Secure Serial Device Servers

Provide Secure Serial-to-Ethernet Communication

Overview

NPort 6000 series secure serial device servers deliver a more reliable serial-to-Ethernet connectivity. NPort 6000 series secure serial device servers can be used to connect any serial device to an Ethernet network, and provide TCP Server, TCP Client, UDP, and Pair-Connection modes to ensure the compatibility of network software. NPort 6000 series secure serial device servers also support Secure TCP Server, Secure TCP Client, Secure Pair-Connection, and Secure Real COM mode for security critical applications such as banking, telecom, access control, and remote site management. All NPort 6000 series device servers support the 802.3af POE standard and can be powered over the Ethernet port.

Secure Data Communication with Standard SSL Protocol

Network security is a very important issue for security-critical applications. This is especially true for data that must be transmitted over the Internet, since the data could be intercepted by third parties. NPort 6000 device servers use standard SSL to implement secure TCP Server, secure TCP Client, secure Pair-Connection, and secure Real COM modes for network data security. NPort 6000 and the PC driver adhere to the SSL standard and negotiate the encryption key automatically. NPort will change the encryption method from DES/3DES and AES automatically to prevent hacker attacks.

Secure Remote Management and Configuration with SSH/SSL

Unauthorized access is one of the biggest headaches for system managers. In addition to IP filtering and password protection, NPort 6000 device servers also provide extra protection from hackers by using SSH and SSL. To configure an NPort 6000 device server securely, use a web browser that supports https (e.g., Internet Explorer) to open NPort 6000's web page, or a Terminal Emulator that supports SSH (e.g., PuTTY) to open NPort 6000's text-based menu.

HW Encryption Engine

NPort 6000 device servers have a powerful hardware encryption engine and support the complete DES/3DES/AES encryption algorithms. For DES and 3DES, NPort 6000 supports ECB, CBC, CFB, and OFB modes. For AES, NPort 6000 supports ECB, CBC, CFB, OFB, and CTR modes with a 128-bit, 192-bit, or 256-bit key. The HW encryption engine gives NPort 6000 a throughput that can reach 250 Kbps for 16-port encryption/decryption access.

802.3af PoE Compliant

NPort 6000 device servers support 802.3af POE (Power Over Ethernet), which means that NPort 6000 can be used without a power adaptor. When NPort 6000 is installed at a site that does not have an available power socket, simply connect the NPort 6000 device server to an Ethernet switch that supports PSE (Power Service Equipment). In addition, NPort 6000's POE feature can be used to provide power redundancy. When the power redundancy feature is active, if the power adaptor fails, NPort 6000 will automatically switch to POE without suffering an interruption in service. When using this feature, be sure to use Ethernet cables that support power inputs (connect the Ethernet cable first, wait until the NPort 6000's power LED turns on, and then connect the power adaptor).

Off-line Port Buffering

For mission-critical applications, data collected via the device server's serial ports cannot be discarded if the Ethernet connection is severed. NPort 6000 series provides a powerful function for just this purpose. When the Ethernet connection is down, data is stored in the NPort 6000's port buffers. Once the Ethernet line has been reconnected, the buffered data will be sent to the intended destination. The default size of the port buffer is 64 KB for each port, but users can increase the port buffer size for NPort 6250/6450/6650 by installing an external SD card.

Any Baudrate Support

In the past, MOXA's device servers only supported the mainstream serial baudrates. However, some applications require using special baudrates, such as 250 Kbps or 500 Kbps. MOXA's NPort 6000 device servers now support any baudrate, allowing special baudrate devices to work properly.

Prevent Data Loss when the Ethernet Fails

NPort 6000 device servers are reliable serial-to-Ethernet products that provide users with secure data transmission and a customer-oriented hardware design. When the Ethernet connection fails, NPort 6000 will queue all of the serial data in its internal 64 KB port buffer. When the Ethernet is reconnected, NPort 6000 will immediately send all of the data stored in the buffer in the order that it was received. Users can expand the storage size by using NPort 6000's SD card expansion feature (available with NPort 6250/6450/6650).

Ethernet Switch Expansion Module is a Real Money Saver (NPort 6450/6650 only)

Although more and more devices are now Ethernet-ready, many legacy devices are only able to connect to a serial interface. The main purpose of device servers such as NPort 6450/6650 is to connect serial devices to Ethernet, and in this way give engineers the option of connecting all of their devices to an integrated Ethernet environment. A problem can arise if both Ethernet-ready and legacy serial devices must be connected from the same location. NPort 6450/6650's Ethernet switch expansion module allows users to add more Ethernet ports to NPort 6450/6650, effectively turning it into a combination Ethernet switch/device server. This means that users no longer need to invest in a more expensive switch or hub to connect all of their devices. Modules are available with copper, multi-mode fiber, or single mode fiber ports. The Ethernet switch expansion modules can also be used to create a cascade topology that consists of a daisy-chain of NPort 6450/6650 device servers.
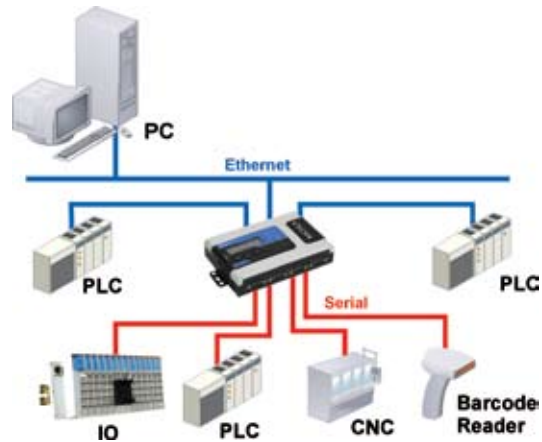
Ethernet Ring Topology with Fast Recovery Mechanism (coming soon)
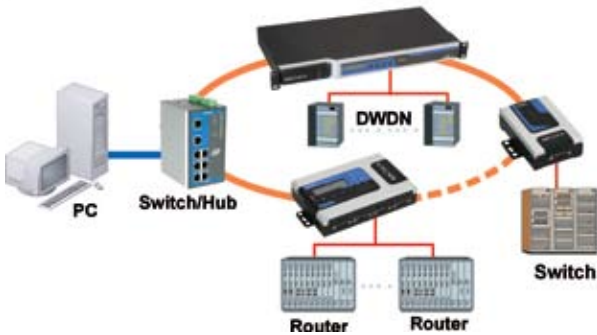
NPort 6000 series supports the Turbo Ring function for the cascade topology. With Turbo Ring, if any segment of the daisy chain ring becomes disconnected, the network will recover in less than 300 ms.

Extend the Distance between Computer and Serial Devices

Connecting serial devices to NPort 6000 device servers gives users the option of using any networked computer to control the serial devices over an Ethernet network (intranet or Internet). MOXA provides Real Com/TTY, TCP Server, and TCP Client modes for computers to connect to devices via NPort 6000. NPort 6000 also supports PPPoE for connecting to ADSL, and DDNS service helps the computers determine where the NPort 6000 device servers are located on the network. In addition, NPort 6250-M-SC and NPort 6250-S-SC provide fiber connections that can be used to extend the Ethernet connection distance. Models of NPort 6450/6650 are also available to extend fiber connections.

Reliable Power Input

NPort 6000 device servers were designed with an industrial-strength power connector to help prevent the power adaptor from getting disconnected. NPort 6000 also supports POE (Power Over Ethernet, compliant with 802.3af). Users can connect NPort 6000 device servers to an Ethernet switch that supports PSE (Power Service Equipment) and then use the Ethernet port as a power source. This feature is particularly useful when power outlets are at a premium.

LCM Makes Installation Easier

NPort 6450/6650's LCM module can help users set up the device server's IP address without first connecting the serial device to a computer. After assigning an IP address to NPort 6450/6650, users can use the built-in "ping" function, which is activated with the push buttons on NPort 6450/6650's cover, to check that the IP address is correct and unique on the network.

Secure Serial Device Server Selection Guide

Model Name		NPort 6150	NPort 6250	NPort 6250-M-SC
LAN	10/100M Ethernet	1 port	1 port	–
	100M Fiber	–	–	1 port, Multi-Mode
	Connector	RJ45	RJ45	SC
	Expansion Slots	–	–	–
	10/100BaseT RJ45 Module	–	–	–
	Multi Mode SC connector Module	–	–	–
	Single Mode SC connector Module	–	–	–
	Parallel Port Module	–	–	–
	Power over Ethernet (IEEE802.3af)	√	√	√
	1.5 KV Magnetic Isolation	√	√	√
Serial Interface	RS-232/422/485	1 port, DB9(M)	2 ports, DB9(M)	2 ports, DB9(M)
	Speed	50 bps to 921.6 Kbps		
	Communication Parameters	Parity: None, Even, Odd, Space, Mark; Data Bits: 5, 6, 7, 8; Stop Bit: 1, 1.5, 2		
	Flow Control (RTC/CTS/ XON/XOFF)	√	√	√
	2 KV Serial Line Isolation	–	–	–
	15 KV ESD Protection	√	√	√
	Any Baudrate mode	√	√	√
	Patented ADDC™	√	√	√
Software Features	Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP, ARP, SSH, SSL		
	Utilities	NPort Search Utility for Windows 95/98/ME/NT/2000/XP/2003		
	OS Driver Support	Windows 95/98/ME/NT/2000/XP/2003/XP x64/2003 x64 COM driver, Linux real TTY driver, Unix		
	Configuration	HTTP/HTTPs/Serial/Telnet Console, or SSH		
Operation Modes	Standard	Real COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Reverse Telnet, Ethernet Modem, Terminal, Reverse Terminal, Printer, PPP Mode, Disabled Mode		
	Secure Functions	Secure Real COM, Secure TCP Server, Secure TCP Client, Secure Pair Connection, SSH, Reverse SSH		
Advanced Built-in Features	HMI LCM display with four push buttons	–	–	–
	Serial Data Log	64 KB	64 KB	64 KB
	Offline Port Buffering	64 KB	64 KB	64 KB
	Expansion Slot for Secure Digital (SD) Card	–	√	√
	Buzzer	√	√	√
	Real-Time Clock	√	√	√
	Watchdog Timer	√	√	√
Power Input	Power Input	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Mechanical	Upper Casing: Aluminum (1 mm)	√	√	√
	External Components: PC (Polycarbonate)	√	√	√
	Lower Casing: SECC Sheet Metal (1 mm)	√	√	√
	Dimensions (W × H × D)	67 x 28 x 100.4 mm (2.63 x 1.1 x 3.95 in)	77 x 28 x 111 mm (3 x 1.1 x 4.37 in)	77 x 28 x 111 mm (3 x 1.1 x 4.37 in)
	DIN-Rail/Wall Mountable	√	√	√
Environmental	Operating temperature	0 to 55°C (32 to 131°F), 5 to 95% RH		
	Storage temperature	-20 to 85°C (-4 to 185°F), 5 to 95% RH		
Regulatory Approvals	Safety	UL UL60950-1, TÜV EN60950-1		
	EMC	FCC Part 15, Subpart B, Class A, CE EN55022 Class A, CE EN55024		
	EN61000-4-2 (ESD)	4 KV contact		
	EN61000-4-4 (EFT)	1 KV (Power)		
	EN61000-4-5 (Surge)	2 KV (Power)		
Warranty		5 years		

Secure Serial Device Server Selection Guide

Model Name		NPort 6250-S-SC	NPort 6450	NPort 6650-8	NPort 6650-16
LAN	10/100M Ethernet	–	1 port	1 port	1 port
	100M Fiber	1 port, Single-Mode	–	–	–
	Connector	SC	RJ45	RJ45	RJ45
	Expansion Slots	–	1	1	1
	10/100BaseT RJ45 Module	–	Optional	Optional	Optional
	Multi Mode SC connector Module	–	Optional	Optional	Optional
	Single Mode SC connector Module	–	Optional	Optional	Optional
	Parallel Port Module	–	Optional	Optional	Optional
	Power over Ethernet (IEEE802.3af)	√	√	√	√
	1.5 KV Magnetic Isolation			√	√
Serial Interface	RS-232/422/485	2 ports, DB9(M)	4 ports, DB9(M)	8 ports, RJ45	16 ports, RJ45
	Speed	50 bps to 921.6 Kbps			
	Communication Parameters	Parity: None, Even, Odd, Space, Mark; Data Bits: 5, 6, 7, 8; Stop Bit: 1, 1.5, 2			
	Flow Control (RTC/CTS/ XON/XOFF)	√	√	√	√
	2 KV Serial Line Isolation	–	–	–	–
	15 KV ESD Protection	√	√	√	√
	Any Baudrate mode	√	√	√	√
	Patented ADDC™	√	√	√	√
Software Features	Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP, ARP, SSH, SSL			
	Utilities	NPort Search Utility for Windows 95/98/ME/NT/2000/XP/2003			
	OS Driver Support	Windows 95/98/ME/NT/2000/XP/2003/XP x64/2003 x64 COM driver, Linux real TTY driver, Unix			
	Configuration	HTTP/HTTPs/Serial/Telnet Console, or SSH			
Operation Modes	Standard	Real COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Reverse Telnet, Ethernet Modem, Terminal, Reverse Terminal, Printer, PPP Mode, Disabled Mode			
	Secure Functions	Secure Real COM, Secure TCP Server, Secure TCP Client, Secure Pair Connection, SSH, Reverse SSH			
Advanced Built-in Features	HMI LCM display with four push buttons	–	√	√	√
	Serial Data Log	64 KB	64 KB	64 KB	64 KB
	Offline Port Buffering	64 KB	64 KB	64 KB	64 KB
	Expansion Slot for Secure Digital (SD) Card	√	√	√	√
	Buzzer	√	√	√	√
	Real-Time Clock	√	√	√	√
	Watchdog Timer	√	√	√	√
Power Input	Power Input	12 to 48 VDC	12 to 48 VDC	100 to 240 VAC, 47 to 63 Hz	100 to 240 VAC, 47 to 63 Hz
Mechanical	Upper Casing: Aluminum (1 mm)	√	√	√	√
	External Components: PC (Polycarbonate)	√	√	√	√
	Lower Casing: SECC Sheet Metal (1 mm)	√	√	√	√
	Dimensions (W × H × D)	77 x 28 x 111 mm (3 x 1.1 x 4.37 in)	158 x 33 x 103 mm (6.22 x 1.29 x 4 in)	440 x 44 x 195 mm (17.32 x 1.73 x 7.67 in)	440 x 44 x 195 mm (17.32 x 1.73 x 7.67 in)
	DIN-Rail/Wall Mountable	√	√	√	√
Environmental	Operating temperature	0 to 55°C (32 to 131°F), 5 to 95% RH			
	Storage temperature	-20 to 85°C (-4 to 185°F), 5 to 95% RH			
Regulatory Approvals	Safety	UL UL60950-1, TÜV EN60950-1			
	EMC	FCC Part 15, Subpart B, Class A, CE EN55022 Class A, CE EN55024			
	EN61000-4-2 (ESD)	4 KV contact			
	EN61000-4-4 (EFT)	1 KV (Power)			
	EN61000-4-5 (Surge)	2 KV (Power)			
Warranty		5 years			

NPort 6150 Series

1-port Secure Serial Device Servers

Features

> **Make your serial devices Internet ready**

> **Versatile socket operating modes, including TCP Server, TCP Client, UDP, Pair Connection, Real COM driver, and RFC2217**

> **Secure Ethernet Data mode for TCP Server, TCP Client, Pair connection, and Real COM driver**

> **Any Baudrate mode for more precise baudrates**

> **2- or 4-wire RS-485 with patented ADDC™ (Automatic Data Direction Control)**

> **Supports 802.3af (Power Over Ethernet)**

> **Enhanced remote configuration via HTTPS and SSH**

> **Port buffering prevents serial data loss when Ethernet is off-line**

Overview

NPort 6150 supports SSL and SSH connections, which means that NPort 6150 can be used to connect a serial device to Ethernet with encryption. The 3-in-1 serial port supports RS-232, RS-422, and RS-485, with the desired interface selected when NPort 6150 is configured.

Secure Data Transmission

Information security is one of the most important concerns when connecting serial devices to Ethernet. NPort 6150 supports SSL and SSH protocols, which ensure that serial data is sent over a secure TCP/IP Ethernet connection. Users can rest assured that their serial data is transmitted securely over the network.

Ordering Information

NPort 6150-US: 1-port RS-232/422/485 to Ethernet Secure Device Server, 110 VAC, US Plug

NPort 6150-EU: 1-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, Euro Plug

NPort 6150-UK: 1-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, UK Plug

NPort 6150-JP: 1-port RS-232/422/485 to Ethernet Secure Device Server, 100 VAC, US Plug

NPort 6150-SAA: 1-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, Australian Plug

NPort 6150-CN: 1-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, US Plug
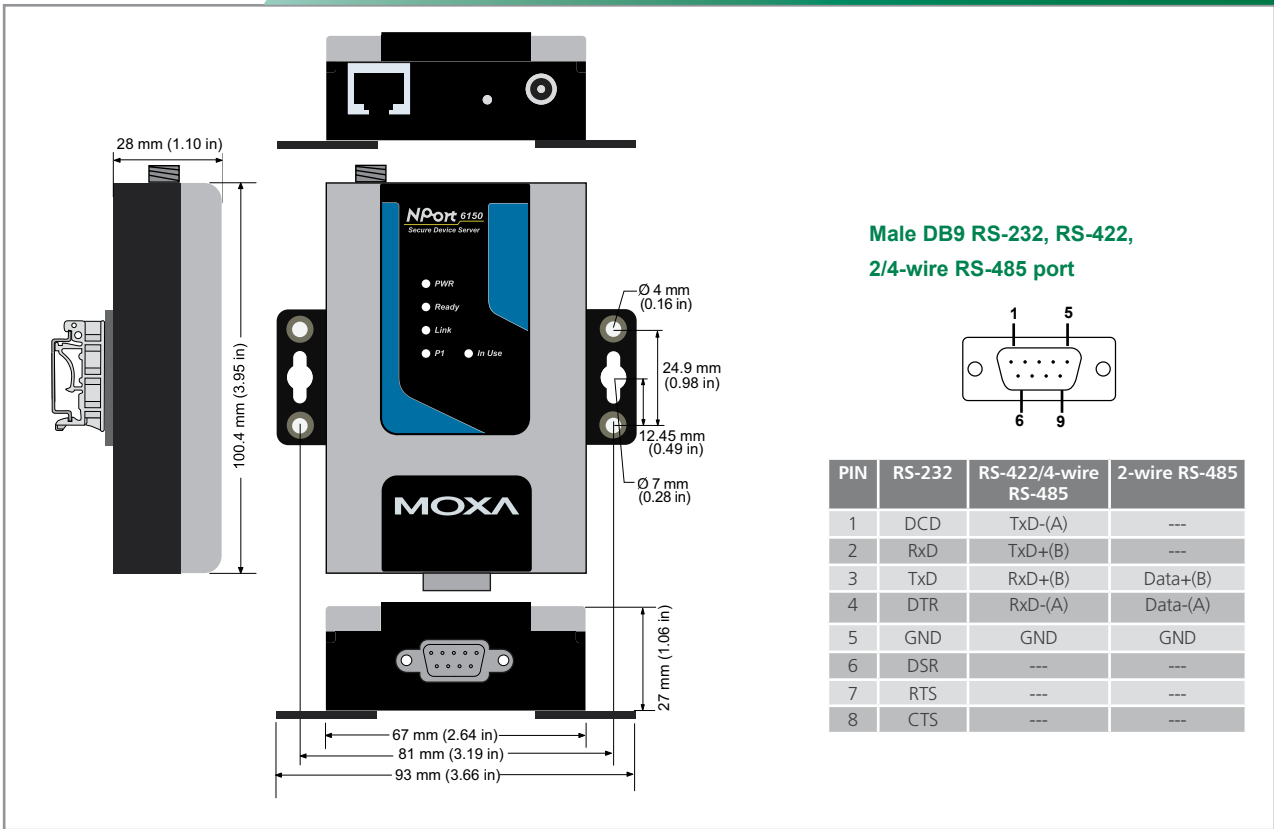
All items include

• 1 NPort 6150

• Document and Software CD-ROM

• Power Adaptor

Optional Accessories

DK-35A: DIN-Rail Mounting Kit (35 mm)

NP21101: DB25(M) to DB9(F) RS-232 Cable, 30 cm

Dimensions

28 mm (1.10 in)

100.4 mm (3.95 in)

24.9 mm (0.98 in)

12.45 mm (0.49 in)

Ø 4 mm (0.16 in)

Ø 7 mm (0.28 in)

27 mm (1.06 in)

67 mm (2.64 in)
81 mm (3.19 in)
93 mm (3.66 in)

NPort *6150*
Secure Device Server

● PWR
● Ready
● Link
● P1   ● In Use

MOXA

Male DB9 RS-232, RS-422, 2/4-wire RS-485 port

1   5
6   9

PIN	RS-232	RS-422/4-wire RS-485	2-wire 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	---	---

⋮ Specifications

LAN
Ethernet: 1 10/100 Mbps, RJ45
Protection: Built-in 1.5 KV magnetic isolation

Serial
No. of ports: 1
Interface: RS-232/422/485, Male DB9

Serial Communication Parameters
Parity: None, Even, Odd, Space, Mark
Data bits: 5, 6, 7, 8
Stop bits: 1, 1.5, 2
Flow control: RTS/CTS, XON/XOFF
Speed: 50 bps to 921.6 Kbps
Console Ports: RS-232 console

Software Features
Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP
Utilities: NPort Search Utility for Windows 95/98/ME/NT/2000/XP/2003
OS Driver Support: Windows 95/98/ME/NT/2000/XP/2003/XP x64/2003 x64 COM driver, Linux real TTY driver, Unix
Configuration: Web/Serial/Telnet console

Power Requirements
Power input: 12 to 48 VDC

Mechanical Specifications
Material: Aluminum (1 mm)

Environmental
Operating Temperature:
0 to 55°C (32 to 131°F), 5 to 95% RH
Storage Temperature:
-20 to 85°C (-4 to 185°F), 5 to 95%RH

Regulatory Approvals
EMC:
CE: EN55022 Class A/EN55024
FCC: FCC Part 15 Subpart B, Class A
Safety:
UL: UL60950-1
TÜV: EN60950-1
Warranty: 5 years

NPort 6250 Series

2-port Secure Serial Device Servers

Features

> **Make your serial devices Internet ready**

> **Versatile socket operating modes, including TCP Server, TCP Client, UDP, Pair Connection, Real Com driver, and RFC2217**

> **Secure Ethernet Data mode for TCP Server, TCP Client, Pair connection, and Real COM driver**

> **Any Baudrate mode for more precise baudrate**

> **1 x 10/100BaseTX (RJ45) or 1 x 100BaseFX (SC connector, Single/Multi mode)**

> **Port buffering function that prevents serial data loss when Ethernet is off-line**

> **Uses SD card to increase port buffering size**

Overview

NPort 6250's serial port can be configured for RS-232, RS-422, or RS-485 (both 2-wire and 4-wire RS-485 are supported). Either copper or fiber (single-mode or multi-mode) can be used for the Ethernet port.

Prevent Data Loss when the Ethernet Fails

NPort 6250 device servers are reliable serial-to-Ethernet products that provide users with secure data transmission and a customer-oriented hardware design. When the Ethernet connection fails, NPort 6250 will queue all of the serial data in its internal 64 KB port buffer. When the Ethernet is reconnected, NPort 6250 will immediately send all of the data stored in the buffer in the order that it was received. Users can expand the storage size by using NPort 6250's SD card expansion feature.

Ordering Information

NPort 6250-US: 2-port RS-232/422/485 to Ethernet Secure Device Server

NPort 6250-M-SC-US: 2-port RS-232/422/485 to one Multi Mode Fiber Ethernet Secure Device Server

NPort 6250-S-SC-US: 2-port RS-232/422/485 to one Single Mode Fiber Ethernet Secure Device Server

All items include

• 1 NPort 6250

• Document and Software CD-ROM

• Power Adaptor

Optional Accessories

DK-35A: DIN-Rail Mounting Kit (35 mm)

NP21101: DB25(M) to DB9(F) RS-232 Cable, 30 cm

Dimensions

NPort 6250-M-SC/6250-S-SC

28 mm (1.10 in)

111 mm (4.37 in)

Ø 4 mm (0.16 in)

24.9 mm (0.98 in)

12.45 mm (0.49 in)

Ø 7 mm (0.28 in)

Expansion slot for SD Card

77 mm (3.30 in)
89 mm (3.50 in)

NPort 6250

27 mm (1.06 in)

77 mm (3.30 in)
101 mm (3.98 in)

Male DB9 RS-232, RS-422, 2/4-wire RS-485 port

PIN	RS-232	RS-422/4-wire RS-485	2-wire RS-485
1	DCD	TxD-(A)	---
2	RxD	TxD+(B)	---
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)

PIN	RS-232	RS-422/4-wire RS-485	2-wire RS-485
5	GND	GND	GND
6	DSR	---	---
7	RTS	---	---
8	CTS	---	---

⋮ Specifications

LAN
NPort 6250-S-SC/NPort 6250-M-SC
Fiber Port: 1 100BaseFX port (SC connector)
NPort 6250
Ethernet: 1 10/100 Mbps, RJ45
Protection: Built-in 1.5 KV magnetic isolation

Optical Fiber
Distance:
Multi mode: 0 to 2 km, 1310 nm (62.5/125 μm, 500 MHz*km)
Single mode: 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))
Min. TX Output:
Multi mode: -20 dBm
Single mode: 0 to 40 km, -5 dBm
Max. TX Output:
Multi mode: -14 dBm
Single mode: 0 to 40 km, 0 dBm
Sensitivity:
Multi mode: -34 to -30 dBm
Single mode: -36 to -32 dBm

Serial
No. of ports: 2
Interface: RS-232/422/485, Male DB9

Serial Communication Parameters
Parity: None, Even, Odd, Space, Mark
Data bits: 5, 6, 7, 8
Stop bits: 1, 1.5, 2
Flow control: RTS/CTS, XON/XOFF

Speed: 50 bps to 921.6 Kbps
Console Ports: RS-232 console x 1 (Port 1)
Storage: One SD socket

Software Features
Protocol: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP
Utilities: NPort Search Utility for Windows 95/98/ME/NT/2000/XP/2003
OS Driver Support: Windows 95/98/ME/NT/2000/XP/2003/XP x64/2003 x64 COM driver, Linux real TTY driver, Unix
Configuration: Web/Serial/Telnet console

Power Requirements
Power input: 12 to 48 VDC

Mechanical Specifications
Material: Aluminum (1 mm)

Environmental
Operating Temperature:
0 to 55°C (32 to 131°F), 5 to 95% RH
Storage Temperature
-20 to 85°C (-4 to 185°F), 5 to 95%RH

Regulatory Approvals
EMC:
CE: EN55022 Class A/EN55024
FCC: FCC Part 15 Subpart B, Class A
Safety:
UL: UL60950-1
TÜV: EN60950-1
Warranty: 5 years

NPort 6450 Series

4-port Secure Serial Device Servers

Features

› **Easy-to-use LCM (Liquid Crystal Module) interface for IP address configuration**

› **Versatile socket operating modes, including TCP Server, TCP Client, UDP, Pair Connection, Real Com driver, and RFC2217**

› **Secure Ethernet Data mode for TCP Server, TCP Client, Pair connection, and Real COM driver**

› **Any Baudrate mode for more precise baudrate**

› **One 10/100BaseTx Ethernet port with 802.3af Power Over Ethernet (POE)**

› **Port buffering function that prevents serial data loss when Ethernet is off-line**

› **SD card slot to increase port buffering memory**

› **Network module socket for network expansion**

: Overview

NPort 6450 is a secure serial device server that has 4 RS-232/422/485 serial ports. An assortment of RS-232/422/485 devices can be connected to the same NPort 6450, with all devices using the same IP address. NPort 6450's Ethernet port can be configured for either a normal TCP/IP connection or secure TCP/IP connection.

: Ordering Information

NPort 6450-US: 4-port RS-232/422/485 to Ethernet Secure Device Server, 110 VAC, US Plug

NPort 6450-EU: 4-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, Euro Plug

NPort 6450-UK: 4-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, UK Plug

NPort 6450-JP: 4-port RS-232/422/485 to Ethernet Secure Device Server, 100 VAC, US Plug

NPort 6450-SAA: 4-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, Australian Plug

NPort 6450-CN: 4-port RS-232/422/485 to Ethernet Secure Device Server, 240 VAC, US Plug

All items include

• 1 NPort 6450

• Document and Software CD-ROM

• Power Adaptor

Optional Accessories (choose one per board)

DK-35A: DIN-Rail Mounting Kit (35 mm)

CBL-RJ45M9-150: 8-pin RJ45 to male DB9 cable, 150 cm

CBL-RJ45F9-150: 8-pin RJ45 to female DB9 cable, 150 cm

CBL-RJ45M25-150: 8-pin RJ45 to male DB25 cable, 150 cm

CBL-RJ45F25-150: 8-pin RJ45 to female DB25 cable, 150 cm

NP21101: DB25(M) to DB9(F) RS-232 Cable, 30 cm

NM-TX01: 1 RJ45 Ethernet Module

NM-FX01-S-SC: 1 Single Mode Fiber Ethernet Module with SC connector

NM-FX01-M-SC: 1 Multi Mode Fiber Ethernet Module with SC connector

NM-FX02-S-SC: 2 Single Mode Fiber Ethernet Modules with SC connectors, and Fiber redundancy

NM-FX02-M-SC: 2 Multi Mode Fiber Ethernet Modules with SC connectors, and Fiber redundancy

NM-PR01: 1 Printer Port Module

| NM-TX01 | NM-FX01-S-SC NM-FX01-M-SC | NM-FX02-S-SC NM-FX02-M-SC | NM-PR01 |

MOXA

Dimensions

Expansion slot for LAN

34.03 mm (1.34 in)

103 mm (4.06 in)

Expansion slot for SD Card

NPort *6450* Secure Device Server

● PWR
● Ready
● Link
● Alarm ● Module
● P1 ● In Use
● P2 ● In Use
● P3 ● In Use
● P4 ● In Use

MENU ∧ ∨ SEL

MOXA

Ø 4 mm (0.16 in)
25 mm (0.98 in)
12.5 mm (0.49 in)
Ø 7 mm (0.28 in)

158 mm (6.22 in)
169 mm (6.65 in)
181 mm (7.13 in)

Male DB9 RS-232, RS-422, 2/4-wire RS-485 port

1   5

6   9

PIN	RS-232	RS-422/4-wire RS-485	2-wire RS-485
1	DCD	TxD-(A)	---
2	RxD	TxD+(B)	---
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)

PIN	RS-232	RS-422/4-wire RS-485	2-wire RS-485
5	GND	GND	GND
6	DSR	---	---
7	RTS	---	---
8	CTS	---	---

⋮ Specifications

LAN
Ethernet: 1 10/100 Mbps, RJ45
Protection: Built-in 1.5 KV magnetic isolation
Optical Fiber (Network Module)
Distance:
Multi mode: 0 to 2 km, 1310 nm (62.5/125 µm, 500 MHz*km)
Single mode: 0 to 40 km, 1310 nm (9/125 µm, 3.5 PS/(nm*km))
Min. TX Output:
Multi mode: -20 dBm, Single mode: 0 to 40 km, -5 dBm
Max. TX Output:
Multi mode: -14 dBm, Single mode: 0 to 40 km, 0 dBm
Sensitivity:
Multi mode: -34 to -30 dBm, Single mode: -36 to -32 dBm
Serial
No. of ports: 4
Interface: RS-232/422/485, Male DB9
Serial Communication Parameters
Parity: None, Even, Odd, Space, Mark
Data bits: 5, 6, 7, 8
Stop bits: 1, 1.5, 2
Flow control: RTS/CTS, XON/XOFF
Speed: 50 bps to 921.6 Kbps

Console Ports: RS-232 console x 1 (port 1)
Storage: One SD socket
Software Features
Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP
Utilities: NPort Search Utility for Windows 95/98/ME/NT/2000/XP/2003
OS Driver Support: Windows 95/98/ME/NT/2000/XP/2003/XP x64/2003 x64 COM driver, Linux real TTY driver, Unix
Configuration: Web/Serial/Telnet console
Power Requirements
Power input: 12 to 48 VDC
Mechanical Specifications
Material: SECC sheet metal (0.8 mm)
Environmental
Operating Temperature: 0 to 55°C (32 to 131°F), 5 to 95% RH
Storage Temperature: -20 to 85°C (-4 to 185°F), 5 to 95%RH
Regulatory Approvals
EMC: CE: EN55022 Class A/EN55024
FCC: FCC Part 15 Subpart B, Class A
Safety: UL: UL60950-1, TÜV: EN60950-1
Warranty: 5 years

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NPort 6650 Series

8/16-port Secure Serial Device Servers

Features

> **Easy-to-use LCM (Liquid Crystal Module) interface for IP address configuration**

> **Versatile socket operating modes, including TCP Server, TCP Client, UDP, Pair Connection, Real Com driver, and RFC2217**

> **Secure Ethernet Data mode for TCP Server, TCP Client, Pair connection, and Real COM driver**

> **Any Baudrate mode for more precise baudrate**

> **1 10/100BaseTx Ethernet port with 802.3af Power Over Ethernet (POE)**

> **Port buffering function that prevents serial data loss when Ethernet is off-line**

> **SD card slot to increase port buffering memory**

> **Network module socket for network expansion**

Overview

NPort 6650 comes in 8-port and 16-port models for connecting higher densities of serial devices to Ethernet. When connecting large numbers of serial devices, or even when connecting to your equipment's console port, you may need higher security when sending data through a TCP connection. NPort 6650 supports secure communication between the computer and serial devices over Ethernet by implementing DES, 3DES, and AES, which are the most popular standards for data encryption.

Ordering Information

NPort 6650-8-US: 8-port RS-232/422/485 to Ethernet Secure Device Server, 110 VAC input

NPort 6650-16-US: 16-port RS-232/422/485 to Ethernet Secure Device Server, 100-240 VAC input

All items include

- 1 NPort 6650
- Document and Software CD-ROM
- Power Cord

- CBL-RJ45F9-150 x 1
- CBL-RJ45M25-150 x 1

Optional Accessories (choose one per board)

DK-35A: DIN-Rail Mounting Kit (35 mm)

CBL-RJ45M9-150: 8-pin RJ45 to male DB9 cable, 150 cm

CBL-RJ45F9-150: 8-pin RJ45 to female DB9 cable, 150 cm

CBL-RJ45M25-150: 8-pin RJ45 to male DB25 cable, 150 cm

CBL-RJ45F25-150: 8-pin RJ45 to female DB25 cable, 150 cm

NP21101: DB25(M) to DB9(F) RS-232 Cable, 30 cm

NM-TX01: 1 RJ45 Ethernet Module

NM-FX01-S-SC: 1 Single Mode Fiber Ethernet Module with SC connector

NM-FX01-M-SC: 1 Multi Mode Fiber Ethernet Module with SC connector

NM-FX02-S-SC: 2 Single Mode Fiber Ethernet Modules with SC connectors, and Fiber redundancy

NM-FX02-M-SC: 2 Multi Mode Fiber Ethernet Modules with SC connectors, and Fiber redundancy

NM-PR01: 1 Printer Port Module

NM-TX01   NM-FX01-S-SC   NM-FX02-S-SC   NM-PR01
           NM-FX01-M-SC   NM-FX02-M-SC

Dimensions

Expansion slot
for LAN

195 mm
(7.68 in)

44 mm
(1.73 in)

31.8 mm
(1.25 in)

440 mm (17.32 in)
468.2 mm (18.34 in)
480 mm (18.9 in)

Expansion slot
for SD card

RJ45 RS-232/422/485 port

PIN	RS-232	RS-422/485 (4W)	RS-485 (2W)	PIN	RS-232	RS-422/485 (4W)	RS-485 (2W)
1	DSR (in)	---	---	5	RxD (in)	RxD+	Data+
2	RTS (out)	TxD+	---	6	DCD (in)	RxD-	Data-
3	GND	GND	GND	7	CTS (in)	---	---
4	TxD (out)	TxD-	---	8	DTR (out)	---	---

Specifications

LAN
Ethernet: 1 10/100 Mbps, RJ45
Protection: Built-in 1.5 KV magnetic isolation
Optical Fiber (Network Module)
Distance:
Multi mode: 0 to 2 km, 1310 nm (62.5/125 μm, 500 MHz*km)
Single mode: 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))
Min. TX Output:
Multi mode: -20 dBm, Single mode: 0 to 40 km, -5 dBm
Max. TX Output:
Multi mode: -14 dBm, Single mode: 0 to 40 km, 0 dBm
Sensitivity: Multi mode: -34 to -30 dBm,
Single mode: -36 to -32 dBm
Serial
No. of ports: 8 (NPort 6650-8), 16 (NPort 6650-16)
Interface: RS-232/422/485, RJ45 (8 pins)
Serial Communication Parameters
Parity: None, Even, Odd, Space, Mark
Data bits: 5, 6, 7, 8
Stop bits: 1, 1.5, 2
Flow control: RTS/CTS, XON/XOFF
Speed: 50 bps to 921.6 Kbps
Console Ports: RS-232 console x1 (port 1)

Storage: One SD socket
Software Features
Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP
Security Protocols: DES/3DES/AES
Utilities: NPort Search Utility for Windows 95/98/ME/NT/2000/XP/2003
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Regulatory Approvals
EMC: CE: EN55022 Class A/EN55024
FCC: FCC Part 15 Subpart B, Class A
Safety: UL: UL60950-1, TÜV: EN60950-1
Warranty: 5 years