hex) Enable 0 (Hex) Enable Do Nothing (Process 0 (0 - 65535 ms) V P1 P2 All ports	sed or	lly when packin P3	g length is 0)

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Optional

0 min: TCP connection is not closed due to an idle TCP connection.

1 to 99 min: The NPort IA5150A/IA5250A will automatically close the TCP connection if there is no TCP activity during this given time. After the connection has closed, the NPort IA5150A/IA5250A will start "listening" for another host's TCP connection.

Inactivity time

Setting	Factory Default	Necessity
0 to 65535 ms	0 ms	Optional

0 ms: TCP connection is not closed due to an idle serial line.

0-65535 ms: The NPort IA5150A/IA5250A automatically closes the TCP connection if there is no serial data activity during this given time. After the connection has closed, the NPort IA5150A/IA5250A will start "listening" for another host's TCP connection.

This parameter defines the maintenance status as Closed or Listen for the TCP connection. The connection is closed if there is no incoming or outgoing data through the serial port during the specific Inactivity time.

If the Inactivity time is set to 0, the current TCP connection is kept active until a connection close request is received. Although Inactivity time is disabled, the NPort IA5150A/IA5250A will check the connection status between the NPort IA5150A/IA5250A and remote host by sending "keep alive" packets periodically. If the remote host does not respond to the packet, the NPort IA5150A/IA5250A assumes that the connection was closed unintentionally, the NPort IA5150A/IA5250A will then force the existing TCP connection to close.



ATTENTION

The Inactivity time should be larger than that of the Force transmit timeout. To prevent unintended data loss due to session disconnection, it is highly recommended that this value is set large enough so that the intended data transfer can be completed.

Max connection

Setting	Factory Default	Necessity
1, 2, 3, 4, 5, 6, 7, 8	1	Required

Max connection is usually used when the user needs to receive data from different hosts simultaneously. The factory default only allows 1 connection at a time.

Max connection 1:

NPort only allows 1 host to open the TCP connection to the specific serial port.

Max connection 2 to 8:

Allows two to eight host's TCP connection request to open this NPort IA5150A/IA5250A serial port, at the same time. When multiple hosts establish a TCP connection to the specific serial port at the same time, NPort IA5150A/IA5250A will duplicate the serial data and transmit it to all of the hosts. Ethernet data will be sent on a first-in-first-out basis to the serial port when the data is received by the NPort IA5150A/IA5250A from the Ethernet interface.

Ignore jammed IP

Setting	Factory Default	Necessity
No or Yes	No	Optional

If you select "No" when Max connections is > 1 and the serial device is transmitting data, in the event one of the connected hosts is not responding, the second group of data will not be sent until all the data from the first group has been successfully transmitted. If you select "Yes" for "Ignore jammed IP," hosts that are not responding will be ignored, but the data will still be transmitted to all the other hosts.

Allow driver control

Setting	Factory Default	Necessity	
No or Yes	No	Optional	

If "Max connection" is greater than 1, the NPort will ignore driver control commands from all connected hosts. However, if you set "Allow driver control" to YES, control commands will be accepted. Note: Since the NPort IA5150A/IA5250A may get configuration changes from multiple hosts, the most recent command received will take precedence.

Packing length

Setting	Factory Default	Necessity
0 to 1024	0	Optional

Default = 0, The Delimiter Process will be followed, regardless of the length of the data packet. If the data length (in bytes) matches the configured value, the data will be forced out. The data length can be configured for 0 to 1024 bytes. Set to 0 if you do not need to limit the length.

Delimiter 1

Setting	Factory Default	Necessity
00 to FF	None	Optional

Delimiter 2

Setting	Factory Default	Necessity
00 to FF	None	Optional

Once the NPort IA5150A/IA5250A receives both delimiters through its serial port, it immediately packs all data currently in its buffer and sends it to the NPort IA5150A/IA5250A's Ethernet port.



ATTENTION

Delimiter 2 is optional. If left blank, then Delimiter 1 alone trips the clearing of the buffer. If the size of the serial data received is greater than 1 KB, the NPort IA5150A/IA5250A will automatically pack the data and send it to the Ethernet. However, to use the delimiter function, you must at least enable Delimiter 1. If Delimiter 1 is left blank and Delimiter 2 is enabled, the delimiter function will not work properly.

Delimiter process

Setting	Factory Default	Necessity	
Do Nothing,	Do Nothing	Optional	
Delimiter + 1,			
Delimiter + 2,			
Strip Delimiter			

[Delimiter + 1] or [Delimiter + 2]: The data will be transmitted when an additional byte (for Delimiter +1), or an additional 2 bytes (for Delimiter +2) of data is received after receiving the Delimiter.

[Strip Delimiter]: When the Delimiter is received, the Delimiter is deleted (i.e., stripped), and the remaining data will be transmitted.

[Do Nothing]: The data will be transmitted when the Delimiter is received.

Force transmit

Setting	Factory Default	Necessity
0 to 65535 ms	0 ms	Optional

0: Disable the force transmit timeout.

1 to 65535: Forces the NPort IA5150A/IA5250A's TCP/IP protocol software to try to pack serial data received during the specified time into the same data frame.

This parameter defines the time interval during which the NPort IA5150A/IA5250A fetches the serial data from its internal buffer. If data is incoming through the serial port, the NPort IA5150A/IA5250A stores the data in the internal buffer. TheNPort IA5150A/IA5250A transmits data stored in the buffer via TCP/IP, but only if the internal buffer is full or if the Force transmit time interval reaches the time specified under Force transmit timeout.

The ideal Force transmit timeout depends on your application, but it must be at least larger than a single character interval within the specified baudrate. For example, assume that the serial port is set to 1200 bps, 8 data bits, 1 stop bit, and no parity. In this case, the total number of bits needed to send a character is 10 bits, and the time required to transfer one character is

(10 (bits) / 1200 (bits/s)) * 1000 (ms/s) = 8.3 ms.

Therefore, you should set Force transmit timeout to be larger than 8.3 ms, so in this case, it must be greater than or equal to 10 ms.

If the user wants to send a series of characters in the same packet, the serial device attached to the NPort IA5150A/IA5250A should send that series of characters during a time interval that is less than the Force transmit timeout for the NPort IA5150A/IA5250A, and the total length of data must be less than or equal to the NPort IA5150A/IA5250A's internal buffer size. The serial communication buffer size for NPort IA5150A/IA5250A is 1 KB per port.

Local TCP port

Setting	Factory Default	Necessity	
1 to 65535	4001	Required	

The "Local TCP port" is the TCP port that the NPort IA5150A/IA5250A uses to listen to connections, and that other devices must use to contact the NPort IA5150A/IA5250A. To avoid conflicts with well known TCP ports, the default is set to 4001.

Command port

Setting	Factory Default	Necessity
1 to 65535	966	Optional

The "Command port" is a listening TCP port that received IP-Serial Lib commands from the host. In order to prevent a TCP port conflict with other applications, the user can set the Command port to another port as needed. IP-Serial Lib will automatically check the Command Port on the NPort IA5150A/IA5250A so that users do not need to configure the program.

TCP Client Mode

Model - I	NPort IA5450AI	= IP	- 192.168.127.253		MAC Addre	ss-00:90:E8:19:28:8
Name - I	NPIA5450AI_10	Serial NO.			Firmware	- 1.0 Build 100500
			Madaa			
Main Menu		:•Operation	on modes			
Overview						
Quick Setup		Port 1				
Export/Import		Operation mode	TCP Client 🗸	1		
Basic Settings		TCP alive check time	7 (0 - 99 min)	9		
Network Settings			. (0 33 mm)			
- Serial Settings		Inactivity time	0 (0 - 65535 ms)			
- Operating Settings		Ignore jammed IP	⊙No ○Yes			
Port 1		Destination IP address 1				Port 4001
Port 2		Destination IP				0.1001
Port 3		address 2				Port 4001
Port 4		Destination IP address 3				Port 4001
Accessible IP Settings		Destination IP				Port 4001
- Auto Warning Settings		address 4				Poil 4001
Upgrade Firmware		Designated local port 1	5011			
- Monitor		Designated local port	5012			
Change Password		2	5012			
Load Factory Default		Designated local port 3	5013			
Save/Restart		Designated local port	5014			
	<u>×</u>	4	5014			
		Connection control	Startup/None	*		
	=					
		Data Packing				
		Packing length	0 (0 - 1024)			
		Delimiter 1	00 (Hex) Enable			
		Delimiter 2	00 (Hex) Enable			
		Delimiter process	Do Nothing 🛛 🖌 (Proces	sed on	ly when pack	ing length is 0)
		Force transmit	0 (0 - 65535 ms)			
		A such that a basis	✓ P1 P2		P3	P4
	-	Apply the above settings to			LIL2	LU F 4
		-	All ports			

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Optional

0 min: TCP connection is not closed due to an idle TCP connection.

1 to 99 min: The NPort IA5150A/IA5250A automatically closes the TCP connection if there is no TCP activity during this given time.

Inactivity time

Setting	Factory Default	Necessity
0 to 65535 ms	0 ms	Optional

0 ms: TCP connection is not closed due to an idle serial line.

0-65535 ms: The NPort IA5150A/IA5250A automatically closes the TCP connection if there is no serial data activity during the given time.

This parameter defines the maintenance status as Closed or Listen for the TCP connection. The connection is closed if there is no incoming or outgoing data through the serial port during the specific Inactivity time.

If the Inactivity time is set to 0, the current TCP connection is kept active until a connection close request is received. Although Inactivity time is disabled, the NPort IA5450A will check the connection status between the NPort IA5450A and remote host by sending "keep alive" packets periodically. If the remote host does not respond to the packet, the NPort IA5450A assumes that the connection was closed down unintentionally. The NPort IA5450A will then force the existing TCP connection to close.



ATTENTION

The **Inactivity time** should be configured to be larger than the **Force transmit** timeout setting. To prevent the unintended loss of data due to the session disconnection, it is highly recommended that you set this value large enough so that the intended data transfer is completed.



ATTENTION

Inactivity time is ONLY active when TCP connect on is set to Any character.

Ignore jammed IP

Setting	Factory Default	Necessity
No or Yes	No	Optional

By default, when **Max connection** is greater than 1, and the serial device is transmitting data, if any one of the connected hosts is not responding, it will wait until the data has been transmitted successfully before transmitting the second group of data to all hosts. If you select **Yes** for **Ignore jammed IP**, the host that is not responding will be ignored, but the data will still be transmitted to the other hosts.

Packing length

Setting	Factory Default	Necessity
0 to 1024	0	Optional

Default = 0, The Delimiter Process will be followed, regardless of the length of the data packet. If the data length (in bytes) matches the configured value, the data will be forced out. The data length can be configured for 0 to 1024 bytes. Set to 0 if you do not need to limit the length.

Delimiter 1

Setting	Factory Default	Necessity
00 to FF (hex)	None	Optional

Delimiter 2

Setting	Factory Default	Necessity
00 to FF (hex)	None	Optional

Once the NPort IA5150A/IA5250A receives both delimiters through its serial port, it immediately packs all data currently in its buffer and sends it to the NPort IA5150A/IA5250A's Ethernet port.



ATTENTION

Delimiter 2 is optional. If left blank, then Delimiter 1 alone trips clearing of the buffer. If the size of the serial data received is greater than 1 KB, the NPort IA5150A/IA5250A will automatically pack the data and send it to the Ethernet. However, to use the delimiter function, you must at least enable Delimiter 1. If Delimiter 1 is left blank and Delimiter 2 is enabled, the delimiter function will not work properly.

Delimiter process

Setting	Factory Default	Necessity
Do Nothing,	Do Nothing	Optional
Delimiter + 1,		
Delimiter + 2,		
Strip Delimiter		

Delimiter + 1 or **Delimiter** + 2: The data will be transmitted when an additional byte (for Delimiter +1), or an additional 2 bytes (for Delimiter +2) of data is received after receiving the Delimiter.

Strip Delimiter: When the Delimiter is received, the Delimiter is deleted (i.e., stripped), and the remaining data is transmitted.

Do Nothing: The data will be transmitted when the Delimiter is received.

Force transmit

Setting	Factory Default	Necessity
0 to 65535 ms	0 ms	Optional

0: Disable the force transmit timeout.

1 to 65535: Forces the NPort IA5450A's TCP/IP protocol software to try to pack serial data received during the specified time into the same data frame.

This parameter defines the time interval during which the NPort IA5450A fetches the serial data from its internal buffer. If data is incoming through the serial port, the NPort IA5450A stores the data in the internal buffer. The NPort IA5450A transmits data stored in the buffer via TCP/IP, but only if the internal buffer is full or if the Force transmit time interval reaches the time specified under Force transmit timeout.

The optimal Force transmit timeout depends on your application, but it must be at least larger than one character interval within the specified baudrate. For example, assume that the serial port is set to 1200 bps, 8 data bits, 1 stop bit, and no parity. In this case, the total number of bits needed to send a character is 10 bits, and the time required to transfer one character is

(10 (bits) / 1200 (bits/s)) * 1000 (ms/s) = 8.3 ms.

Therefore, you should set Force transmit timeout to be larger than 8.3 ms, so in this case, it must be greater than or equal to 10 ms.

If the user wants to send a series of characters in the same packet, the serial device attached to the NPort IA5450A should send that series of characters during a time interval less than the Force transmit timeout for the NPort IA5450A, and the total length of data must be less than or equal to the NPort IA5450A's internal buffer size. The serial communication buffer size for the NPort IA5450A is 1 KB per port.

Setting	Factory Default	Necessity
IP address or Domain	None	Required
Name		
(E.g., 192.168.1.1)		

Destination IP address 1/2/3/4

Allows NPort IA5150A/IA5250A to connect actively to the remote host whose IP address is set by this parameter.



ATTENTION

Up to 4 connections can be established between the NPort IA5450A and hosts. The connection speed or throughput may be low if one of the four connections is slow, since one slow connection will slow down the other connections.



ATTENTION

The **Destination IP address** parameter can use both IP address and Domain Name. For some applications, the user may need to send the data actively to the remote destination domain name.

Designated Local Port 1/2/3/4

Setting	Factory Default	Necessity
TCP Port No.	5011 (Port 1)	Required
	5012 (Port 2)	
	5013 (Port 3)	
	5014 (Port 4)	

Connection control

Setting	Factory Default	Necessity
Startup/None, Any	Startup/None	Required
Character/None,		
Any Character/Inactivity Time,		
DSR ON/DSR OFF, DSR ON/None,		
DCD ON/DCD OFF, DCD ON/None		

The meaning of each of the above settings is given in the table below. In general, both the Connect condition and Disconnect condition are given.

Connect/Disconnect	Description
Startup/None	A TCP connection will be established on startup, and will remain active indefinitely.
(default)	
Any Character/None	A TCP connection will be established when any character is received from the serial
	interface, and will remain active indefinitely.
Any Character/	A TCP connection will be established when any character is received from the serial
Inactivity Time	interface, and will be disconnected when the Inactivity time out is reached.
DSR On/DSR Off	A TCP connection will be established when a DSR "On" signal is received, and will
	be disconnected when a DSR "Off" signal is received.
DSR On/None	A TCP connection will be established when a DSR "On" signal is received, and will
	remain active indefinitely.
DCD On/DCD Off	A TCP connection will be established when a DCD $"On"$ signal is received, and will
	be disconnected when a DCD "Off" signal is received.
DCD On/None	A TCP connection will be established when a DCD "On" signal is received, and will
	remain active indefinitely.

UDP Mode

мох	∧° то	otal Solution for Indust	rial Device Ne	tworking	v	/ww.moxa.co
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127. - 2	254	MAC Addres Firmware	s - 00:90:E8:12:34:57 - 1.0 Build 1003231
		:•Operatio	n Modes			
- Main Menu		Port 1				
Overview		FOILT				
Quick Setup		Operation mode	UDP	*		
Export/Import			Begin	End		Port
Basic Settings		Destination IP address 1			· 4	001
Network Settings		Destination IP address 2				001
- Serial Settings						
- Operating Settings		Destination IP address 3			: 4	001
Port 1		Destination IP address 4			: 4	001
Port 2		Local listen port	4001			
Port 3						
Port 4		Data Packing				
Accessible IP Settings		Data Facking				
- Auto Warning Settings	3	Packing length	0 (0 - 102	4)		
Port 4		Delimiter 1	00 (Hex)	Enable		
Accessible IP Settings		Delimiter 2	00 (Hex)	Enable		
- Auto Warning Settings	3			-		
Accessible IP Settings		Delimiter process		(Processed only v	vhen packing le	ngth is 0)
- Auto Warning Settings	3	Force transmit	0 (0 - 65	535 ms)		
Upgrade Firmware		Apply the above settings	✓ P1	P2	P3	P4
- Monitor		to	All ports			
Change Password			-			
Load Factory Default			Submit			
Save/Restart	~			-		

Packing length

Setting	Factory Default	Necessity
0 to 1024	0	Optional

Default = 0, The Delimiter Process will be followed, regardless of the length of the data packet. If the data length (in bytes) matches the configured value, the data will be forced out. The data length can be configured for 0 to 1024 bytes. Set to 0 if you do not need to limit the length.

Delimiter 1

Setting	Factory Default	Necessity
00 to FF	None	Optional

Delimiter 2

Setting	Factory Default	Necessity
00 to FF	None	Optional

Once the NPort IA5150A/IA5250A receives both delimiters through its serial port, it immediately packs all data currently in its buffer and sends it out the NPort IA5150A/IA5250A's Ethernet port.



ATTENTION

Delimiter 2 is optional. If left blank, then Delimiter 1 alone trips clearing of the buffer. If the size of the serial data received is greater than 1 KB, the NPort IA5150A/IA5250A will automatically pack the data and send it to the Ethernet. However, to use the delimiter function, you must at least enable Delimiter 1. If Delimiter 1 is left blank and Delimiter 2 is enabled, the delimiter function will not work properly.

Delimiter process

Setting	Factory Default	Necessity
Do Nothing,	Do Nothing	Optional
Delimiter + 1,		
Delimiter + 2,		
Strip Delimiter		

Delimiter + 1 or **Delimiter** + 2: The data will be transmitted when an additional byte (for Delimiter +1), or an additional 2 bytes (for Delimiter +2) of data is received after receiving the Delimiter.

Strip Delimiter: When the Delimiter is received, the Delimiter is deleted (i.e., stripped), and the remaining data is transmitted.

Do Nothing: The data will be transmitted when the Delimiter is received.

Force	transmit	
I UICE	transmit	

Setting	Factory Default	Necessity
0 to 65535 ms	0 ms	Optional

0: Disable the force transmit timeout.

1 to 65535: Forces the NPort IA5450A's TCP/IP protocol software to try to pack serial data received during the specified time into the same data frame.

This parameter defines the time interval during which the NPort IA5450A fetches the serial data from its internal buffer. If data is incoming through the serial port, the NPort IA5450A stores the data in the internal buffer. The NPort IA5450A transmits data stored in the buffer via TCP/IP, but only if the internal buffer is full or if the Force transmit time interval reaches the time specified under Force transmit timeout.

The optimal Force transmit timeout depends on your application, but it must be at least larger than one character interval within the specified baudrate. For example, assume that the serial port is set to 1200 bps, 8 data bits, 1 stop bit, and no parity. In this case, the total number of bits needed to send a character is 10 bits, and the time required to transfer one character is

(10 (bits) / 1200 (bits/s)) * 1000 (ms/s) = 8.3 ms.

Therefore, you should set Force transmit timeout to a value larger than 8.3 ms, so in this case, it must be greater than or equal to 10 ms.

If the user wants to send a series of characters in the same packet, the serial device attached to the NPort IA5450A should send that series of characters during a time interval less than the Force transmit timeout for the NPort IA5450A, and the total length of data must be less than or equal to the NPort IA5450A's internal buffer size. The serial communication buffer size for the NPort IA5450A is 1 KB per port.

Setting	Factory Default	Necessity
IP address range	Begin: Empty	Required
E.g., Begin: 192.168.1.1	End: Empty	
End: 192.168.1.10	Port: 4001	

Destination IP address 1

Destination IP address 2/3/4

Setting	Factory Default	Necessity
IP address range	Begin: Empty	Optional
E.g., Begin: 192.168.1.11	End: Empty	
End: 192.168.1.20	Port: 4001	

Local listen port

Setting	Factory Default	Necessity
1 to 65535	4001	Required

The UDP port that NPort IA5150A/IA5250A listens to, and that other devices must use to contact NPort IA5150A/IA5250A. To avoid conflicts with well known UDP ports, the default is set to 4001.

UDP Multicast

A multicast is a packet sent by one host to multiple hosts. In multicast, each host that belongs to a specific multicast group will receive multicast packets for that group. To configure a host as a multicast receiver over the Internet, it must inform the routers on its LAN. The Internet Group Management Protocol (IGMP) is used to communicate group membership information between hosts and routers on a LAN. NPort IA5150A/IA5250A supports IGMP version 2.

MOX	Т	otal Solution for Indus	strial Device N	letworking	www.	тоха.соп
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO	- 192.168.12) 2	17.254	CAddress - 00:9 nware - 1.0	90:E8:12:34:57 Build 10032318
		:•Operatio	n Modes	5		
- Main Menu		Port 1				
Overview						
Quick Setup		Operation mode	UDP	*		
Export/Import			Begin	End	Port	
Basic Settings		Destination IP address	1 239 1 1 1		· 4001	7
Network Settings						
- Serial Settings		Destination IP address	2		: 4001	
- Operating Settings	=	Destination IP address	3		: 4001]
Port 1		Destination IP address	4		· 4001	1
Port 2						_
Port 3		Local listen port	4001			

You could key in the IP (ex. 239.1.1.1) that multicast group assigned into the column of Destination IP address, and next, NPort would automatically add the Group, receiving all packets from this group in order to fulfill the function of multicast.

Pair Connection Mode

Pair Connection Master Mode

When you select **Pair Connection Master Mode** for the Operation mode of one of the NPort IA5150A/IA5250A device servers this NPort IA5150A/IA5250A will be acting as a TCP client.

MOX	 	Total Solution for Indus	strial Device Network	ing	W	ww.moxa.com
ModelName	- NPort IA54504 - NPIA5450AI_2		- 192.168.127.254 - 2		MAC Addre Firmware	ss - 00:90:E8:12:34:57 - 1.0 Build 10032318
	^	:•Operatio	on Modes			
- Main Menu Overview		Port 1				
Quick Setup Export/Import Basic Settings Network Settings - Serial Settings - Operating Settings		Operation mode TCP alive check time Destination IP address Apply the above settings to	Pair Connection Master 7 (0 - 99 min) 7 P1 P2 All ports		P3	Port 4001
Port 1 Port 2			Submit			

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Required

0 min: TCP connection is not closed due to an idle TCP connection.

1 to 99 min: The NPort IA5150A/IA5250A closes the TCP connection automatically if there is no TCP activity for the given time.

Destination IP address

Setting	Factory Default	Necessity
IP address or Domain Name	blank	Optional
(E.g., 192.168.1.1)		
TCP port No.	4001	Required

The Pair Connection "Master" will contact the network host that has this IP address. Data will be transmitted through the port No. (4001 by default). Note that you must configure the same TCP port No. for the device server acting as the Pair Connection "Slave."

Pair Connection Slave Mode

When you select **Pair Connection Slave Mode** for the Operation mode of one of the NPort IA5150A/IA5250A device servers this NPort IA5150A/IA5250A will be acting as a TCP server.

MOX	€ ∧° To	tal Solution for Indu	strial Device Netw	orking/	W	ww.moxa.com
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127.254 - 2		MAC Addre Firmware	ss - 00:90:E8:12:34:57 - 1.0 Build 10032318
		- Operatio	on Modes			
- Main Menu		Port 1				
Overview		PULL				
Quick Setup		Operation mode	Pair Connection Maste	er 🗸		
Export/Import		TCP alive check time	7 (0 - 99 min)			
Basic Settings		Destination IP address				Port 4001
Network Settings		Desunduon ir dudress				-011 4001
- Serial Settings		Apply the above	✓ P1	2	P3	P4
- Operating Settings	=	settings to	All ports			
Port 1						
Port 2			Submit			
D 10						

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Required

0 min: TCP connection is not closed due to an idle TCP connection.

1 to 99 min: The NPort IA5150A/IA5250A closes the TCP connection automatically if there is no TCP activity for the given time.

Local TCP port

Setting	Factory Default	Necessity
TCP port No. (e.g.,	4001	Required
4001)		

This Port No. must be the same port No. that you set up for the Pair Connection "Master" device server

Ethernet Modem Mode

MOX	ζΛ°	Total Solution for Indu	strial Device Network	king	W	ww.moxa.com
ModelName	- NPort IA5450A - NPIA5450AI_2		- 192.168.127.254 - 2		MAC Addre Firmware	ss - 00:90:E8:12:34:57 - 1.0 Build 10032318
	<u>^</u>	:•Operatio	on Modes			
- Main Menu		Port 1				
Overview		POR 1				
Quick Setup		Operation mode	Ethernet Modem 🛛 🗸			
Export/Import		TCP alive check time	7 (0 - 99 min)			
Basic Settings		Local TCP port	4001			
Network Settings		Local fer port			_	_
- Serial Settings		Apply the above	🗹 P1 📃 P2		P3	P4
- Operating Settings		settings to	All ports			
Port 1						
Port 2			Submit			
Port 3						

<u>Dial-in</u>

The NPort IA5150A/IA5250A listens for a TCP/IP connection request from the remote Ethernet modem or host. NPort IA5150A/IA5250A's response depends on the ATS0 value, as outlined below.

ATS0=0 (default):

The NPort IA5150A/IA5250A will temporarily accept the TCP connection and then send the "RING" signal out through the serial port. The serial controller must reply with "ATA" within 2.5 seconds to accept the connection request, after which NPort IA5150A/IA5250A enters data mode. If no "ATA" command is received, NPort IA5150A/IA5250A will disconnect after sending three "RING" signals.

ATS0≧1:

The NPort IA5150A/IA5250A will accept the TCP connection immediately and then send the "CONNECT <baud>" command to the serial port, in which <baud> represents the baudrate of the NPort IA5150A/IA5250A's serial port. After that, the NPort IA5150A/IA5250A immediately enters data mode.

Dial-out

The NPort IA5150A/IA5250A accepts the AT command "ATD <IP>:<TCP port>" from the serial port and then requests a TCP connection from the remote Ethernet Modem or PC. This is where <IP> is the IP address of the remote Ethernet modem or PC, and <TCP port> is the TCP port number of the remote Ethernet modem or PC. Once the remote unit accepts this TCP connection, the NPort IA5150A/IA5250A will send out the "CONNECT
 <baud>" signal via the serial port and then enter data mode.

Disconnection request from local site

When the NPort IA5150A/IA5250A is in data mode, the user can drive the DTR signal to OFF, or send "+++" from the local serial port to the NPort IA5150A/IA5250A. The NPort IA5150A/IA5250A will enter command mode and return "NO CARRIER" via the serial port, and then input "ATH" to shut down the TCP connection after 1 second.

NOTE The "+++" command cannot be divided. The "+" character can be changed in register S2, and the guard time, which prefixes and suffixes the "+++" in order to protect the raw data, can be changed in register S12.

After the TCP connection has been shut down by the remote Ethernet modem or PC, the NPort IA5150A/IA5250A will send the "NO CARRIER" signal via the serial port and then return to command mode.

AT Commands

The NPort IA5150A/IA5250A supports the following common AT commands used with a typical modem:

No.	AT command	Description	Remarks
1	ATA	Answer manually	
2	ATD <ip>:<port></port></ip>	Dial up the IP address: Port No.	
3	ATE	ATE0=Echo OFF	
		ATE1=Echo ON (default)	
4	ATH	ATH0=On-hook (default)	
		ATH1=Off-hook	
5	ATI, ATIO, ATI1, ATI2	Modem version	reply "OK" only
6	ATL	Speaker volume option	reply "OK" only
7	ATM	Speaker control option	reply "OK" only
8	ATO	On line command	
9	ATP, ATT	Set Pulse/Tone Dialing mode	reply "OK" only
10	ATQ0, ATQ1	Quiet command (default=ATQ0)	
11	ATSr=n	Change the contents of S register	See "S registers"
12	ATSr?	Read the contents of S register	See "S registers"
13	ATV	Result code type	
		ATV0 for digit code	
		ATV1 for text code	
		0=0K	

-			
		1=connect (default)	
		2=ring	
		3=No carrier	
		4=error	
14	ATZ	Reset (disconnect, enter command mode and	
		restore the flash settings)	
15	AT&C	Serial port DCD control AT&C0=DCD always on	
		AT&C1=DTE detects connection by DCD on/off	
		(default)	
16	AT&D	Serial port DTR control AT&D0=recognize DTE	
		always ready AT&D1, AT&D2=reply DTE when DTR	
		On (default)	
17	AT&F	Restore manufacturer's settings	
18	AT&G	Select guard time	reply "OK" only
19	AT&R	Serial port RTS option command	reply "OK" only
20	AT&S	Serial port DSR control	reply "OK" only
21	AT&V	View settings	
22	AT&W	Write current settings to flash for next boot up	

S Registers

No.	S Register	Description & default value	Remarks
1	S0	Ring to auto-answer (default=0)	
2	S1	Ring counter (always=0)	no action applied
3	S2	Escape code character (default=43 ASCII "+")	
4	S3	Return character (default=13 ASCII)	
5	S4	Line feed character (default=10 ASCII)	
6	S5	Backspace character (default= 8 ASCII)	
7	S6	Wait time for dial tone (always=2, unit=sec)	no action applied
8	S7	Wait time for carrier (default=3, unit=sec)	
9	S8	Pause time for dial delay (always=2, unit=sec)	no action applied
10	S9	Carrier detect response time (always=6, unit 1/10 sec)	no action applied
11	S10	Delay for hang up after carrier	no action applied
		(always=14, unit 1/10 sec)	
12	S11	DTMF duration and spacing (always=100 ms)	no action applied
13	S12	Escape code guard time	
		(default=50, unit 1/50 sec)	
		to control the idle time for "+++"	

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Required

0 min: The TCP connection will not be closed due to an idle TCP connection.

1 to 99 min: The NPort IA5150A/IA5250A closes the TCP connection automatically if there is no TCP activity for the given time.

Local TCP port

Setting	Factory Default	Necessity
1 to 65535	4001	Required

The TCP port that other devices must use to contact this device. To avoid conflicts with standard TCP ports, the default is set to 4001.

Reverse Telnet Mode

ΜΟΧΛ [°]		Total Solution for Industrial Device Networking WWW.IDOXa.co			ww.moxa.com	
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO.	- 192.168.127.254 - 2		MAC Addre Firmware	ss - 00:90:E8:12:34:57 - 1.0 Build 10032318
		• Operatio	on Modes			
- Main Menu		Port 1				
Overview		POILT				
Quick Setup		Operation mode	Reverse Telnet	*		
Export/Import		TCP alive check time	7 (0 - 99 min)			
Basic Settings		Inactivity time				
Network Settings		macuvity ume	0 (0 - 65535 ms)			
- Serial Settings		Local TCP port	4001			
- Operating Settings		Map <cr-lf></cr-lf>	CR-LF 🐱			
Port 1		Apply the above			P3	P4
Port 2		settings to	All ports			
Port 3		-	All ports			
Port 4						
Accessible IP Setting	js		Submit			

TCP alive check time

Setting	Factory Default	Necessity
0 to 99 min	7 min	Optional

0 min: The TCP connection will not be closed due to an idle TCP connection.

1 to 99 min: The NPort IA5150A/IA5250A automatically closes the TCP connection if there is no TCP activity for the given time.

Inactivity time

Setting	Factory Default	Necessity
0 to 65535 ms	0	Optional

Idle time setting for auto-disconnection. 0 min. means it will never disconnect.

Local TCP port

Setting	Factory Default	Necessity
1 to 65535	4001	Required

Each of the NPort IA5150A/IA5250A's serial ports is mapped to a TCP port. To avoid conflicts with common TCP port numbers, set port numbers to 4001 for port 1, 4002 for port 2, etc.

Map <CR-LF>

Setting	Factory Default	Necessity
CR, LF, or CR-LF	CR-LF	Required

If data received through the NPort IA5150A/IA5250A's Ethernet port is sent using the "enter" command, the data will be transmitted out the serial port with an added

"carriage return + line feed" if you select the <CR-LF> option (i.e., the cursor will jump to the next line, and return to the first character of the line)

"carriage return" if you select the <CR> option

(i.e., the cursor will return to the first character of the line)

"line feed" if you select the <LF> option.

(i.e., the cursor will jump to the next line, but not move horizontally)

Disabled Mode

MO	СЛ" Та	otal Solution for Ind	ustrial Device	Networking	W	ww.moxa.com
ModelName	- NPort IA5450AI - NPIA5450AI_2	IPSerial NO	- 192.168.127 2	.254		ss - 00:90:E8:12:34:57 - 1.0 Build 10032318
- Main Menu	^	:•Operat	ion Mod	es		
		Port 1				
Overview Quick Setup Export/Import		Operation mode	Disable	~		
Basic Settings Network Settings		Apply the above settings to	P1	P2	P3	P4
- Serial Settings - Operating Settings	в 🗮		Submit			

When Operation mode is set to Disabled, that particular port will be disabled. Check the "Apply the above settings to all serial ports" to apply this setting to the other port.

Accessible IP Settings

Model - NPort IA545	50AI	IP	- 192.16	8.127.253	MAC	Address	- 00:90:E8:19:28
Name - NPIA5450A	I_10	Ser	ial NO 10		• Firm	ware	- 1.0 Build 10050
		Acce	essible l	P List			
Aain Menu	Пв	nable the acc	essible IP list (Not	checking "Enable" w	ill allow all	IPs to cor	nect)
Overview		10010 010 000		should g Endolo I			
Quick Setup	No.	Activate the	IP Address	Netmask			
Export/Import	rio.	ule	IF Address	Neuliusk			
Basic Settings Network Settings	1						
- Serial Settings	2						
- Operating Settings	3						
Accessible IP Settings	4						
- Auto Warning Settings	5						
Upgrade Firmware							
- Monitor	6						
Change Password	7						
Load Factory Default Save/Restart	8						
SaverRestan	9						
	10						
	11						
	12						
	13						
	14						
	15		L				
		_					
	16						

The NPort IA5150A/IA5250A uses an IP address based filtering method to control access to itself.

Accessible IP Settings allows you to add or block remote host IP addresses to prevent unauthorized access. Access to the NPort IA5150A/IA5250A is controlled by IP address. That is, if a host's IP address is in the accessible IP table, then the host will be allowed to access the the NPort IA5150A/IA5250A. You can allow one of the following cases by setting the parameter.

Only one host with a specific IP address can access the NPort IA5150A/IA5250A Enter "IP address/255.255.255.255.255" (e.g., "192.168.1.1/255.255.255.255.255").

Hosts on a specific subnet can access the NPort IA5150A/IA5250A

Enter "IP address/255.255.255.0" (e.g., "192.168.1.0/255.255.255.0").

Any host can access the NPort IA5150A/IA5250A

Disable this function by un-checking the "Enable the accessible IP list" checkbox. Refer to the following table for more configuration examples.

Allowable Hosts	Input format
Any host	Disable
192.168.1.120	192.168.1.120 / 255.255.255.255
192.168.1.1 to 192.168.1.254	192.168.1.0 / 255.255.255.0
192.168.0.1 to 192.168.255.254	192.168.0.0 / 255.255.0.0
192.168.1.1 to 192.168.1.126	192.168.1.0 / 255.255.255.128
192.168.1.129 to 192.168.1.254	192.168.1.128 / 255.255.255.128

Auto Warning Settings

Auto warning: Email and SNMP trap

ΜΟΧΛ	Total Solution for Inde	ustrial Device Netwo	orking W	ww.moxa.com
Model - NPort IA5450 Name - NPIA5450AI		- 192.168.127.253 - 10	 MAC Addre Firmware 	ess - 00:90:E8:19:28:88 - 1.0 Build 10050609
	₽E-mail ar	nd SNMP Tr	ap Settin	gs
- Main Menu	Mail Server			
Overview	Mail Server			
Quick Setup	Mail server			
Export/Import	My server requires a	uthentication		
Basic Settings	User name			
Network Settings				
- Serial Settings	Password			
- Operating Settings	From E-mail address	NPIA5450AI_10@NPIA54	150AI	
Accessible IP Settings	E-mail address 1			
- Auto Warning Settings	E-mail address 2			
E-mail and SNMP Trap				
Event Type	E-mail address 3			
Upgrade Firmware	E-mail address 4			
- Monitor				
Change Password	SNMP Trap Server			
Load Factory Default				
Save/Restart	SNMP trap server IP or domain name			
		Submit		

Mail Server

Mail server

Setting	Factory Default	Necessity
IP Address or Domain	None	Optional
Name		

User name

Setting	Factory Default	Necessity
1 to 15 characters	None	Optional

Password

Setting	Factory Default	Necessity
1 to 15 characters	None	Optional

From E-mail address

Setting	Factory Default	Necessity
1 to 63 characters	None	Optional

E-mail address 1/2/3/4

Setting	Factory Default	Necessity
1 to 63 characters	None	Optional



ATTENTION

Consult your Network Administrator or ISP for the proper mail server settings. The Auto warning function may not work properly if it is not configured correctly. The NPort IA5150A/IA5250A SMTP AUTH supports LOGIN, PLAIN, CRAM-MD5 (RFC 2554).

SNMP Trap Server

SNMP trap server IP or domain name

Setting	Factory Default	Necessity
IP address or Domain	None	Optional
Name		

Event Type

	t IA5450AI 5450AI_10	IPSerial NO.	- 192.168. - 10	127.253	MAC AddressFirmware	s - 00:90:E8:19:28:8 - 1.0 Build 100506
		• Event S	etting	S		
lain Menu		System Event				
Overview			_	_		
Quick Setup		Cold start	🗌 Mail	🗌 Trap		
Export/Import Basic Settings		Warm start	🗌 Mail	Trap 🗌		
Network Settings						
- Serial Settings		Config Event				
- Operating Settings		Authentication failure	🗌 Mail	Trap		
Accessible IP Settings		IP changed	Mail			
- Auto Warning Settings		Password changed	Mail			
E-mail and SNMP Trap Event Type		Power failure	Mail		Relay output	
Upgrade Firmware		Ethernet1 link down	Mail	Trap	Relay output	
- Monitor		Ethernet2 link down	Mail	Trap	Relay output	
Change Password			L Mai			
Load Factory Default Save/Restart		DCD Changed				
SaverResidit		Port 1	Mail	Trap	Relay output	
		Port 2	Mail		Relay output	
		Port 3	Mail		Relay output	
		Port 4	Mail	Trap	Relay output	
		DSR Changed				
		Port 1	🗌 Mail	Trap	Relay output	
		Port 2	Mail	Trap	Relay output	
		Port 3	Mail		Relay output	
		Port 4	Mail		Relay output	

Cold start

This refers to starting the system from power off (contrast this with warm start). When performing a cold start, the NPort IA5150A/IA5250A will automatically issue an Auto warning message by e-mail, or send an SNMP trap after booting up.

Warm start

This refers to restarting the computer without turning the power off. When performing a warm start, the NPort IA5150A/IA5250A will automatically send an e-mail, or send an SNMP trap after rebooting.

Authentication failure

The user inputs a wrong password from the Console or Administrator. When authentication failure occurs, the NPort will immediately send an e-mail or send an SNMP trap.

IP address changed

The user has changed the NPort IA5150A/IA5250A's IP address. When the IP address changes, the NPort IA5150A/IA5250A will send an e-mail with the new IP address before the NPort IA5150A/IA5250A reboots. If the NPort IA5150A/IA5250A is unable to send an e-mail message to the mail server within 15 seconds, the NPort IA5150A/IA5250A will reboot anyway, and abort the e-mail auto warning.

Password changed

The user has changed the NPort IA5150A/IA5250A's password. When the password changes, the NPort IA5150A/IA5250A will send an e-mail with the password changed notice before the NPort IA5150A/IA5250A reboots. If the the NPort IA5150A/IA5250A is unable to send an e-mail message to the mail server within 15 seconds, the NPort IA5150A/IA5250A will reboot anyway, and abort the e-mail auto warning.

Power failure

We provide two DC power inputs for redundancy. The NPort IA5150A/IA5250A Series supports different approaches to warn engineers automatically, such as by email or relay output. Users can connect to "Monitor -> Relay Output" from the web console to check what event causes the warning. The relay output will be canceled after the power recovers, or by selecting "acknowledge event" using the web console or Telnet. When the Relay Output is sending a warning, the Ready LED will flash red until the warning event ceases.

Ethernet link down

The NPort IA5150A/IA5250A Series provides system maintainers with real-time alarm messages for Ethernet link down. Even when control engineers are out of the control room for an extended period of time, they can still be informed of the status of devices almost instantaneously when exceptions occur. The NPort IA5150A/IA5250A Series supports different methods for warning engineers automatically, such as by email, SNMP trap, and relay output. Users can connect to "Monitor -> Relay" Output from the web console to check which Ethernet port is causing the warning. The relay output will be canceled if the failed Ethernet link is restored, or by selecting Acknowledge Event from the web console or Telnet. When the Relay Output is issuing a warning, the Ready LED will flash in red until the warning event ceases.

DCD changed

The DCD (Data Carrier Detect) signal has changed, also indicating that the modem connection status has changed. For example, a DCD change to high also means "Connected" between local modem and remote modem. If the DCD signal changes to low, it also means that the connection line is down.

When the DCD changes, the NPort IA5150A/IA5250A will immediately send an e-mail, send an SNMP trap,or trigger the relay output.

DSR changed

The DSR (Data Set Ready) signal has changed, also indicating that the data communication equipment's power is off. For example, a DSR change to high also means that the DCE is powered ON. If the DSR signal changes to low, it also means that the DCE is powered off.

When the DSR changes, the NPort IA5150A/IA5250A will immediately send an e-mail, send an SNMP trap, or trigger the relay output.

Mail

Setting	Factory Default	Necessity
Enable, Disable	Disable	Optional

This feature helps the administrator manage how the NPort IA5150A/IA5250A sends e-mail to pre-defined e-mail boxes when the enabled events—such as Cold start, Warm start, Authentication failure, etc.—occur. To configure this feature, click the Event Type Mail checkbox.

Trap

Setting	Factory Default	Necessity
Enable, Disable	Disable	Optional

This feature helps the administrator manage how the NPort IA5150A/IA5250A sends SNMP Trap to a pre-defined SNMP Trap server when the enabled events—such as Cold start, Warm start, Authentication failure, etc.—occur. To configure this feature, click the Event Type Trap checkbox.

Upgrade Firmware

MOX	۲ ^۲	otal Solu	tion f	or Indu	www.moxa.com				
ModelName	- NPort IA5450AI - NPIA5450AI_2		IP Se	rial NO.	- 192.168.127.254 - 2		MAC Addres Firmware	s - 00:90:E8:12:34:57 - 1.0 Build 10032318	
		₽Up	gra	de F	irmware				
- Main Menu		Upgrade							
Overview		firmware					Browse	Import	
Quick Setup									
Export/Import									
Basic Settings									
Network Settings									
- Serial Settings									
- Operating Settings									
Accessible IP Setting	s								
- Auto Warning Settin	gs								
Upgrade Firmware									

Keep your NPort IA5150A/IA5250A up to date with the latest firmware from Moxa. Occasionally, compare your NPort firmware to the version currently available at the Moxa website (<u>www.moxa.com</u>), If there is a new firmware version, you can download it and click Import to upgrade your firmware.

Monitor

Monitor Line

Click **Line** under **Monitor** to show the operation mode and status of each TCP/IP connection (IPx) for the serial ports.

Total Solution for Industrial Device Networking WV									vw.moxa.com		
	IPSerial NO.	- 192.168.127.254 2			1				E8:12:34:57 iild 10032318		
	• Monito	r Line									
Port	Operation Mode										
1	RealCOM		[1		[]	[1		
			l	1		l	1	l	1		
2	RealCOM		1	1		1	1	[1		
			1	1		ļ	1	l ,	1		
3	RealCOM		l	1		1	1	L L	1		
			1	1		1	1	1	1		
4	RealCOM		ľ	1		1 7	1	L r	1		
		1 1		1			1	L.	1		
	Port 1 2 3	Serial NO Serial NO Constant Operation Mode RealCOM RealCOM RealCOM RealCOM	Serial NO. -2 Connitor Line Port Operation Mode Connections 1 RealCOM [192.168.127.100] 2 RealCOM [1] 3 RealCOM [1] 3 RealCOM [1] 1 Listen] [1]	■ Serial NO. - 2 ■ Monitor Line Port Operation Mode Connections 1 RealCOM [192.168.127.100] [] 2 RealCOM [] [] [] 2 RealCOM [] [] [] 3 RealCOM [] [] [] 4 RealCOM [] [] []	Serial NO2 Monitor Line Port Operation Mode Connections RealCOM [192.168.127.100] [] RealCOM [] [] Listen] []	Serial NO. -2 ■ Monitor Line •	Serial NO2 Firm Monitor Line Port Operation Mode Connections RealCOM [192.168.127.100] [[] [Serial NO. -2 ■ Firmware Image: Serial NO. Connections Image: Serial NO. Image: S	■ Serial NO. -2 ■ Firmware -1.0 Bu Commitor Line ■ Monitor Line ■ Monitor Line Port Operation Mode Connections 1 RealCOM [192.168.127.100] [] [] [] [] [] 2 RealCOM []		

Monitor Async

Click Async under Monitor to show the current status of the serial port.

Model	- NPort IA5450AI			IP	- 192.168.127.254		MAC	Addre	ss - 0	0:90:E	8:12:34
Name	- NPIA5450AI_2			Serial NO.			Firmv	vare		0 Buil	d 10032
	^		:• M	onitor	Async						
Main Menu		Port	TxCnt	RxCnt	TxTotalCnt	RxTotalCnt	DSR	DTR	RTS	стѕ	DCD
Overview Quick Setup		1	0	0	0	0		0	0	0	
Export/Import		2	0	0	0	0	ŏ	ō.	ŏ	ŏ	ŏ
Basic Settings		3	0	0	0	0	0	ō.	0	0	0
Network Settings		4	0	0	0	0		•	•	•	•
- Serial Settings											
- Operating Settings											
Accessible IP Settings	;										
- Auto Warning Setting	IS										
Upgrade Firmware											
- Monitor											
Line											
Async											
Async-Settings											
Relay Output											

Monitor Async-Settings

Click Async Setting under Monitor to show the run-time settings for the serial port.

MOX/	∧ °	Total Solution for Industrial Device Networking								www.moxa.co			
ModelName	- NPort IA54 - NPIA5450A			IPSerial I		92.168.1 !	27.254		MAC A Firmw		- 00:90:E8:12:34:57 - 1.0 Build 10032318		
	^		:•Mor	nitor	Asyn	c-Se	etting	js					
Main Menu Overview								Flow Contro	1				
Quick Setup		Port	Baud Rate	Data Bits	Stop Bits	Parity	RTS/CTS	XON/XOFF	DTR/DSR	FIFO	Interface		
Export/Import		1	115200	8	1	None	ON	OFF	OFF	Enable	RS-232		
Basic Settings		2	115200	8	1	None	ON	OFF	OFF	Enable	RS-232		
Network Settings		3	115200	8	1	None	ÖN	OFF	OFF	Enable	RS-232		
- Serial Settings		4	115200	8	1	None	ON	OFF	OFF	Enable	RS-232		
- Operating Settings													
Accessible IP Settings													
- Auto Warning Settings													
Upgrade Firmware													
- Monitor													
Line													
Async													
Async-Settings													
Relay Output													

Monitor Relay Output

Click **Relay Output** under **Monitor** to show the current status of the relay output. To cease the Relay Output warning, click on the **Acknowledge Event** button.

MOX/	Total Solution for Industrial Device Networking						www.moxa.co		
ModelName	- NPort IA5450 - NPIA5450AI_		IP Serial NO.	- 192.168.127.254 - 2		MAC Address Firmware	- 00:90:E8:12:34:57 - 1.0 Build 10032318		
	<u>^</u>	₽ Dout	State						
Main Menu		Dout Status							
Overview							tale and deal French		
Quick Setup		Power failure					Acknowledge Event		
Export/Import		Ethernet1 link down					Acknowledge Event		
Basic Settings		Ethernet2 link down					Acknowledge Event		
Network Settings		DCD changed (Port 1)					Acknowledge Event		
- Serial Settings		DSR changed (Port 1)					Acknowledge Event		
- Operating Settings	Ξ.								
Accessible IP Settings		DCD changed (Port 2)					Acknowledge Event		
- Auto Warning Settings		DSR changed (Port 2)	1				Acknowledge Event		
Upgrade Firmware		DCD changed (Port 3)					Acknowledge Event		
- Monitor		DSR changed (Port 3)					Acknowledge Event		
Line									
Async		DCD changed (Port 4)					Acknowledge Event		
Async-Settings		DSR changed (Port 4)					Acknowledge Event		
Relay Output									

Change Password

ΜΟΧΛ	Total Solution for Industrial Device Networking WWW.MOXB.COM
Model - NPort IA545 Name - NPIA5450A	
	Change Password
- Main Menu	
Overview	Password
Quick Setup	Old password
Export/Import	New password
Basic Settings	Retype password
Network Settings	
- Serial Settings	Outwrite
- Operating Settings	Submit
Accessible IP Settings	
- Auto Warning Settings	
Upgrade Firmware	
- Monitor	
Change Password	

Input the "Old password" and "New password" to change the password. Leave the password boxes blank to erase the password. If the password is erased, then NPort IA5150A/IA5250A will not have password protection.



ATTENTION

If you forget the password, the ONLY way to configure NPort IA5150A/IA5250A is by using the "Reset to default" button on NPort IA5150A/IA5250A's top side to "Load Factory Default." Remember to export the configuration file when you finish the configuration. By using the Import function your configuration can be re-loaded into NPort IA5150A/IA5250A after using "Load Factory Default."

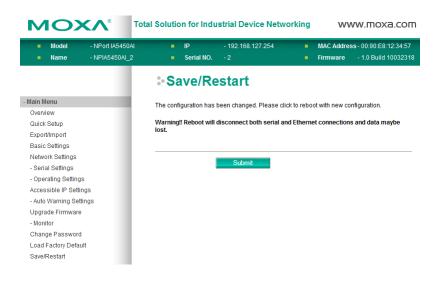
Load Factory Default

Model - NPort IA5450AI Name - NPIA5450AI_2	
	Load Factory Default
lain Menu	This function will reset all MOXA NPort Server settings to their factory default values.
Overview	Be aware that previous settings will be lost.
Quick Setup	
Export/Import	Submit
Basic Settings	Submit
Network Settings	
- Serial Settings	
- Operating Settings	
Accessible IP Settings	
- Auto Warning Settings	
Upgrade Firmware	
- Monitor	
Change Password	
Load Factory Default	

This function will reset all of NPort IA5150A/IA5250A's settings to the factory default values. Be aware that previous settings will be lost.

Save/Restart

Click **Save/Restart** will save the current configured settings and restart NPort IA5150A/IA5250A to take effect.



Configuring NPort Administrator

The following topics are covered in this chapter:

- Overview
- Installing NPort Administrator
- Configuration
 - Broadcast Search
 - Unlock Password Protection
 - Configuring the NPort IA5150A/IA5250A
 - Upgrading the Firmware
 - Export Configuration
 - Import Configuration
- Monitor
- Port Monitor
- COM Mapping
 - On-line COM Mapping
 - Off-line COM Mapping

COM Grouping

- ➤ Creating a COM Group
- Deleting a COM Group
- > Adding a Port to a COM Group
- Removing a Port from a COM Group
- ➢ Modify Ports in a COM Group
- Changing the COM Number of a COM Group
- > Changing Advanced Settings and Serial Parameters of the COM Group
- > Changing the Serial Port Specified as Signal Port for the COM Group
- IP Address Report

Overview

NPort Administrator lets you install and configure your NPort IA5150A/IA5250A Series products easily over the network. Five function groups are provided to ease the installation process, allow off-line COM mapping, and provide monitoring and IP location server functions.

NPort Administrator is an integrated software suite that bundles NPort Administrator and the IP Serial Library, and provides everything you need to manage, monitor, and modify your NPort IA5150A/IA5250A from a remote location.

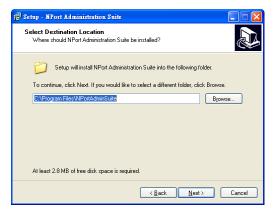
In this chapter, all the figures are captured by NPort IA5450A Series for demonstration.

Installing NPort Administrator

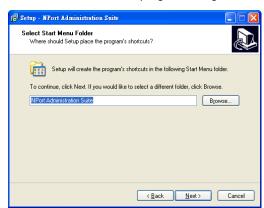
1. Once the Setup program starts running, click **Next** when the **Welcome** window opens to proceed with the installation.

🕞 Setup - NPort Administrat	ion Suite
	Welcome to the NPort Administration Suite Setup Wizard This will install NPort Administration Suite Ver1.13 on your computer. It is recommended that you close all other applications before continuing. Click Next to continue, or Cancel to exit Setup.
	Next > Cancel

2. Click Next to install program files in the default directory, or select an alternative location.



3. Click **Next** to install the program using the default program name, or select a different name.



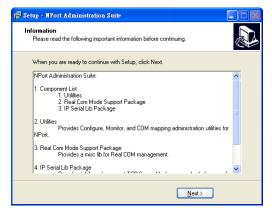
4. Click Install to proceed with the installation.



5. The **Installing** window reports the progress of the installation.

1 ²⁷ Setup - NPort Administration Suite	
Installing Please wait while Setup installs NPort Administration Suite on your computer.	
Extracting files C:\WINDDWS\system32\nport.dll	
	Cancel

6. Click **Next** to proceed with the installation.



7. Click **Finish** to complete the installation of NPort Administration Suite.

🔂 Setup - NPort Administrat	ion Suite				
	Completing the NPort Administration Suite Setup Wizard Setup has finished installing NPot Administration Suite on your computer. The application may be launched by selecting the installed icone. Click Finish to exit Setup. I Launch NPot Administratos				
< <u>B</u> ack <u>F</u> inish					

Configuration

The Administrator-Configuration window is divided into four parts.

- The top section contains the function list and online help area. (Windows NT does not support this .chm file format.)
- The five Administrator function groups are listed in the left section.
- A list of NPort IA5150A/IA5250A serial device servers, each of which can be selected to process user requirements, is displayed in the right section.
- The activity Log, which displays messages that record the user's processing history, is shown in the bottom section.

🔹 NPort Administrator-Configuration								
<u>File Function Configuration</u>	<u>Eile Eunction Configuration View Help</u>							
👖 🔮 🤮 Exit Search Search	武 釜 昏 旦 Exit Search Search IP Locate Configure Web							
Function			Configuration -	0 NPort(s)				
NPort Configuration Monitor Ort Monitor Ort Monitor Of Port Monitor Of Port Monitor Of Mapping Of Mapping Of Market Report		Model	MAC Address	IP Address	Server Name	Status		
	<					>		
Message Log - 0 Monitor Log	g · O							
No Time	[[Description						
Now: 2010/2/23 上午 10:19:19								

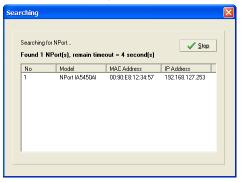
Broadcast Search

The **Broadcast Search** function is used to locate all NPort IA5150A/IA5250As that are connected to the same LAN as your computer. Since the Broadcast Search function searches by MAC address and not IP address, all NPort IA5150A/IA5250As connected to the LAN will be located, regardless of whether or not they are part of the same subnet as the host.

1. Position the cursor in the right middle section of the Administrator window and then click the right mouse button.

🐝 NPort Administrator-Co	onfiguration								
<u>File Function Configuration</u>	n ⊻iew <u>H</u> elp								
👖 🔮 🤮 Exit Search Search	A A A A A A A A A A A A A A A A A								
Function				Configuration -	0 NPort(s)				
- D NPort	No 🛆	Model		MAC Address	IP Address	Server Name	Status		
Configuration									
			2	Broadcast Search					
COM Mapping	<u> </u>		2	Specify by IP Address					
			灆	Locate					

2. The **Broadcast Search** window will open and display the Model, IP Address, MAC Address, and Progress of the search for that particular device.



3. When the search is complete, the Broadcast Search window will close, and the NPort IA5150A/IA5250As that were located will be displayed in the right pane of the Administrator window. If you found more than one server connected to this network, refer to the MAC address sticker on your server(s) to determine which server(s) are the ones you wish to configure. To configure an NPort IA5150A/IA5250A, place the cursor over the row displaying that NPort IA5150A/IA5250A's information, and then double click the left mouse button.

🐝 NPort Administrator	-Configurat	ion							
<u>File Function</u>	n ⊻iew <u>H</u> elp								
Exit Search P Locate Configure Web									
Function			Configuration -	2 NPort(s)					
- 🔁 NPort	No 🛆	Model	MAC Address	IP Address	Server Name	Status			
Configuration Monitor	1 2	NPort IA5450AI NPort IA5450A	00:90:E8:12:34:57 00:90:E8:12:34:51	192.168.127.254 192.168.34.100	NPIA5450AI_2 NPIA5450A_12	Lock			
Port Monitor GOM Mapping Y: IP Address Report									



ATTENTION

Before modifying the NPort IA5150A/IA5250A's configuration, use **Broadcast Search** to locate all NPort IA5150A/IA5250As connected to the LAN, or use **Specify by IP Address** to locate a particular NPort IA5150A/IA5250A.

Unlock Password Protection

If the NPort IA5150A/IA5250A is password protected (indicated by "Lock" for Status), you will receive the following error, and you will not be able to use the right click method to open the configuration page.



In this case, proceed as follows to "Unlock" the device server.

1. Select the NPort IA5150A/IA5250A with "Lock" status, click the right mouse button, and then select Unlock.

🐝 NPort Administrator	& NPort Administrator-Configuration								
<u>File Function Configuration</u>	n <u>V</u> iew <u>H</u> elp								
Exit Search Search IP Locate Configure Web									
Function			Con	figu	ration -	2 NPort(s))		
- D NPort	No 🛆	Model	MAC	Add	ress	IP Address		Server Name	Status
Configuration	1	NPort IA5450AI	00:5	n FR	12-34-57	1921681272	54	NPIA5450AL 2	Lock
- 🖾 Monitor	2	NPort IA5450A	00:5	2	Broadcast S	search	p	NPIA5450A_12	
Port Monitor				2	Specify by	IP Address	-		
COM Mapping							-		
······································				濭	<u>L</u> ocate		-		
				ם	<u>U</u> nlock				
	L			P	Configure		-		

2. After inputting the correct password, the Administrator will display an "Unlock ok" message.



3. The "Lock" status will change to "Unlock," and the Administrator utility will keep this NPort IA5150A/IA5250A in the Unlock status throughout this Administrator session.

🔹 NPort Administrator-Configuration									
<u>File Function</u> Configuration	File Eunction Configuration View Help								
Exit Search IP Locate Configure Web									
Function	Function Configuration - 2 NPort(s)								
E-D NPort	No 🛆	Model	MAC Address	IP Address	Server Name	Status			
Configuration	1	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	NPIA5450AI 2	Unlock			
Monitor	2	NPort IA5450A	00:90:E8:12:34:51	192.168.34.100	NPIA5450A_12				
- 🖾 Port Monitor									
- 📶 COM Mapping									
COM Mapping	L								
, i									

The meanings of the six "Status" states are given below (note that the term Fixed is borrowed from the standard fixed IP address networking terminology):

Lock

The NPort IA5150A/IA5250A is password protected, "Broadcast Search" was used to locate it, and the password has not yet been entered from within the current Administrator session.

Unlock

The NPort IA5150A/IA5250A is password protected, "Broadcast Search" was used to locate it, and the password has been entered from within the current Administrator session. Henceforth during this Administrator session, activating various utilities for this NPort IA5150A/IA5250A will not require re-entering the server password.

Blank

The NPort IA5150A/IA5250A is not password protected, and "Broadcast Search" was used to locate it.

Fixed

The NPort IA5150A/IA5250A is not password protected, and "Search by IP address" was used to locate it.

Lock Fixed

The NPort IA5150A/IA5250A is password protected, "Specify by IP address" was used to locate it, and the password has not yet been entered from within the current Administrator session.

Unlock Fixed

The NPort IA5150A/IA5250A is password protected, "Specify by IP address" was used to locate it, and the password has been entered from within the current Administrator session. Henceforth during this Administrator session, activating various utilities for this NPort IA5150A/IA5250A will not require re-entering the server password.

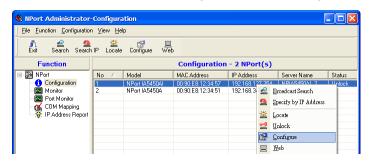
Configuring the NPort IA5150A/IA5250A

In this section, we illustrate how to access the NPort IA5150A/IA5250A's configuration utility. You should first make sure that you can connect over the network from your computer to the NPort IA5150A/IA5250A.

1. To start NPort Administrator, click Start → NPort Administration Suite → NPort Administrator.

🔚 Programs 🕨	6	Accessories	•	1	
1 and a second s	6	Startup	►		
	6	UC Finder	►		
	Ē	NPort Administration Suite	Þ	8	IP Serial Lib Reference
	6	NPort Windows Driver Manager	►	Ś.	NPort Administrator
		¥			Version info

2. Unlock the NPort IA5150A/IA5250A you wish to configure if it is password protected. Right click the NPort IA5150A/IA5250A and select Configure to start the configuration.



3. The progress bar shows that Administrator is retrieving configuration information from the specific NPort IA5150A/IA5250A.

Processing	×
Please wait	
26 / 29 , 89%	
🗶 Cancel	

4. Refer to Chapter 5 for each parameter's function definition. To modify the configuration, you must first click in the modify box to activate the parameter setting box.

Information	Accessible IPs	Auto Warning	IP Address I	Report	Password
Model Name NPort IA5450AI	Basic	Network	Serial	Oper	ating Mode
MAC Address 00:90:E8:12:34:57	Server Name	NPIA5450AI_2			
Serial Number 2	Time Zone	(GMT) Greenwich	Mean Time: Dubl	lin, Edinbuı	•
Firmware Version Ver 1.0	Local Date Local Time Time Server	2010/ 3/30 上午 10:55:29		1	•
System Uptime 0 days, 00h:05m:38s	Modify				
	Enable Telne				
	Click the "Modify" check	box to modify configu	uration	🗸 ОК	🗙 Cance



ATTENTION

You can simultaneously modify the configurations of multiple NPort IA5150A/IA5250As that are of the same model. To select multiple NPort IA5150A/IA5250As, hold down the Ctrl key when selecting additional NPort IA5150A/IA5250As, or hold down the Shift key to select a group of NPort IA5150A/IA5250As.

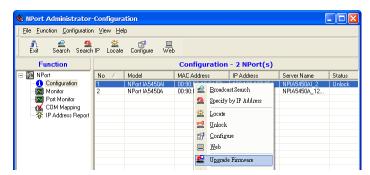
Upgrading the Firmware

Follow these steps to upgrade the firmware of an NPort IA5150A/IA5250A.

1. To start NPort Administrator, click Start \rightarrow NPort Administration Suite \rightarrow NPort Administrator.



 Unlock the NPort IA5150A/IA5250A you wish to configure if it is password protected. Right click a specific NPort IA5150A/IA5250A and select the Upgrade Firmware function to start upgrading the firmware.



3. Select the correct ROM file to download.

Select File		×
Select File		
File Name:	E:\NPIA5450A_Ver1.0_Build_10032918.rom	
	Browse	
	🗸 OK 🕺 🗶 Cance	el

4. Wait while the Upgrade Firmware action is processed.

Status				
Processi	ng, please wait			X Cancel
No	Model	MAC Address	IP Address	Status
1	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	Transmit - 10%(web)



ATTENTION

You can simultaneously upgrade the firmware of multiple NPort IA5150A/IA5250As that are of the same model. To select multiple NPort IA5150A/IA5250As, hold down the Ctrl key when selecting an additional NPort IA5150A/IA5250A, or hold down the Shift key to select a block of NPort IA5150A/IA5250As.

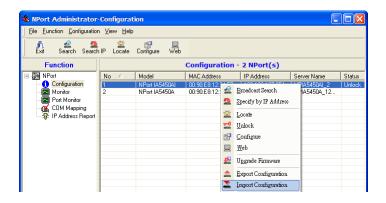
Export Configuration

To export the configuration of an NPort IA5150A/IA5250A, right click the NPort IA5150A/IA5250A, select **Export Configuration**, and then follow the onscreen instructions. The Export Configuration function is a handy tool that can be used to produce a text file containing the current configuration of a particular NPort IA5150A/IA5250A.

NPort Administrator							
🕺 🔮 💁 Exit Search Search	n∐P Locate	Configure Web					
Function	Configuration - 2 NPort(s)						
⊡- 🔊 NPort	No 🛆	Model	MAC Address	IP Address	Server Name	Status	
Configuration		NPort IA5450A NPort IA5450A		Broadcast Search Specify by IP Address Locate Unlock Configure Web Upgrade Firmware Export Configuration Import Configuration	NPIA5450AL 2 NPIA5450A_12	Unlock	

Import Configuration

The Import Configuration function is used to import an NPort IA5150A/IA5250A configuration from a file into one or more of the same model NPort IA5150A/IA5250A. To import a configuration, first select the target servers, click the right mouse button, and then select **Import Configuration**. Follow the onscreen instructions to locate the configuration file and start downloading the file.





ATTENTION

You can simultaneously import the same configuration file into multiple NPort IA5150A/IA5250As that are of the same model. To select multiple NPort IA5150A/IA5250As, hold down the Ctrl key when selecting an additional NPort IA5150A/IA5250A, or hold down the Shift key to select a block of NPort IA5150A/IA5250As.

Monitor

Use following method to start the Monitor function.

Broadcast Search \rightarrow Monitor \rightarrow Add Target

1. With Configuration selected under Function, use Broadcast Search to locate all NPorts on your LAN.

🐝 NP	Port	Administrator-Co	nfigurat	ion				
<u> </u>	Euno	ction <u>C</u> onfiguration ⊻i	ew <u>H</u> elp					
1	0	<u>C</u> onfiguration	*	Configure Web				
JE		<u>M</u> onitor	Locate	Configure Web				
		Port Monitor			Configuration -	2 NPort(s)		
- >	- M	C <u>O</u> M Mapping	Δ	Model	MAC Address	IP Address	Server Name	Status
		IP Address Report		NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	NPIA5450AL 2	Unlock
	SAC.	Ir Address Report		NPort IA5450A	00:90:E8:12:34:51	192.168.34.100	NPIA5450A_12	

2. Next, click Monitor → Add Target and select your targets from the list, and then click OK.

Êxit A		<u>A</u> dd Target <u>R</u> emove Target					Add I	l IPort				
Functi		Load Configured COM Port	Monitor - Stopped - 0 NPort(s)									
NPort	_	Settings		MAC Address	IP Address	Alive		Select Fro	om Listi R	escan	Select A	II Clear All
- 🔂 Monit		<u>G</u> o						No	Model	MAC Addre	ss	IP Address
IP Ad	dress F	ieport						☑1 ☑2	NPort IA5450AI NPort IA5450A	00:90:E8:1 00:90:E8:1		192.168.127.254 192.168.34.100
							c) Input Mar				
										adel arts	NPort 51 1 Port(s)	

Once the Monitor function is running:

3. The NPort IA5150A/IA5250A list will appear on the Monitor screen.

🐝 NPort Administrator	Mon	tor								
j <u>F</u> ile <u>F</u> unction Manitar <u>V</u> iew <u>H</u> elp										
Exit Add Remo	ve	Go	Stop							
Function	Function Monitor - Stopped - 2 NPort(s)									
E-🔊 NPort	No	Δ	Model	MAC Address	IP Address	Alive				
Configuration	1		NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	Not Alive				
🖾 Monitor	2		NPort IA5450A	00:90:E8:12:34:51	192.168.34.100	Not Alive				
- 🖾 Port Monitor	L									
🔣 🔣 COM Mapping	L									
IP Address Report										

4. Right click the panel and select Settings.

🔹 NPort Administrator-	Monitor						
<u> </u>	w <u>H</u> elp						
Exit Add Remov	ve Go	Stop					
Function		Мо	onitor	- Stopped	i - 2 NPort(s)		
⊡ NPort	No 🛆	Model	MAC A	Address	IP Address	Alive	
Configuration Configu	1 2	NPort IA5450A				Not Alive Not Alive	

5. Select or de-select **Monitor I tems**. Use the single arrowhead buttons to move highlighted items from one box to the other. Use the double arrowhead buttons to move all items in one box to the other.

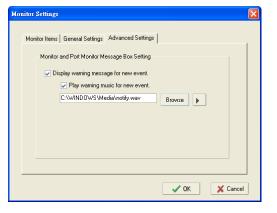
Monitor Settings Monitor Items General Settings	Advanced S	ettings	
De-selected Items Server Name COM Number	> >> <	Selected Items MaCa Address IP Address Alive	↑
Load Default		√ 0K	X Cancel

6. Select a **Refresh Rate** (the default is 3 seconds) on the General Settings page.

Mo	nitor Settings				X
	Monitor Items	General Se	ettings Advanced Settings	1	1
	Refres	n Rate:	3	Second(s)	
	Au	o save mon	itored NPort list.		
				🗸 ОК	🗙 Cancel

7. On the Advanced Settings page, select Display warning message for new event and/or Play warning music for new event. In the second case, you must enter the path to the WAV file that you want to be played. "New event" means that one of the NPort IA5150A/IA5250As in the monitor is "Alive" or "Not

Alive," or has lost connection with the Monitor program.



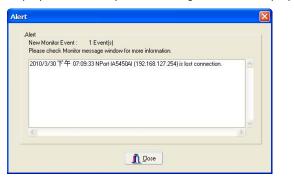
 Right click in the NPort IA5150A/IA5250A list section and select Go to start Monitoring the NPort IA5150A/IA5250A.

🔹 NPort Administrator-	Moni	tor						
<u> </u>	w <u>H</u> e	lp						
Exit Add Remo	ve	Go	Stop					
Function				Monitor - Stopp	bed	- 2 NPort(s)		
🖃 🌆 NPort	No	Δ	Model	MAC Address		IP Address	Alive	
1 Configuration 🖾 Monitor	1 2		NPort IA5450 NPort IA5450			<u>A</u> dd Target		
- Port Monitor					~	<u>R</u> emove Target		
COM Mapping						Load Configured	COM Port	
All a manager report					P	Settings		
	<u> </u>				•	<u>G</u> o		
						Stop		
	-				_			

9. For this example, the NPort IA5150A/IA5250As shown in the list will be monitored.

🐝 NPort Administrator	NPort Administrator-Monitor								
<u>File Function Monitor Vie</u>	ew <u>H</u> elp								
🕺 🚄 👗 Exit Add Remo	we Go	Stop							
Function Monitor - Running - 2 NPort(s)									
E- NPort	No 🛆	Model	MAC Address	IP Address	Alive				
Configuration	1	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	Alive				
- 🖾 Monitor	2	NPort IA5450A	00:90:E8:12:34:51	192.168.34.100	Alive				
- Port Monitor									
COM Mapping									

10. When one of the NPort IA5150A/IA5250As loses connection with the Monitor program, a warning alert will display automatically. The warning music will be played at the same time.



11. In the Monitor screen, you can see that the NPort IA5150A/IA5250As that are "Not Alive" are shown in red color.

🕼 NPort Administrator	Monitor						
<u>File</u> <u>F</u> unction Monitor <u>V</u> ie	w <u>H</u> elp						
Exit Add Remo	ve Go	Stop					
Function	Function Monitor - Running - 2 NPort(s)						
- 🔊 NPort	No 🛆	Model	MAC Address	IP Address	Alive	1	
Configuration	1	NPort IA5450AI	00:90:E8:12:3	192.168.127	Not Alive		
Monitor	2	NPort IA5450A	00:90:E8:12:34:51	192.168.34.100	Alive		
Port Monitor							
🕁 COM Mapping							
- 価償 COM Mapping - 深: IP Address Report							

12. If the NPort IA5150A/IA5250A gets reconnected, a warning will be displayed to remind the user that the NPort IA5150A/IA5250A is now "Alive."



13. The NPort IA5150A/IA5250As that were reconnected, and are now "Alive," will be shown in black color.

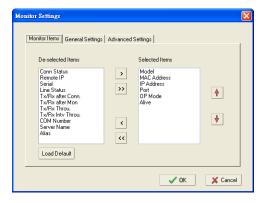
🐝 NPort Administrator	Monitor					
<u> </u>	w <u>H</u> elp					
Exit Add Remo	ve Go	Stop				
Function	Monitor - Running - 1 NPort(s)					
⊡- 🔊 NPort	No 🛆	Model	MAC Address	IP Address	Alive	
 Configuration 	1	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	Alive	
🖾 Monitor						
🔂 Port Monitor						
🛛 📶 COM Mapping						
- 📸 COM Mapping - 🔆 IP Address Report						
• · · ·						

Port Monitor

The process described here is the same as in the previous "Monitor" section. The only difference is that you can select more items under Port Monitor than under Monitor.

🐝 NPort Administrator	-Port Mon	itor								
Eile Eunction Port Monitor View Help										
Exit Add Remove	Go	Stop								
Function Port Monitor - Stopped - 4 Port(s)										
E NPort	No 🛆	Model	MAC Address	IP Address	Port	OP Mode				
Configuration	⊡ 1	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	1	Pair Conn. Slave				
Monitor	₽ 2	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	2	Pair Conn. Slave				
Port Monitor	⊠ 3	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	3	Pair Conn. Slave				
COM Mapping	₩4	NPort IA5458AI	00:90:E8:12:34:57	192.168.127.254	4	Pair Conn. Slave				

Select or de-select **Monitor Items**. Use the single arrowhead buttons to move highlighted items from one box to the other. Use the double arrowhead buttons to move all items in one box to the other.



COM Mapping

Windows Administration Suite comes with Windows 95/98/ME/NT/2000/XP/7 Real COM drivers. After you install NPort Administration Suite, there are two ways to set up the NPort IA5150A/IA5250A serial port as your host's remote COM port.

The first way is with **On-line COM Mapping**. On-line COM Mapping will check to make sure that the NPort IA5150A/IA5250A is connected correctly to the network and then install the driver on the host computer.

The second way is with **Off-line COM Installation**, without first connecting the NPort IA5150A/IA5250A to the network. Off-line COM Mapping can decrease the system integrator's effort by solving different field problems. Via off-line installation, users can first process software installation for the host, and then install the NPort IA5150A/IA5250A to different fields.

Use the following procedure to map COM ports:

1. On-line COM Mapping:

Connect NPort IA5150A/IA5250A to the network \rightarrow Set NPort IA5150A/IA5250A to the proper IP address \rightarrow Map COMs to your host \rightarrow Apply Change.

2. Off-line COM Mapping:

Map COMs to your host \rightarrow Apply Change \rightarrow Connect the NPort IA5150A/IA5250A to the network \rightarrow Configure NPort IA5150A/IA5250A's IP address.

On-line COM Mapping

1. Broadcast Search for NPort IA5150A/IA5250As on the network.

NPort Administrator-Configuration								
<u>File Function Configuration</u>	n ⊻iew <u>H</u> elp							
🚊 🔮 😫 Exit Search Search	ilP Locate	Configure	U Web					
Function Configuration - 0 NPort(s)								
E- 🔊 NPort	No 🛆	Model		MAC Address	IP Address	Server Name	Status	
Configuration Configuration Monitor Port Monitor COM Mapping Y: IP Address Report			皇 金 滋	Broadcast Search Specify by IP Address Locate				

2. Select the COM Mapping function group.

🐝 NPort Administrator	-СОМ Марр	ing					
<u>File</u> Eunction COM Mappir	ng ⊻iew <u>H</u> el	þ					
Exit Add Remo		Configure					
Function	COM Mapping - 0 COM						
- 🔊 NPort	No 🛆	Model	IP Address	Port	COM Port	Mode	
Configuration							
Monitor Port Monitor							
COM Mapping							

3. Add the target to which you would like to map COM ports.

🐝 NPort Administrator-CC)M Mapping						
Eile Eunction COM Mappir	ng <u>V</u> iew <u>H</u> elp)					
Exit Add Remo	ve Apply	S Configure					
Function			СОМ Марр	ing - 0 (сом		
🖃 D NPort	No 🛆	Model	IP Address	Port	COM Port	Mode	
Configuration							
🖾 Monitor							
Port Monitor		× 4	dd Target				
COM Mapping	L	R	emove Target				
IP Address Report	L			_			

4. The NPort IA5150A/IA5250A list that appears is the list generated by the previous Broadcast Search. Select the NPort IA5150A/IA5250A to which you would like to map COM ports.

dd NPort				Þ
Select Fro	om List Re	scan Select	t All Clear All	
No	Model	MAC Address	IP Address	ī
⊡ 1	NPort IA5450AI	00:90:E8:12:34:57	192.168.127.254	

5. Select COM Settings to modify COM No., default setting, etc.

🐝 NPort Administrator	-СОМ Марр	ing			
<u>File</u> Eunction COM Mappir	ng ⊻iew <u>H</u> el	p			
📄 🚄 🚢 Exit Add Remo	ve Apply	Configure			
Function			СОМ Мар	ping - 4 COM	
- 🔊 NPort	No 🛆	Model	IP Address	Port COM Port	Mode
Configuration	1	NPort IA5450AI	192.168.127.25	LI LCOMA.	Hi-Performance, FIFO En
- 🖾 Monitor	2	NPort IA5450AI	192.168.12 🔮	Add Target	Hi-Performance, FIFO En
Port Monitor	3	NPort IA5450AI	192.168.12 🖉	D	Hi-Performance, FIFO Er
- 😿 COM Mapping	4	NPort IA5450AI	192.168.12 🚔	<u>R</u> emove Target	Hi-Performance, FIFO En
COM Mapping	L			Enable	
				Disable	
	<u> </u>		P	COM Settings	

6. Select the COM Number. COM ports that are "In use" or "Assigned" will also be indicated in this drop-down list. If you select multiple serial ports or multiple NPort IA5150A/IA5250As, remember to check the "Auto Enumerating" function to use the COM No. you select as the first COM No.

COM Port Settings	COM Port Settings
Port Number: 2 Port(s) Selected. 1st port is Port 1	Port Number: 1 Port(s) Selected. 1st port is Port 1
Basic Settings Advanced Settings Serial Parameters COM Grouping	Basic Settings Advanced Settings Serial Parameters CDM Grouping
COM Number COM7 Auto enumerating COM number for selected ports. Grouping selected port(s) together.	COM Number COM4 (current) (assigned) • COM4 (current) (assigned) • COM5 (in use) Auto enumerat pots. COM9 COM9 COM9 COM9 COM9 COM10 COM11 COM11
✓ DK X Cancel	OK X Cancel

Hi-performance mode is the default for Tx mode. If the driver completes sending data out to the NPort IA5150A/IA5250A, the driver will respond "Tx Empty" to the program.

Under **classical mode**, the driver will not notify the user's program that Tx is completed until all Tx data has been sent out from the NPort IA5150A/IA5250A; this mode will cause lower throughput. If you want to ensure that all data is sent out before further processing, classical mode is recommended.

Enable/Disable Tx/Rx FIFO. If disabled, the NPort IA5150A/IA5250A will send one byte each time the Tx FIFO becomes empty; and an Rx interrupt will be generated for each incoming byte. This will result in a faster response and lower throughput. If you want to use XON/XOFF flow control, we recommend setting FIFO to Disable.

Fast Flush (only flush local buffer)

- For some applications, the user's program will use the Win32 "PurgeComm()" function before it reads or writes data. With our design, after the program uses this Purge Comm() function, the NPort driver will keep querying the NPort's firmware several times to make sure there is really no data queued in the NPort firmware buffer, rather than just flushing the local buffer. This kind of design is used because of some special considerations. However, it might take more time (on the order of several hundred milliseconds) than a native COM1, because it needs to work via Ethernet. That's why the native COM ports on the motherboard can work fast with this function call, but the NPort requires much more time. In order to accommodate other applications that require a faster response time, the new NPort driver implements a new "Fast Flush" option. Note that by default, this function is disabled.
- To begin with, make sure there are some "PurgeComm()" functions being used in your application
 program. In this kind of situation, you might find that your NPort exhibits a much poorer operation
 performance than when using the native COM1 port. Once you have enabled the "Fast Flush" function,
 you can check to see if there has been an improvement in performance.
- By default, the optional "Fast Flush" function is disabled. If you would like to enable this function, from the "NPort Administrator," double click the COM ports that are mapped to the NPort, and then select the "Fast Flush" checkbox. You should find that when "Fast Flush" is enabled, the NPort driver will work faster with "PurgeComm()."

COM Port Settings					
Port Number: 1	Port(s) Selected	l. 1st port is P	Port 1		
Basic Settings Adva	nced Settings	Serial Parame	eters	COM Group	oing
Tx Mode	Hi-Performance	e	•		
FIFO	Enable		•		
Network Timeout	5000	(500-2000)0 ms)		
🖌 Fast Flush (On	ly Flush Local B	uffer)			
Apply All Selec					
		🗸 01	к	🗶 Cane	el

7. The Serial Parameter settings shown here are the default settings when the NPort IA5150A/IA5250A is powered on. However, the program can redefine the serial parameters to different values after the program opens the port via API.

COM Port Settings			X
Port Number: 1	Port(s) Select	ed. 1st port is Port	1
Basic Settings Adva	nced Settings	Serial Parameter	S COM Grouping
Baud Rate	9600	-	
Parity	None	•	
Data Bits	8	•	
Stop Bits	1	•	
Flow Control	None	-	
🗌 Apply All Sele			
		🗸 ОК	X Cancel

8. After setting the COM Mapping, remember to select **Apply Change** to save the information in the host system registry. The host computer will not have the ability to use the COM port until after **Apply Change** is selected.

🐝 NPort Administrator	COM Mapp	ing							
Eile Eunction COM Mappin	ig ⊻iew <u>H</u> elj	P							
Exit Add Remo	ve Apply	Configure							
Function	Function COM Mapping - 4 COM								
E- 🔊 NPort	No 🛆	Model	IP Address	Port	COM Port	Mode			
Configuration	1	NPotter		1 1	COM4 +	Hi-Performance, FIFO End			
- 🖾 Monitor	2	NPo 🖴	<u>A</u> dd Target	2	COM5 +	Hi-Performance, FIFO Ena			
- R Port Monitor	3	NPo 👗	Remove Target	3	COM6 +	Hi-Performance, FIFO Ena			
COM Mapping	4	NPo 📟	Kennove rarget	4	COM7 +	Hi-Performance, FIFO Ena			
P Address Report			Enable						
• ·			Disable						
		P	<u>C</u> OM Settings						
			Apply Change						

9. Select **Discard Change** to tell Administrator NOT to save the COM Mapping information to the host.

🐝 NPort Administrator	СОМ Марр	ing					
Eile Eunction COM Mappir	ng <u>V</u> iew <u>H</u> elj	2					
Exit Add Remo	ve Apply	Configure					
Function				COM Mappir	g - 4	сом	
🖃 🔊 NPort	No 🛆	Model		IP Address	Port	COM Port	Mode
Configuration	1	NPort IA5450	<u>_</u>	A117 1		COM4 +	Hi-Performance, FIFO Ena
- 🖾 Monitor	2	THE OR IMONOG	2	<u>A</u> dd Target		COM5 +	Hi-Performance, FIFO Ena
- 🚾 Port Monitor	3	NPort IA5450	≚.	Remove Target		COM6 +	Hi-Performance, FIFO Ena
🔣 📶 📶 📶 📶	4	NPort IA5450				COM7 +	Hi-Performance, FIFO Ena
COM Mapping				<u>E</u> nable			
•				<u>D</u> isable			
			P	COM Settings			
			H	Apply Change			
				Discard Change			

10. To save the configuration to a text file, select **Export COM Mapping**. You will then be able to import this configuration file to another host and use the same COM Mapping settings in the other host.

K NPort Administrator						
Exit Add Remo		Configure				
Function			СОМ Маррі	ng - 4	сом	
⊡ NPort	No 🛆	Model	IP Address	Port	COM Port	Mode
Configuration Monitor Port Monitor	1 2 3 4	NPort IA5450AI NPort IA5450AI NPort IA5450AI NPort IA5450AI	192.168.127.254 192.168.127.254 192.168.127.254 192.168.127.254	1 2 3 4	COM4 + COM5 + COM6 + COM7 +	Hi-Performance, FIFO En Hi-Performance, FIFO En Hi-Performance, FIFO En Hi-Performance, FIFO En
COM Mapping	-		Add Target		COM7 +	HP enomance, FIFO En
			Enable			
			Disable			
		1	COM Settings			
			Apply Change			
			Discard Change			
	<	4	Export COM Maj	ping		>
Message Log - 0 Monitor Loc	, ol		Import COM Maj	ping		

Off-line COM Mapping

 Add a target by inputting the IP address and selecting the Model Name without physically connecting the NPort IA5150A/IA5250A to the network.

Select Fro	m List	Res	can	Selec	t All Clear A	
No	Model		MAC Add	ress	IP Address	
🖲 Input Man	ually	IP A	ddress	192.16	8.127.254	
		Mod	el	NPort	IA5450A	-
		Port	s	4 Port(:	5)	

2. Modify the port settings as needed.

🐝 NPort Administrator	-СОМ Марр	ing							
<u>File Function</u> COM Mappir	ng <u>V</u> iew <u>H</u> elj	5							
Exit Add Remo		Configure							
Function	Function COM Mapping - 4 COM								
⊡- → NPort	No 🛆	Model	IP A	.ddress	Port	COM Port	Mode		
🗌 🚺 Configuration	1	NPort IA5450A	192	168.127.254	1	COM4 +	Hi-Performance, FIFO Er		
- 🖾 Monitor	2	NPort IA5450A	192	168.127.254	2	COM5 +	Hi-Performance, FIFO Er		
- 🖾 Port Monitor	3	NPort IA5450A		.168.127.254	3	COM6 +	Hi-Performance, FIFO E		
🔣 COM Mapping	4	NPort IA5450A	192	.168.127.254	4	COM7 +	 Hi-Performance, FIFO E 		
P Address Report			2	<u>A</u> dd Target		-			
			\cong	<u>R</u> emove Targ	et				
				Enable					
				Disable					
			F	COM Settings					
				Apply Chang	;				

3. Right click in the NPort list section and select Apply Change.

🐝 NPort Administrator	-СОМ Марр	ing					
Eile Eunction COM Mappir	ng ⊻iew <u>H</u> e	lp					
Exit Add Remo		Configure					
Function			CON	м Маррії	ng - 4	сом	
- NPort	No 🛆	Model	IP Addr	ress	Port	COM Port	Mode
Configuration Monitor Ont Monitor COM Mapping	1 2 3 4	NPort IA5450A NPort IA5450A NPort IA5450A NPort IA5450A	192.16 192.16	8.127.254 8.127.254 8.127.254 8.127.254 8.127.254	1 2 3 4	COM4 + COM5 + COM6 + COM7 +	Hi-Performance, FIFO Enx Hi-Performance, FIFO Enx Hi-Performance, FIFO Enx Hi-Performance, FIFO Enx
∰: IP Address Report	Aeport		~	<u>A</u> dd Target Remove Tar Enable	get		
				Disable COM Settins		_	
				Apply Chan;			
				Discard Chai	nge		

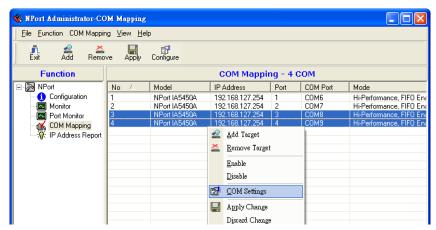
COM Grouping

The "COM Grouping" function is designed to simulate the multi-drop behavior of serial communication over an Ethernet network. COM Grouping allows you to create a COM Group and redirect data from it to several physical COM ports on NPort device servers. With COM Grouping, you will be able to control multiple physical serial ports simultaneously by operating only one COM port.

Creating a COM Group

Follow the steps below to add multiple COM ports into one group:

 Select serial port(s) for the group that you are going to create, and right-click to select COM Settings.



 Select a COM number for this COM group. You may select one of the ports already assigned to a member of the COM Group. However, once the COM Group is configured, all of the original COM number(s) within the group will be released simultaneously.

COM Port Settings	×
Port Number: 2 Port(s) Selected. 1st port is Port 3 Basic Settings Advanced Settings Serial Parameters COM Grouping	1
COM Number COM8 (current) (in use)	
🗸 OK 🔀 Cancel	



ATTENTION

The COM Grouping function only supports Windows NT, 2000, and later. The maximum number of ports for each group is 32.

3. Select the Grouping selected port(s) together checkbox.

COM Port Settings
Port Number: 2 Port(s) Selected. 1st port is Port 3
Basic Settings Advanced Settings Serial Parameters COM Grouping
COM Number COM10 -
 Auto enumerating COM number for selected ports.
Grouping selected port(s) together.
V OK X Cancel

4. On the **COM Grouping** page, you can set "Read" and "Write" permissions for every serial port. It is necessary to set **Signal Status** in order to control the data transmission with specified control signals (e.g., DTR/RTS). You can assign one serial port whose signals will be taken into account by the COM Group.

COM Port Settings
Port Number: 2 Port(s) Selected. 1st port is Port 3
Basic Settings Advanced Settings Serial Parameters COM Grouping Serial ports:
IP Address Port Read Write Signal Status 192.168.127.254 3 ▼ ▼ ▼ 192.168.127.254 4 ▼ ▼ ▼
→ OK X Cancel

5. Click OK, and confirm that the serial ports that were assigned. The COM Port column confirms that your selected ports are labeled as part of a "Group." You will be able to view the serial ports that were assigned to and removed from the Group. Click **Apply** to apply the settings.

🐝 NPort Administrator-CO	M Mapping					
<u>File</u> Eunction COM Mappin	g ⊻iew <u>H</u> elp	2				
Exit Add Remov	_{/e} Apply	Configure				
Function COM Mapping - 4 COM						
⊡ NPort	No 🛆	Model	IP Address	Port	COM Port	Mode
🚺 Configuration	1	NPort IA5450A	192.168.127.254	1	COM6	Hi-Performance, FIFO Er
Monitor	2	NPort IA5450A	192.168.127.254	2	COM7	Hi-Performance, FIFO Er
Port Monitor	3	NPort IA5450A	192.168.127.254	3	COM10 (Group)	Hi-Performance, FIFO Et
	4	NPort IA5450A	192.168.127.254	4	COM10 (Group)	Hi-Performance, FIFO Er
COM Mapping						

6. Finally, click Yes to confirm.

Informa	tion 🔀
٩	Do you want to apply the changes?
	Yes Cancel

Deleting a COM Group

Follow the steps below to delete a COM Group and then auto-assign COM numbers for each port in the Group:

1. Select all serial ports in the Group you are deleting and then right-click to select COM Settings.

🔹 NPort Administrator-CO	OM Mapping					
<u> </u>	ng <u>V</u> iew <u>H</u> el	p				
Exit Add Remove Apply Configure						
Function			COM Mappir	ng - 4 C	ом	
	No 🛆	Model	IP Address	Port	COM Port	Mode
Configuration	1	NPort IA5450A	192.168.127.254	1	COM6	Hi-Performance, FIFO Er
Monitor	2	NPort IA5450A	192.168.127.254	2	COM7	Hi-Performance, FIFO Er
🔤 🔤 Port Monitor	3	NPort IA5450A	192.168.127.254	3	COM10 (Group)	Hi-Performance, FIFO Er
🔣 🔣 📶 COM Mapping	4	NPort IA5450A	192 168 127 254	4	COM10 (Group)	Hi-Performance, FIFO Er
IP Address Report	L		🔮 Add Target		-	
· · ·			👗 <u>R</u> emove Target			
			<u>E</u> nable			
	L		Disable			
			🛐 COM Settings			
			Apply Change			
			D <u>i</u> scard Change			

2. Select a COM number for this COM group and check the **Auto enumerating COM number for selected ports** to use the COM number you select as the first starting COM number, and then click OK.

COM Port Settings
Port Number: 2 Port(s) Selected. 1st port is Port 3
Basic Settings Advanced Settings Serial Parameters COM Grouping
COM Number COM11 -
Auto enumerating COM number for selected ports. Grouping selected port(s) together.
OK

3. You will be able to view the serial ports that were assigned to and removed from the Group. Click **Apply** to apply the settings.

🐝 NPort Administrator-CC	M Mapping					
<u> </u>	ng <u>V</u> iew <u>H</u> elj	p				
Exit Add Remo	ve Apply	Configure				
Function	Function COM Mapping - 4 COM					
- 🔊 NPort	No 🛆	Model	IP Address	Port	COM Port	Mode
Configuration	1	NPort IA5450A	192.168.127.254	1	COM6	Hi-Performance, FIFO Ena
Monitor	2	NPort IA5450A	192.168.127.254	2	COM7	Hi-Performance, FIFO Ena
- R Port Monitor	3	NPort IA5450A	192.168.127.254	3	COM11	Hi-Performance, FIFO Ena
	4	NPort IA5450A	192.168.127.254	4	COM12	Hi-Performance, FIFO Ena
COM Mapping						

4. Finally, click Yes to confirm.

Informa	ntion 🔀
į,	Do you want to apply the changes?
[Yes Cancel

Adding a Port to a COM Group

Follow the steps below to add a serial port into an existing COM Group:

1. Select the serial port that you are adding and right-click to select COM Settings.

🐝 NPort Administrator-CO	OM Mapping						
Eile Eunction COM Mappi	ng <u>V</u> iew <u>H</u> el	p					
📄 🤗 🎽	ove Apply	Configure					
Function				COM Mappir	ng - 6 C	юм	
⊡-≫ NPort	No 🛆	Model	IF	Address	Port	COM Port	Mode
Configuration	1	NPort IA5450A	19	92.168.127.254	1	COM6	Hi-Performance, FIFO Er
Monitor	2	NPort IA5450A	19	32.168.127.254	2	COM7	Hi-Performance, FIFO Er
Port Monitor	3	NPort IA5450A	19	92.168.127.254	3	COM10 (Group)	Hi-Performance, FIFO Er
🔣 COM Mapping	4	NPort IA5450A	19	92.168.127.254	4	COM10 (Group)	Hi-Performance, FIFO Er
P Address Report	5	NPort IA5250A		32.168.127.253	1	COM11	Hi-Performance, FIFO Er
WWW. II Address riepoir	6	NPort IA5250A	10	92 168 127 253	2	COM12	Hi-Performance, FIFO Er
	L		2	<u>A</u> dd Target			
			~	<u>R</u> emove Target			
	<u> </u>			<u>E</u> nable			
				<u>D</u> isable			
			F	<u>C</u> OM Settings			
				Apply Change			
				Discard Change			

 Select the COM number of the COM Group you are adding and check mark the Grouping selected port(s) together check box and then click OK.

COM Port Settings	×
Port Number: 1 Port(s) Selected. 1st port is Port 6	
Basic Settings Advanced Settings Serial Parameters COM Grouping	1
COM Number COM10 (Group) -	
 Auto enumerating COM number for selected ports. 	
Grouping selected port(s) together.	
🗸 OK 🛛 🗶 Cancel	

3. You will be able to view the serial ports that were assigned to and removed from the Group. Click **Apply** to apply the settings.

🐝 NPort Administrator-CO	M Mapping					
<u><u>File</u> Eunction COM Mappin</u>	g <u>V</u> iew <u>H</u> elj	0				
Exit Add Remov	/e Apply	Configure				
Function	Function COM Mapping - 6 COM					
	No 🛆	Model	IP Address	Port	COM Port	Mode
Configuration	1	NPort IA5450A	192.168.127.254	1	COM6	Hi-Performance, FIFO Er
Monitor	2	NPort IA5450A	192.168.127.254	2	COM7	Hi-Performance, FIFO Er
- 🖾 Port Monitor	3	NPort IA5450A	192.168.127.254	3	COM10 (Group)	Hi-Performance, FIFO Er
	4	NPort IA5450A	192.168.127.254	4	COM10 (Group)	Hi-Performance, FIFO Er
COM Mapping	5	NPort IA5250A	192.168.127.253	1	COM11	Hi-Performance, FIFO Er
W, II Address hepot	6	NPort IA5250A	192.168.127.253	2	COM10 (Group)	Hi-Performance, FIFO Er

4. Finally, click Yes to confirm.

Inform	ation 🔀
į,	Do you want to apply the changes?
(Yes Cancel

Removing a Port from a COM Group

Follow the steps below to remove a serial port from a COM Group:

1. Select a serial port in the Group and right-click to select COM Settings.

🐝 NPort Administrator-CC	M Mapping						
<u> </u>	ng <u>V</u> iew <u>H</u> el	P					
🗼 🗳 🎽 Exit Add Remo	ve Apply	Configure					
Function			С	OM Mappir	ng - 6 C	ом	
⊡-≫ NPort	No 🛆	Model	IP A	Address	Port	COM Port	Mode
Configuration	1	NPort IA5450A NPort IA5450A	192	.168.127.254 .168.127.254	1	COM6 COM7	Hi-Performance, FIFO Er Hi-Performance, FIFO Er
Port Monitor	3 4 5	NPort IA5450A NPort IA5450A NPort IA5250A	192	.168.127.254 .168.127.254 .168.127.253	3 4 1	COM10 (Group) COM10 (Group) COM11	Hi-Performance, FIFO Er Hi-Performance, FIFO Er Hi-Performance, FIFO Er
	6	NPort IA5250A	192	168 127 253	2	COM10 (Group)	Hi-Performance, FIFO Er
	L		2	<u>A</u> dd Target		-	
			~	<u>R</u> emove Targe	t		
				<u>E</u> nable			
				<u>D</u> isable			
			S	<u>C</u> OM Settings			
			H	Apply Change			
				Discard Chang	e		

2. Select a COM number that is not in use or assigned to a Group and click OK.

COM Port Settings	×
Port Number: 1 Port(s) Selected. 1st port is Port 6	
Basic Settings Advanced Settings Serial Parameters COM Grouping	
COM Number COM12 -	
 Auto enumerating COM number for selected ports. 	
Grouping selected port(s) together.	
🗸 OK 🔀 Cancel	

3. You will be able to view the serial ports that were assigned to and removed from the Group. Click **Apply** to apply the settings.

🐝 NPort Administrator-CO	M Mapping					
<u>File</u> Function COM Mappin	ig <u>V</u> iew <u>H</u> elp	p				
Exit Add Remo		Configure				
Function			COM Mappir	ng - 6 C	ом	
	No 🛆	Model	IP Address	Port	COM Port	Mode
🗌 🗋 Configuration	1	NPort IA5450A	192.168.127.254	1	COM6	Hi-Performance, FIFO Ena
Monitor	2	NPort IA5450A	192.168.127.254	2	COM7	Hi-Performance, FIFO End
Port Monitor	3	NPort IA5450A	192.168.127.254	3	COM10 (Gro	Hi-Performance, FIFO Ena
COM Mapping	4	NPort IA5450A	192.168.127.254	4	COM10 (Gro	Hi-Performance, FIFO Ena
P Address Report	5	NPort IA5250A	192.168.127.253	1	COM11	Hi-Performance, FIFO Ena
	6	NPort IA5250A	192.168.127.253	2	COM12	Hi-Performance, FIFO Ena

4. Finally, click Yes to confirm.

Informa	tion 🔀
٩	Do you want to apply the changes?
	Yes Cancel

Modify Ports in a COM Group

In the following subsections we examine three ways in which the serial ports in a COM Group can be modified:

Changing the COM Number of a COM Group

1. Select all serial ports in the Group and right-click to select COM Settings.

NPort Administrator-CO							
File Function COM Mappin	ig <u>V</u> iew <u>H</u> elp)					
🚊 🚄 🎽 Exit Add Remo	ve Apply	Configure					
Function				COM Mappir	ng - 4 C	юм	
⊡-≫ NPort	No 🛆	Model		P Address	Port	COM Port	Mode
Configuration	1	NPort IA5450A	•	192.168.127.254	1	COM6	Hi-Performance, FIFO I
Monitor	2	NPort IA5450A	•	192.168.127.254	2	COM7	Hi-Performance, FIFO
- Reg Port Monitor	3	NPort IA5450A		192.168.127.254	3		Hi-Performance, FIFO
🔣 COM Mapping	4	NPort IA5450A		92 168 127 254	4	COM10 (Group)	Hi-Performance, FIFO
IP Address Report			2	<u>A</u> dd Target			
•			~	<u>R</u> emove Target			
				<u>E</u> nable			
				<u>D</u> isable			
			ð	<u>C</u> OM Settings			
			H	Apply Change			
				D <u>i</u> scard Change			

2. Select a COM number that is not in use or assigned to a Group.

COM Port Settings
Port Number: 2 Port(s) Selected. 1st port is Port 3
Basic Settings Advanced Settings Serial Parameters COM Grouping
COM Number COM12 -
 Auto enumerating COM number for selected ports.
Grouping selected port(s) together.
🗸 OK 🛛 🗶 Cancel

3. Select the Grouping selected port(s) together checkbox and then click OK.

COM Port Settings
Port Number: 2 Port(s) Selected, 1st port is Port 3
Basic Settings Advanced Settings Serial Parameters COM Grouping
COM Number COM12 -
 Auto enumerating COM number for selected ports.
Grouping selected port(s) together.
OK X Cancel

4. You will be able to view the serial ports that were assigned to and removed from the Group. Click **Apply** to apply the settings.

🐝 NPort Administrator-CO)M Mapping					
<u>File</u> Function COM Mappir	ng ⊻iew <u>H</u> elp)				
Exit Add Remo		Configure				
Function			COM Mappir	ng - 4 C	ом	
⊡-≫ NPort	No 🛆	Model	IP Address	Port	COM Port	Mode
🔢 🔂 Configuration	1	NPort IA5450A	192.168.127.254	1	COM6	Hi-Performance, FIFO Et
Monitor	2	NPort IA5450A	192.168.127.254	2	COM7	Hi-Performance, FIFO Er
Port Monitor	3	NPort IA5450A	192.168.127.254	3	COM12 (Group)	Hi-Performance, FIFO Er
	4	NPort IA5450A	192.168.127.254	4	COM12 (Group)	Hi-Performance, FIFO Et
COM Mapping						

5. Finally, click Yes to confirm.

Inform	ation 🔀
į	Do you want to apply the changes?
	Yes Cancel

Changing Advanced Settings and Serial Parameters of the

COM Group

1. Check the port specified on the **COM Grouping** page as the signal port.

соь	d Port Settings					
F	Port Number: 1	Port(s)	Selected	l. 1st port	is Port 3	
Ba	asic Settings Adva	inced S	ettings 🛛	Serial Par	ameters COM	Grouping
	Serial ports:					
	IP Address	Port	Read	Write	Signal Status	
	192.168.127.254 192.168.127.254	-	M	N		
				-	ок 🗶	Cancel

2. Select the "Signal Status" controlled port and then right-click and select COM Settings.

😵 NPort Administrator-CO	OM Mapping						
<u>File</u> <u>Function</u> COM Mappi	ng <u>V</u> iew <u>H</u> el	р					
👖 🔮 🎽 Exit Add Remo	ove Apply	Configure					
Function			C	COM Mappir	ng - 4 C	юм	
⊡- → NPort	No 🛆	Model	IP.	Address	Port	COM Port	Mode
 Configuration 	1	NPort IA5450A	19	2.168.127.254	1	COM6	Hi-Performance, FIFO E
- 🚾 Monitor	2	NPort IA5450A	19	2.168.127.254	2	COM7	Hi-Performance, FIFO E
- Re Port Monitor	3	NPort IA5450A	19	2 168 127 254	3	COM10 (Group)	Hi-Performance, FIFO E
🔣 COM Mapping	4	NPort IA5450A	2	<u>A</u> dd Target		COM10 (Group)	Hi-Performance, FIFO E
IP Address Report			~	<u>R</u> emove Target			
	L			<u>E</u> nable			
				<u>D</u> isable			
			B	<u>C</u> OM Settings			
				Apply Change			
				Discard Change			
						-	

3. The Advanced Settings and Serial Parameters pages will be available for modification.

COM Port Settings			\mathbf{X}
Port Number: 1 Port(s) S	ielected. 1st port is	s Port 3	
Basic Settings Advanced Set	tings Serial Para	ameters COM Grouping	1
			1
Tx Mode H	Hi-Performance	•	
FIFO	Enable	•	
Network Timeout 5	5000	(500-20000 ms)	
Ľ			
Fast flush (only flush)	sh local buffer)		
Apply all selected	ports		
		OK 🗙 Cancel	
			ļ
COM Port Settings			×
COM Port Settings			×
	elected. 1st port is		×
Port Number: 1 Port(s) S	elected. 1st port is	s Port 3	×
	elected. 1st port is	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set	elected. 1st port is tings Serial Para	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate	ielected. 1st port is tings Serial Para 9600	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate Parity	elected. 1st port is tings Serial Para 9600 None	s Port 3]
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate Parity Data Bits	ielected. 1st port is tings Serial Para 9600	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate Parity	ielected. 1st port is tings Serial Para 9600 None 8	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate Parity Data Bits Stop Bits Flow Control	ielected. 1st port is tings Serial Para 9600 None 8 1 None	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate Parity Data Bits Stop Bits	ielected. 1st port is tings Serial Para 9600 None 8 1 None	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate Parity Data Bits Stop Bits Flow Control	ielected. 1st port is tings Serial Para 9600 None 8 1 None	s Port 3	
Port Number: 1 Port(s) S Basic Settings Advanced Set Baud Rate Parity Data Bits Stop Bits Flow Control	ielected. 1st port is tings Serial Para 9600 None 8 1 None	s Port 3	

Changing the Serial Port Specified as Signal Port for the COM

Group

1. Selecta serial port in the Group and then right-click and select COM Settings.

🔹 NPort Administrator-COM Mapping								
g <u>V</u> iew <u>H</u> elp	۱							
Exit Add Remove Apply Configure								
			COM Mappir	ng - 4 C	юм			
No 🛆	Model	IF	P Address	Port	COM Port	Mode		
1	NPort IA5450A	1	92.168.127.254	1	COM6	Hi-Performance, FIFO Er		
2	NPort IA5450A	1	92.168.127.254	2	COM7	Hi-Performance, FIFO Er		
3	NPort IA5450A	1	92 168 127 254	3	COM10 (Group)	Hi-Performance, FIFO Er		
4	NPort IA5450A	2	<u>A</u> dd Target		COM10 (Group)	Hi-Performance, FIFO Er		
		~	<u>R</u> emove Target					
			Enable					
			-					
			Disable					
		F	<u>C</u> OM Settings					
			Apply Change					
			Discard Change					
	g View Help ve Apply No / 1 2 3	g View Help ve Apply Configure No A Model 1 NPort IA5450A 3 NPort IA5450A	g View Help ve Apply Configure No Model II 1 NPort IA5450A 1 2 NPort IA5450A 1 3 NPort IA5450A 1 4 NPort IA5450A 2	g View Help ve Åpply Configure COM Mappir No △ Model IP Address 1 NPort IA5450A 192.168.127.254 2 NPort IA5450A 192.168.127.254 3 NPort IA5450A 192.168.127.254 4 NPort IA5450A 192.168.127.254 4 NPort IA5450A 192.168.127.254 4 NPort IA5450A 192.168.127.254 5 Method Help Help Help Help Help Help Help Help	yiew Help ve Apply Configure COM Mapping - 4 C No △ Model IP Address Port 1 NPort IA5450A 192.168.127.254 1 2 NPort IA5450A 192.168.127.254 2 3 NPort IA5450A 192.168.127.254 2 3 NPort IA5450A 192.168.127.254 3 4 NPort IA5450A 192.168.127.254 3 Magnet Enable Disable Sing COM Settings COM Settings	ye Appy Configure COM Mapping - 4 COM No △ Model IP Address Port COM Port 1 NPort IA5450A 192.168.127.254 1 COM6 2 NPort IA5450A 192.168.127.254 2 COM7 3 NPort IA5450A 192.168.127.254 3 COM10 (Group) 4 Add Target Enable 193.168.127.254 1 COM10 (Group) 4 NPort IA5450A 192.168.127.254 3 COM10 (Group) 4 Add Target Enable 193.168.127.254 1 COM10 (Group) 4 NPort IA5450A 193.168.127.254 3 COM10 (Group) 4 Add Target Enable 193.168.127.254 1 COM10 (Group) 4 Apply Change I IP Addres I I		

2. Check the Grouping selected port(s) together check box.

COM Port Settings					
Port Number: 1 Port(s) Selected. 1st port is Port 3					
Basic Settings Advanced Settings Serial Parameters COM Grouping					
COM Number COM10 (current) (Group)					
Grouping selected port(s) together.					
V OK X Cancel					

3. On **COM Grouping** page, you can specify one serial port whose signals will be taken into account by the COM Group and change the Read/Write status for each serial port.

COM Port Settings	×
Port Number: 1 Port(s) Selected. 1st port is Port 3	
Basic Settings Advanced Settings Serial Parameters COM Grouping Serial ports:	
IP Address Port Read Write Signal Status 192.168.127.254 3 Image: Compare the state of the	
V DK X Cancel	

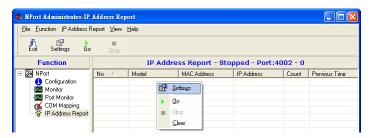
IP Address Report

When NPort IA5150A/IA5250A is used in a dynamic IP environment, users must spend more time with IP management tasks. NPort IA5150A/IA5250A Series products help out by periodically reporting their IP address to the IP location server, in case the dynamic IP has changed.

1. Configure the NPort IA5150A/IA5250A with Dynamic IP settings (DHCP, BOOTP, or DHCP/BOOTP). Assign the remote Auto IP report server's IP address and UDP port.

Configuration	×
Information Model Name NPort 5150A	Accessible IPs Auto Warning IP Address Report Password Basic Network Serial Operating Mode
MAC Address 00:90:E8:99:31:25	Modify IP Address 192.168.127.254
Serial Number 71	✓ Modify Netmask
Firmware Version Ver 1.0	Gateway IP Configuration DHCP
System Uptime 0 days, 00h:02m:41s	DNS Server 2
	Community Name public
	Click the "Modify" check box to modify configuration

2. Select the **IP Address Report**, and click the right mouse button to select **Settings**.



 Configure the Local Listen Port to be the same as the NPort IA5150A/IA5250A's "Auto report to UDP port" setting.

(P Location Settings	X
Local UDP Listen Port	4002
	V DK X Cancel

4. Click Go to start receiving the Auto IP address report from the NPort IA5150A/IA5250A.

<u>File</u> Function <u>I</u> PAddress Report <u>V</u> iew <u>H</u> elp								
Stop								
Function IP Address Report - Stopped - Port:4002 - 0								
No 🛆	Model		MAC Address	IP Address	Count	Previous Time		
		P	Settings					
		•	Go					
			Stop					
L			Clear					
	Report ⊻iew Stop	Stop	No / Model	Report View Help Stop IP Address Report - Stop No / Model MAC Address Stop Stop Stop	Report View Help Stop IP Address Report - Stopped - Port: No / Model MAC Address IP Address Go Stopp Stopp	Report View Help		

7 IP Serial LIB

The following topics are covered in this chapter:

- Overview
- IP Serial LIB Function Groups
- Example Program

Overview

What is IP Serial Library?

IP Serial Library is a Windows library with frequently used serial command sets and subroutines. IP Serial Library is designed to reduce the complexity and poor efficiency of serial communication over TCP/IP. For example, Telnet can only transfer data, but it can't monitor or configure the serial line's parameters.

Why Use IP Serial Library?

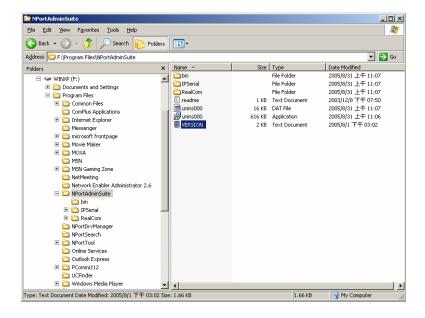
For programmers who are familiar with serial communication, IP Serial Library provides well-designed function calls that have the same style as Moxa's PComm Library.

IP Serial Library is amazingly simple and easy to understand. By including it in your VB, C, or Delphi programming environment, you can program your own TCP/IP application with the ability to control serial communication parameters.

NPort IA5150A/IA5250A serial device servers use 2 TCP ports for communication between the NPort IA5150A/IA5250A and host computer's Real COM driver. The NPort IA5150A/IA5250A uses a data port and command port to provide pure data transfer without decode and encode. Compared to using only one TCP port to control serial communication (such as RFC2217), IP Serial Library uses a command port to communicate with the NPort IA5150A/IA5250A in user's program. IP Serial Library not only runs with excellent efficiency but also runs without any decode or encode problems.

How to install IP Serial Library?

IP Serial Lib comes with the NPort IA5150A/IA5250A Administration Suite. Refer to the IP Serial directory for more detail about the function definitions.



IP Serial LIB Function Groups

Server Control	Port Control	Input/Output Data	Port Status Inquiry	Miscellaneous
nsio_init	nsio_open	nsio_read	nsio_lstatus	nsio_break
nsio_end	nsio_close	nsio_SetReadTimeouts	nsio_data_status	nsio_break_on
nsio_resetserver	nsio_ioctl	nsio_write		nsio_break_off
nsio_checkalive	nsio_flowctrl	nsio_SetWriteTimeouts		nsio_breakcount
	nsio_DTR			
	nsio_RTS			
	nsio_lctrl			
	nsio_baud			
	nsio_resetport			

Example Program

```
char NPortip="192.168.1.10";
char buffer[255];
int port = 1;
int portid;
nsio_init();
portid = nsio_open(NPortip, port);
nsio_ioctl(portid, B9600, (BIT_8 | STOP_1 | P_NONE) );
sleep(1000);
nsio_read(port, buffer, 200);
nsio_close(portid);
nsio_end();
```

/*data buffer, 255 chars */ /*1st port */ /* port handle */ /*initial IP Serial Library */ /*1st port, NPort IP=192.168.1.10 */ /*set 9600, N81 */ /* wait for 1000 ms for data */ /* read 200 bytes from port 1 */ /* close this serial port */ /* close IP Serial Library */

Α

Pinouts and Cable Wiring

The following topics are covered in this appendix:

Port Pinout Diagrams

- Ethernet Port Pinouts
- > RS-232/422/485 (male DB9) Pinouts
- > RS-422/485 (5-contact terminal block) Pinouts for the NPort IA5150A Series
- Power Input and Relay Output Pinouts
- Serial Cable Wiring Diagrams
 - ➢ Female DB9 to Male DB9
 - ➢ Female DB9 to Male DB25
- Ethernet Cables

Port Pinout Diagrams

Ethernet Port Pinouts

Pin	Signal	
1	Tx+	
2	Tx-	
3	Rx+	1 8
6	Rx-	

RS-232/422/485 (male DB9) Pinouts

Pin	RS-232	RS-422, 4-wire	2-wire RS-485
		RS-485	
1	DCD	TxD-(A)	-
2	RxD	TxD+(B)	-
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	-	-	-

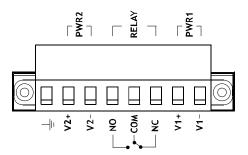
Note: The NPort IA5150A Series's DB9 ports only support RS-232 signals.

RS-422/485 (5-contact terminal block) Pinouts for the NPort

IA5150A Series

Pin	RS-422, 4-wire RS-485	2-wire RS-485] r						
1	-	TxD+(B)							1
2	-	TxD-(A)		M			M	\square	(
3	Data+(B)	RxD+(B)					\Box		_
4	Data-(A)	RxD-(A)		1	2	2	4		
5	GND	GND		Т	2	5	т	5	

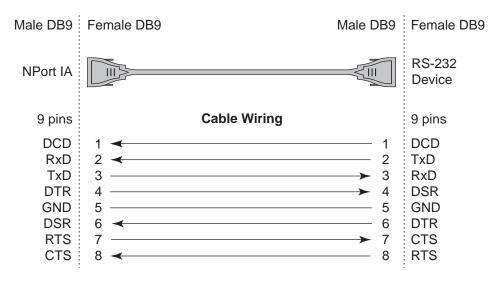
Power Input and Relay Output Pinouts



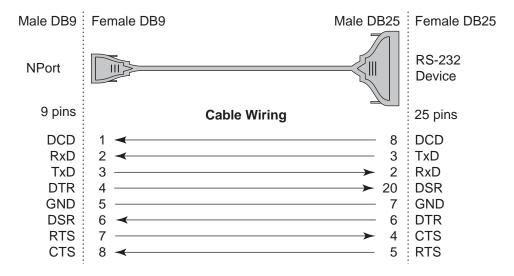
Ŧ	PWR1	PWR2	RELAY
Shielded Ground	DC Power Input	DC Power Input	Normal Open/Close, Relay output

Serial Cable Wiring Diagrams

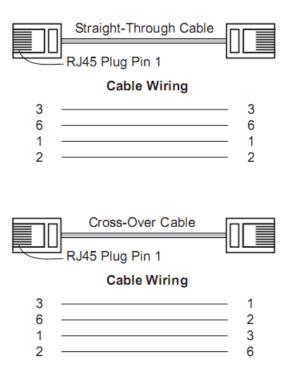
Female DB9 to Male DB9



Female DB9 to Male DB25



Ethernet Cables



Well Known Port Numbers

In this appendix, which is included for your reference, we provide a list of Well Known port numbers that may cause network problems if you set the NPort IA5450A to one of these ports. Refer to RFC 1700 for Well Known port numbers, or refer to the following introduction from the IANA.

The port numbers are divided into three ranges: the Well Known Ports, the Registered Ports, and the Dynamic and/or Private Ports.

The Well Known Ports are those from 0 through 1023.

The Registered Ports are those from 1024 through 49151.

The Dynamic and/or Private Ports are those from 49152 through 65535.

The Well Known Ports are assigned by the IANA, and on most systems, can only be used by system processes or by programs executed by privileged users. The following table shows famous port numbers among the well-known port numbers. For more details, please visit the IANA website:

http://www.iana.or	a/assignments	/port-numbers

TCP Socket	Application Service
0	reserved
1	TCP Port Service Multiplexor
2	Management Utility
7	Echo
9	Discard
11	Active Users (systat)
13	Daytime
15	Netstat
20	FTP data port
21	FTP CONTROL port
23	Telnet
25	SMTP (Simple Mail Transfer Protocol)
37	Time (Time Server)
42	Host name server (names server)
43	Whois (nickname)
49	(Login Host Protocol) (Login)
53	Domain Name Server (domain)
79	Finger protocol (Finger)
80	World Wide Web HTTP
119	Network News Transfer Protocol (NNTP)
123	Network Time Protocol
213	IPX
160 - 223	Reserved for future use

UDP Socket	Application Service
0	reserved
2	Management Utility
7	Echo
9	Discard
11	Active Users (systat)
13	Daytime
35	Any private printer server
39	Resource Location Protocol
42	Host name server (names server)
43	Whois (nickname)
49	(Login Host Protocol) (Login)
53	Domain Name Server (domain)
69	Trivial Transfer Protocol (TETP)
70	Gopler Protocol
79	Finger Protocol
80	World Wide Web HTTP
107	Remote Telnet Service
111	Sun Remote Procedure Call (Sunrpc)
119	Network News Transfer Protocol (NNTP)
123	Network Time Protocol (nnp)
161	SNMP (Simple Network Mail Protocol)
162	SNMP Traps
213	IPX (Used for IP Tunneling)

С

SNMP Agents with MIB II & RS-232 Like Groups

The NPort IA5450A has SNMP (Simple Network Management Protocol) agent software built in. It supports SNMP Trap, RFC1317 RS-232 like groups and RFC 1213 MIB-II. The following table lists the standard MIB-II group, as well as the variable implementation for the NPort IA5450A.

RFC1213 MIB-II Supported SNMP Variables

System MIB	Interfaces MIB	IP MIB	
SysDescr	itNumber	ipForwarding	IcmpInMsgs
SysObjectID	ifIndex	ipDefaultTTL	IcmpInErrors
SysUpTime	ifDescr	ipInreceives	IcmpInDestUnreachs
SysContact	ifType	ipInHdrErrors	IcmpInTimeExcds
SysName	ifMtu	ipInAddrErrors	IcmpInParmProbs
SysLocation	ifSpeed	ipForwDatagrams	IcmpInSrcQuenchs
SysServices	ifPhysAddress	ipInUnknownProtos	IcmpInRedirects
	ifAdminStatus	ipInDiscards	IcmpInEchos
	ifOperStatus	ipInDelivers	IcmpInEchoReps
	ifLastChange	ipOutRequests	IcmpInTimestamps
	ifInOctets	ipOutDiscards	IcmpTimestampReps
	ifInUcastPkts	ipOutNoRoutes	IcmpInAddrMasks
	ifInNUcastPkts	ipReasmTimeout	IcmpOutMsgs
	ifInDiscards	ipReasmReqds	IcmpOutErrors
	ifInErrors	ipReasmOKs	IcmpOutDestUnreachs
	ifInUnknownProtos	ipReasmFails	IcmpOutTimeExcds
	ifOutOctets	ipFragOKs	IcmpOutParmProbs
	ifOutUcastPkts	ipFragFails	IcmpOutSrcQuenchs
	ifOutNUcastPkts	ipFragCreates	IcmpOutRedirects
	ifOutDiscards	ipAdEntAddr	IcmpOutEchos
	ifOutErrors	ipAdEntIfIndex	IcmpOutEchoReps
SysServices	ifOutQLen	ipAdEntNetMask	IcmpOutTimestamps
	ifSpecific	ipAdEntBcastAddr	IcmpOutTimestampReps
		ipAdEntReasmMaxSize	IcmpOutAddrMasks
		IpNetToMediaIfIndex	IcmpOutAddrMaskReps
		IpNetToMediaPhysAddress	
		IpNetToMediaNetAddress	
		IpNetToMediaType	
		IpRoutingDiscards	

Pkts utPkts BadVersions BadCommunityNames
BadVersions BadCommunityNames
BadCommunityNames
ASNParseErrs
TooBigs
NoSuchNames
BadValues
ReadOnlys
GenErrs
TotalReqVars
1IB
TotalSetVars
GetRequests
GetNexts
SetRequests
GetResponses
Traps
utTooBigs
utNoSuchNames
utBadValues
utGenErrs
utGetRequests
utGetNexts

Address Translation MIB	ТСР МІВ	SNMP MIB
		snmpOutGetResponses
		snmpOutTraps
		snmpEnableAuthenTraps

RFC1317: RS-232 MIB Objects

Generic RS-232-like Group	RS-232-like General Port Table	RS-232-like Asynchronous Port
		Group
rs232Number	rs232PortTable	rs232AsyncPortTable
	rs232PortEntry	rs232AsyncPortEntry
	rs232PortIndex	rs232AsyncPortIndex
	rs232PortType	rs232AsyncPortBits
	rs232PortInSigNumber	rs232AsyncPortStopBits
	rs232PortOutSigNumber	rs232AsyncPortParity
	rs232PortInSpeed	
	rs232PortOutSpeed	

The Input Signal Table	The Output Signal Table
rs232InSigTable	rs232OutSigTable
rs232InSigEntry	rs232OutSigEntry
rs232InSigPortIndex	rs232OutSigPortIndex
rs232InSigName	rs232OutSigName
rs232InSigState	rs232OutSigState

Auto IP Report Protocol

NPort device servers provide several ways to configure Ethernet IP addresses. One of them is DHCP Client. When you set up the NPort to use DHCP Client to configure Ethernet IP addresses, it will automatically send a DHCP request over the Ethernet to find the DHCP Server. And then the DHCP Server will send an available IP address to the NPort. The NPort will use this IP address for a period of time after receiving it. But the NPort will send a DHCP request again to the DHCP Server. Once the DHCP Server realizes that this IP address is to be released to other DHCP Client, the NPort then will receive a different IP address. For this reason, users sometimes find that the NPort will use different IP addresses, not a fixed IP address.

In order to know what IP address the NPort is using, you need to set up parameters in Network Settings via Web browser. The figure below is the NPort Web console configuration window. Enter the IP address and the Port number of the PC that you want to send this information to.

ΜΟΧΛ°	Total Solution for Indu	Total Solution for Industrial Device Networking	
 Model - NPort IA545 Name - NPIA5450AI 		- 192.168.127.253 - 2	
	Gateway IP configuration	Static	
- Main Menu	DNS server 1		
Overview Quick Setup	DNS server 2		
Export/Import	SNMP Settings		
Basic Settings Network Settings	SNMP	⊙ Enable ○ Disable	
- Serial Settings - Operating Settings Accessible IP Settings	Community name Contact	public	
- Auto Warning Settings Upgrade Firmware	Location		
- Monitor	IP Address Report		
Change Password Load Factory Default	Auto report to IP Auto report to UDP		
Save/Restart	port Auto report period	4002 10 seconds Submit	

And then you can develop your own programs to receive this information from the NPort. Here is NPort's Auto IP Report Protocol. We provide an example for you to easily develop your own programs. You can find this example on Moxa's website.

Auto IP Report Format

"Moxa", 4 bytes Info[0] Info[1]		Info[n]
---------------------------------	--	---------

Info [n]

Field	ID	Length	Data
Length	1	1	Variable, Length is "Length Field"

ID List

ID Value	Description	Length	Note
1	Server Name	Variable	ASCII char
2	Hardware ID	2	Little-endian
3	MAC Address	6	6 bytes MAC address. If the MAC address is "00-90-E8-01-02-03", the MAC [0] is 0, MAC[1] is 0x90(hex), MAC[2] is 0xE8(hex), and so on.
4	Serial Number	4, DWORD	Little-endian
5	IP Address	4, DWORD	Little-endian
6	Netmask	4, DWORD	Little-endian
7	Default Gateway	4, DWORD	Little-endian
8	Firmware Version	4, DWORD	Little-endian Ver1.3.4= 0x0103040
9	AP ID	4, DWORD	Little-endian

AP ID & Hardware ID Mapping Table

AP ID	Hardware ID	Product
0x80015400	0x540A	NPort IA5450A
0x80015400	0x541A	NPort IA5450AI

Compliance Notice



CE Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take appropriate measures.

Federal Communications Commission Statement

FCC - This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.