NPort® 5600 Desktop Series

8-port RS-232/422/485 serial device servers

- 8 serial ports supporting RS-232/422/485
- Compact desktop design
- 10/100M auto-detecting Ethernet
- Built-in 15 KV ESD protection for all serial signals
- Easy IP address configuration with LCD panel
- Choice of configuration methods: Web console, Telnet console, and Windows utility
- Versatile socket operation modes, including TCP Server, TCP Client, UDP, and Real COM
- SNMP MIB-II for network management
- Built-in recorder: Use your own voice as the alert when exceptions occur

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.

Introduction

NPort® 5600-8-DT device servers can conveniently and transparently connect 8 serial devices to an Ethernet, allowing you to network your existing serial devices with only basic configuration. You can both centralize management of your serial devices and distribute management hosts over the network.

Since the NPort® 5600-8-DT device servers have a smaller form factor compared to our 19" models, they are a great choice for applications that need additional serial ports, but for which mounting rails are not available.

Convenient Design for RS-485 Applications

The NPort® 5650-8-DT device servers support selectable 1K-ohm and 150K-ohm pull high/low resistors and a 120-ohm terminator. In some critical environments, termination resistors may be needed to prevent the reflection of serial signals. When using termination resistors, it is also important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. Since no set of resistor values is universally compatible with all environments, NPort® 5600-8-DT device servers use DIP switches to allow users to adjust termination and pull high/low resistor values manually for each serial port.

Convenient Power Inputs

The NPort® 5650-8-DT device servers support both a power terminal block and power jack for ease of use and greater flexibility. Users can connect the terminal block directly to a DC power source, or use the power jack to connect to an AC circuit through an adaptor.

LED Indicators to Ease Your Maintenance Tasks

The System LED, Serial Tx/Rx LEDs, and Ethernet LEDs (located on the RJ45 connector) provide a great tool for basic maintenance tasks and help engineers analyze problems in the field. The NPort® 5600's LEDs not only indicate current system and network status, but also help field engineers monitor the status of attached serial devices.

Two Ethernet Ports for Convenient Cascade-style Wiring

The NPort® 5600-8-DT device servers come with two Ethernet ports that can be used as Ethernet switch ports. Connect one port to the network or server, and the other port to another Ethernet device. The dual Ethernet ports eliminate the need to connect each device to a separate Ethernet switch, reducing wiring costs.

Automatic Warning Function by Speaker and/or E-mail

The built-in speakers can be used to alert administrators of problems with the Ethernet links or power input. The web console indicates which Ethernet link or power input has failed. An e-mail warning can also be issued when an exception is detected. These functions are valuable tools that enable maintenance engineers to react promptly to emergency situations.

Appearance

Specifications

Ethernet Interface

Number of Ports: 2

Speed: 10/100 Mbps

Connector: 8-pin RJ45

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 8

Serial Standards:
NPort® 5610-8-DT: RS-232
NPort® 5650-8-DT: RS-232/422/485

Connectors:
NPort® 5610-8-DT/5650-8-DT/5650I-8-DT: DB9 male
NPort® 5610-8-DT-J/5650-8-DT-J: RJ45 (8 pins)

Serial Line Protection:
15 KV ESD protection for all signals
2 KV isolation protection (NPort® 5650I-8-DT only)

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: DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF

Baudrate: 50 bps 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, DNS, SNMP, HTTP, SMTP, SNTP, Rtelnet, ARP, RFC2217

Configuration Options: Web Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for 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)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case

Push Buttons: Four push buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (0.8 mm), providing IP30 protection

Weight:
NPort® 5610-8-DT: 1760 g
NPort® 5610-8-DT-J: 1170 g
NPort® 5650-8-DT: 1770 g
NPort® 5650-8-DT-J: 1710 g
NPort® 5650I-8-DT: 1850 g

Dimensions:
Without ears: 197 x 44 x 135.5 mm (7.76 x 1.73 x 5.33 in)
With ears: 229 x 46 x 135.5 mm (9.01 x 1.81 x 5.33 in)
With DIN-Rail kit on bottom panel: 197 x 53 x 135.5 mm (7.76 x 2.09 x 5.33 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 70°C (-4 to 158°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:
NPort® 5610-8-DT: 621 mA @ 12 V, 140 mA @ 48 V
NPort® 5610-8-DT-J: 621 mA @ 12 V, 140 mA @ 48 V
NPort® 5650-8-DT: 580 mA @ 12 V, 156 mA @ 48 V
NPort® 5650I-8-DT: 1066 mA @ 12 V, 200 mA @ 48 V
NPort® 5650-8-DT-J: 580 mA @ 12 V, 156 mA @ 48 V

Regulatory Approvals

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A

Safety: UL (UL60950-1), TÜV (EN60950-1)

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)

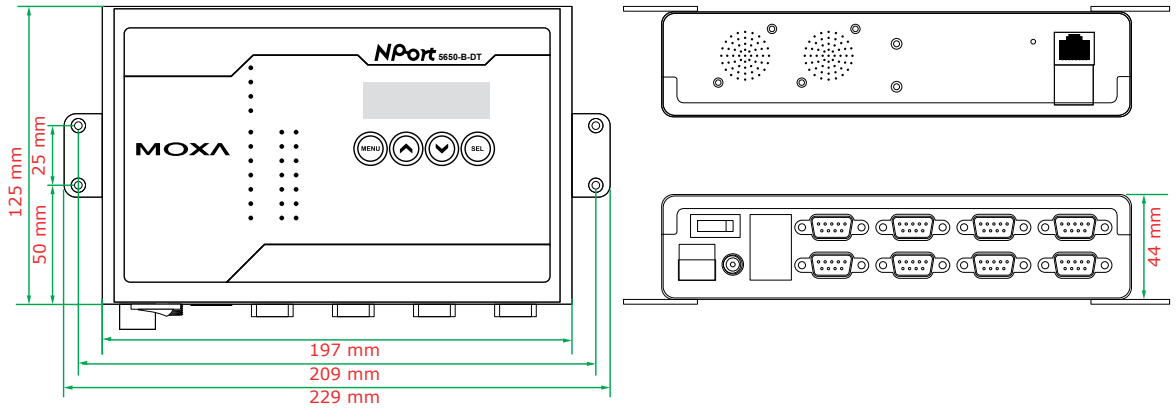
Automatic Reboot Trigger: Built-in WDT (watchdog timer)

Warranty

Warranty Period: 5 years

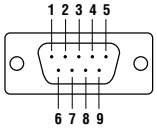
Details: See www.moxa.com/warranty

Dimensions



Pin Assignment

DB9 male connector



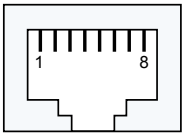
NPort® 5610-8-DT (RS-232)

PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

NPort® 5650-8-DT/5650I-8-DT (RS-232/422/485)

PIN	RS-232	RS-422/485-4w	RS-485-2w
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	–	–

8-pin RJ45 connector



NPort® 5610-8-DT-J (RS-232)

PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

NPort® 5650-8-DT-J (RS-232/422/485)

PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DSR	---	---
2	RTS	TxD+	---
3	GND	GND	GND
4	TXD	TxD-	---
5	RxD	RxD+	Data+
6	DCD	RxD-	Data-
7	CTS	---	---
8	DTR	---	---

Ordering Information

Available Models

NPort® 5610-8-DT: 8-port RS-232 desktop device server with DB9 male connectors and 48 VDC power input
NPort® 5610-8-DT-J: 8-port RS-232 desktop device server with RJ45 connectors and 48 VDC power input
NPort® 5650-8-DT: 8-port RS-232/422/485 desktop device server with DB9 male connectors and 48 VDC power input
NPort® 5650I-8-DT: 8-port RS-232/422/485 desktop device server with DB9 male connectors, 48 VDC power input, and 2 KV optical isolation
NPort® 5650-8-DT-J: 8-port RS-232/422/485 desktop device server with RJ45 connectors and 48 VDC power input

Optional Accessories (can be purchased separately)

CBL-RJ45F25-150: 8-pin RJ45 to DB25 female cable, 150 cm
CBL-RJ45M25-150: 8-pin RJ45 to DB25 male cable, 150 cm
CBL-RJ45F9-150: 8-pin RJ45 to DB9 female cable, 150 cm
CBL-RJ45M9-150: 8-pin RJ45 to DB9 male cable, 150 cm

Package Checklist

- NPort® 5600 series device server
- Power Adaptor (see Appendix A)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

NPort® 5600 Rackmount Series

8 and 16-port RS-232/422/485 serial device servers

- 8 or 16 serial ports supporting RS-232/422/485
- Standard 19-inch rackmount size
- 10/100M auto-sensing Ethernet
- Built-in 15 KV ESD protection for all serial signals
- Easy IP address configuration with LCD panel
- Choice of configuration methods: Web console, Telnet console, and Windows utility
- Versatile socket operation modes, including TCP Server, TCP Client, UDP, and Real COM
- SNMP MIB-II for network management

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.

Network Readiness for up to Sixteen Serial Devices

NPort® 5600 rackmount device servers can conveniently and transparently connect up to sixteen serial devices to an Ethernet, allowing you to network your existing serial devices with only basic configuration. Data transmission between the serial and Ethernet interfaces is bi-directional. By using NPort® device servers, you not only protect your current hardware investment, but also allow for future network expansion. You can both centralize the management of your serial devices, and distribute management hosts over the network.

19-inch Rackmount Device Server

NPort® 5600 device servers come with Tx/Rx LEDs for the serial ports on the front panel, and the 8 or 16 RJ45 serial port connectors on the rear panel. This makes the NPort® 5600 device servers suitable for standard 19-inch rack mounting, allowing you to simplify operation, maintenance, and administrative tasks.

Real COM/TTY Ports

Real COM/TTY drivers are provided that make the serial ports on the NPort® 5600 recognizable as Real COM ports by Windows, or Real TTY ports by Linux. In addition to supporting basic data transmission and reception, the NPort® drivers also support the RTS, CTS, DTR, DSR, and DCD control signals.

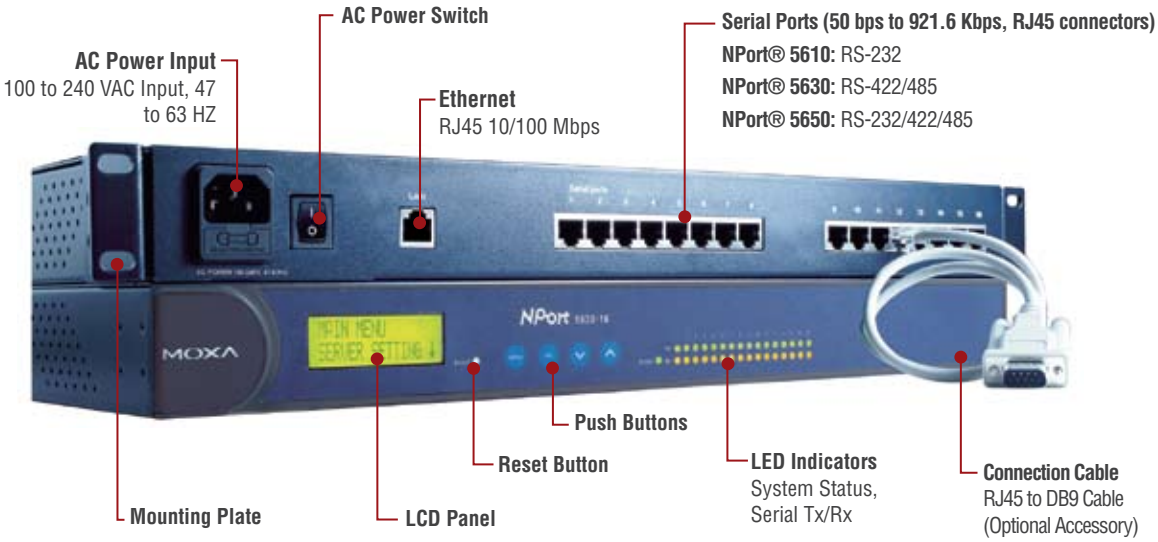
LED Indicators to Ease Your Maintenance Tasks

The System LED, Serial Tx/Rx LEDs, and Ethernet LEDs (located on the RJ45 connector) provide a great tool for basic maintenance tasks and help engineers analyze problems in the field. The NPort® 5600's LEDs not only indicate current system and network status, but also help field engineers monitor the status of attached serial devices.

Adjustable Termination and Pull High/Low Resistors

In some critical environments, termination resistors may be needed to prevent the reflection of serial signals. When using termination resistors, it is also important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. Since no set of resistor values is universally compatible for all environments, the NPort® 5600 has DIP switches on the bottom panel for setting the termination and pull high/low resistor values.

Appearance



Specifications

Ethernet Interface

Number of Ports: 1

Speed: 10/100 Mbps

Connector: 8-pin RJ45

Magnetic Isolation Protection: 1.5 KV built-in

Optical Fiber Interface

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: -20 dBm (Multi mode), -5 dBm (Single mode)

Max. TX Output: -14 dBm (Multi mode), 0 dBm (Single mode)

Sensitivity: -34 to -30 dBm (Multi mode), -36 to -32 dBm (Single mode)

Serial Interface

Number of Ports: 8 or 16

Serial Standards:
NPort® 5610: RS-232
NPort® 5630: RS-422/485
NPort® 5650: RS-232/422/485

Connectors: RJ45 (8 pins)

Serial Line Protection:
15 KV ESD protection for all signals

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: DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF

Baudrate: 50 bps 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, DNS, SNMP, HTTP, SMTP, SNTP, ARP, PPP, SLIP, RTelnet, RFC2217

Configuration Options: Web Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for 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)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case

Push Buttons: Four push buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (1 mm), providing IP30 protection

Weight:
NPort® 5610-8: 3340 g
NPort® 5610-8-48V: 3160 g
NPort® 5630-8: 3380 g
NPort® 5650-8: 3360 g
NPort® 5650-8-S-SC: 3380 g
NPort® 5650-8-M-SC: 3380 g
NPort® 5610-16: 3420 g
NPort® 5610-16-48V: 3260 g
NPort® 5630-16: 3400 g
NPort® 5650-16: 3460 g
NPort® 5650-16-S-SC: 3440 g
NPort® 5650-16-M-SC: 3440 g

Dimensions:
Without ears: 440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)
With ears: 480 x 45 x 198 mm (18.90 x 1.77 x 7.80 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 75°C (-4 to 167°F)

Power Requirements

Input Voltage:
NPort® 5610/5630/5650: 100 to 240 VAC, 47 to 63 hz
NPort® 5610-48V: ±48 VDC (20 to 72 VDC, -20 to -72 VDC)

Power Consumption:
NPort® 5610-8/16: 141 mA @ 100 VAC, 93 mA @ 240 VAC
NPort® 5630-8/16: 152 mA @ 100 VAC, 98 mA @ 240 VAC
NPort® 5610-8/16-48V: 135 mA @ 48 VDC
NPort® 5650-8/16: 158 mA @ 100 VAC, 102 mA @ 240 VAC
NPort® 5650-8/16-S-SC: 164 mA @ 100 VAC, 110 mA @ 240 VAC
NPort® 5650-8/16-M-SC: 174 mA @ 100 VAC, 113 mA @ 240 VAC

Power Line Protection: 4 KV burst (EN61000-4-4: EFT/B), 2 KV surge (EN61000-4-5)

Regulatory Approvals

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A
NPort® 5610 only: IEC61000-4-12

Safety: UL (UL60950-1), TÜV (EN60950-1)

Medical: EN60601-1-2 Class B, EN55011

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

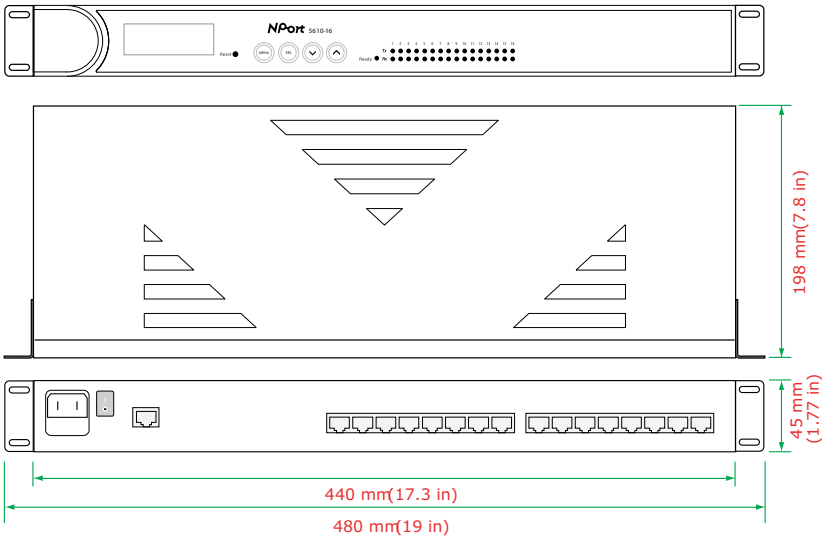
MTBF (meantime between failures):
NPort® 5610-8: 97294 hrs
NPort® 5610-16: 94928 hrs
NPort® 5610-8-48V: 96758
NPort® 5610-16-48V: 94417 hrs
NPort® 5630-8: 118405 hrs
NPort® 5630-16: 91483 hrs
NPort® 5650-8: 117584 hrs
NPort® 5650-16: 104767 hrs
NPort® 5650-S-SC-8: 116914 hrs
NPort® 5650-S-SC-16: 87528 hrs
NPort® 5650-M-SC-8: 116914 hrs
NPort® 5650-M-SC-16: 87528 hrs

Warranty

Warranty Period: 5 years

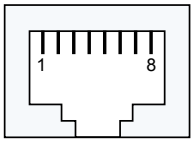
Details: See www.moxa.com/warranty

Dimensions



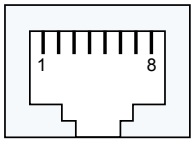
Pin Assignment

NPort® 5610
(RS-232, 8-port RJ45 connector)



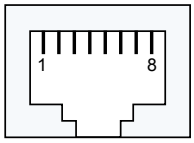
PIN	RS-232
1	DSR
2	RTS
3	GND
4	TXD
5	RxD
6	DCD
7	CTS
8	DTR

NPort® 5630
(RS-422/485, 8-port RJ45 connector)



PIN	RS-422/485-4w	RS-485-2w
1	---	---
2	---	---
3	TxD+	---
4	TxD-	---
5	RxD-	Data+
6	RxD+	Data-
7	GND	GND
8	---	---

NPort® 5650
(RS-232/422/485, 8-port RJ45 connector)



PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DSR	---	---
2	RTS	TxD+	---
3	GND	GND	GND
4	TXD	TxD-	---
5	RxD	RxD+	Data+
6	DCD	RxD-	Data-
7	CTS	---	---
8	DTR	---	---

Ordering Information

Available Models

NPort® 5610-8: 8-port RS-232 rackmount device server with RJ45 connectors and 100-240 VAC power input
NPort® 5610-8-48V: 8-port RS-232 rackmount device server with RJ45 connectors and 48 VDC power input
NPort® 5630-8: 8-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input
NPort® 5650-8: 8-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input
NPort® 5650-8-M-SC: 8-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) multi-mode fiber (SC connector)
NPort® 5650-8-S-SC: 8-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) single-mode fiber (SC connector)
NPort® 5610-16: 16-port RS-232 rackmount device server with RJ45 connectors and 100-240 VAC power input
NPort® 5610-16-48V: 16-port RS-232 rackmount device server with RJ45 connectors and 48 VDC power input
NPort® 5630-16: 16-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input
NPort® 5650-16: 16-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input
NPort® 5650-16-M-SC: 16-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) multi-mode fiber (SC connector)
NPort® 5650-16-S-SC: 16-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) single-mode fiber (SC connector)

Optional Accessories (can be purchased separately)

CBL-RJ45F25-150: 8-pin RJ45 to DB25 female cable, 150 cm
CBL-RJ45M25-150: 8-pin RJ45 to DB25 male cable, 150 cm
CBL-RJ45F9-150: 8-pin RJ45 to DB9 female cable, 150 cm
CBL-RJ45M9-150: 8-pin RJ45 to DB9 male cable, 150 cm

Package Checklist

- NPort® 5600 series device server
- Power Cord (see Appendix A)
- Serial cable for configuration
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card