

# NPort® 6600 Series

8/16/32-port RS-232/422/485 rackmount secure terminal servers



NPort 6600-T



NPort 6600

- > Up to 32 ports for high-density environments
- > Nonstandard baudrates supported with high precision
- > Port buffers for storing serial data when the Ethernet is offline
- > Supports IPv6
- > Ethernet redundancy (STP/RSTP/Turbo Ring) with network module
- > Modular design for scalability
- > DES/3DES/AES for highly secure data transmissions
- > Universal high-voltage ranges: 100 to 240 VAC or 88 to 300 VDC
- > Popular low-voltage ranges: ±48 VDC (20 to 72 VDC, -20 to -72 VDC)
- > ISA99 / IEC 62443-4-2 compliant



## Overview

The NPort® 6600 series of secure device servers is the right choice for applications that use large numbers of serial devices packed into a small space. Security breaches are intolerable and the NPort® 6600 ensures data transmission integrity with support of DES, 3DES,

and AES encryption algorithms. Serial devices of any type can be connected to the NPort® 6600, and each serial port on the NPort® can be configured independently for RS-232, RS-422, or RS-485 transmission.

## LCD Panel Makes Configuration Easy

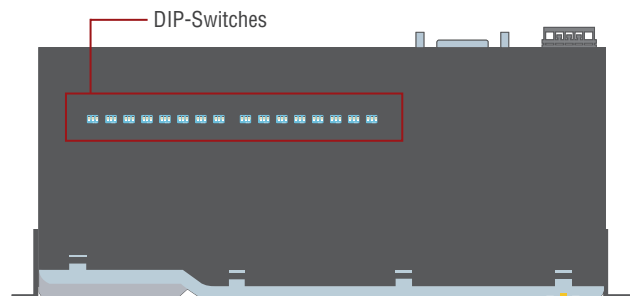
The NPort® 6600 has a built-in LCD panel for configuration. The panel displays the server name, serial number, and IP address, and any of the device server's configuration parameters, such as IP address, netmask, and gateway address, can be updated easily and quickly.



Note: The LCD panel is only available with standard temperature models.

## Adjustable Resistor Values for RS-485 Communication

The NPort® 6600 provides adjustable termination, pull high, and pull low resistors for RS-485 communication. In some critical environments, termination resistors may be needed to prevent the reflection of serial signals, and the pull high and pull low resistors may need adjusting to maintain the integrity of the electrical signal. Since no set of resistor values works for every environment, the NPort® 6600 allows manual adjustment of the resistor values for each serial port using built-in DIP switches.



## Specifications

### Ethernet Interface

**Number of Ports:** 1  
**Speed:** 10/100 Mbps, auto MDI/MDIX  
**Connector:** 8-pin RJ45  
**Magnetic Isolation:** 1.5 kV built-in

### Optical Fiber Interface (with network module)

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type	OM1	50/125 μm	G.652	
		800 MHz*km		
Typical Distance	4 km	5 km	40 km	
Wave-length	Typical (nm)	1300	1310	
	TX Range (nm)	1260 to 1360	1280 to 1340	
	RX Range (nm)	1100 to 1600	1100 to 1600	
Optical Power	TX Range (dBm)	-10 to -20	0 to -5	
	RX Range (dBm)	-3 to -32	-3 to -34	
	Link Budget (dB)	12	29	
	Dispersion Penalty (dB)	3	1	

**Note:** When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.  
**Note:** Compute the "typical distance" of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

### Serial Interface

**Number of Ports:** 8, 16, or 32  
**Serial Standards:**  
 NPort 6610: RS-232  
 NPort 6650: RS-232/422/485  
**Connector:** 8-pin RJ45  
**RS-485 Data Direction Control:** ADDC® (Automatic Data Direction Control)  
**Console Port:** Dedicated RS-232 console port on rear panel (8-pin RJ45)

### 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, DTR/DSR, XON/XOFF  
**Baudrate:** 50 bps to 921.6 kbps (supports nonstandard baudrates)  
**Pull High/Low Resistor for RS-485:** 1 kΩ, 150 kΩ  
**Terminator for RS-485:** 120 Ω

### 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

### Memory Expansion Slot

**Slot Type:** SD slot (supports up to 2 GB)

### Software

**Network Protocols:** ICMP, IPv4/v6, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, ARP, PPPoE, HTTPS  
**Security Protocols:** SSLv3, TLSv1.0/1.1/1.2  
**Configuration Options:** Web Console, Serial Console, Telnet Console, Windows Utility  
**Windows Real COM Drivers:** Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded  
**Fixed TTY Drivers:** SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X  
**Linux Real TTY Drivers:** Linux 2.4.x, 2.6.x, 3.x  
**Management:** SNMP MIB-II  
**IP Routing:** Static, RIP-I, RIP-II

### Operation Modes

**Standard:** Real COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Terminal, Reverse Telnet, Ethernet Modem, Printer, PPP, Disabled  
**Secure:** Secure Real COM, Secure TCP Server, Secure TCP Client, Secure Pair Connection, SSH, Reverse SSH

### Applications

**Terminal Sessions:** 8 sessions per port

### Physical Characteristics

**Housing:** Metal  
**Weight:**  
 NPort 6600-8: 3,460 g (7.63 lb)  
 NPort 6600-16: 3,580 g (7.89 lb)  
 NPort 6600-32: 3,600 g (7.94 lb)

### Dimensions:

Without ears: 440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)  
 With ears: 480 x 195 x 44 mm (18.9 x 7.68 x 1.73 in)

### Environmental Limits

#### Operating Temperature:

Standard Models: 0 to 55°C (32 to 131°F)  
 Wide Temp. Models: -40 to 75°C (-40 to 167°F)  
 High-Voltage Wide Temp. Models: -40 to 85°C (-40 to 185°F)

#### Storage Temperature:

Standard Models: -40 to 75°C (-40 to 167°F)  
 Wide Temp. Models: -40 to 75°C (-40 to 167°F)  
 High-Voltage Wide Temp. Models: -40 to 85°C (-40 to 185°F)

#### Ambient Relative Humidity:

5 to 95% (non-condensing)

### Power Requirements

**Input Voltage:**  
 AC Models: 100 to 240 VAC  
 DC Models: ±48 VDC (20 to 72 VDC, -20 to -72 VDC), 110 VDC (88 to 300 VDC)  
**Input Current:**  
 AC Models:  
 140 mA @ 100 VAC (8 ports)  
 192 mA @ 100 VAC (16 ports)  
 285 mA @ 100 VAC (32 ports)  
 DC Models:  
 293 mA @ 48 VDC  
 200 mA @ 88 VDC  
**Alarm Contact:** Relay output with current-carrying capacity of 1 A @ 24 VDC

### Standards and Certifications

**Safety:** UL 60950-1

**EMC:** EN 55022/24

**EMI:** CISPR 22, FCC Part 15B Class A

**EMS:**

NPort 6600-8/16/32:

IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m

IEC 61000-4-4 EFT: Power 1 kV; Signal 0.5 kV

IEC 61000-4-5 Surge: Power: 2 kV

IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m

IEC 61000-4-8 PFMF

IEC 61000-4-11 DIPs

NPort 6600 48V models:

IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m

IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV

IEC 61000-4-5 Surge: Power: 1 kV

IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m

IEC 61000-4-8 PFMF

NPort 6650 HV models:

IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m

IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV

IEC 61000-4-5 Surge: Power: 2 kV

IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m

IEC 61000-4-8 PFMF

**Freefall:** IEC-68-2-6, IEC-68-2-34, IEC-68-2-32

**Vibration:** IEC-68-2-6, IEC-68-2-34

**Green Product:** RoHS, CRoHS, WEEE

**Transportation:** NEMA TS2

### Reliability

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

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

**MTBF** (mean time between failures)

**Time:**

NPort 6610-8: 135,891 hrs

NPort 6610-16: 102,373 hrs

NPort 6610-32: 68,707 hrs

NPort 6650-8: 636,600 hrs

NPort 6650-16: 439,673 hrs

NPort 6650-32: 310,078 hrs

NPort 6650-8-HV-T: 501,171 hrs

NPort 6650-16-HV-T: 380,006 hrs

NPort 6650-32-HV-T: 290,914 hrs

**Standard:** Telcordia (Bellcore) Standard

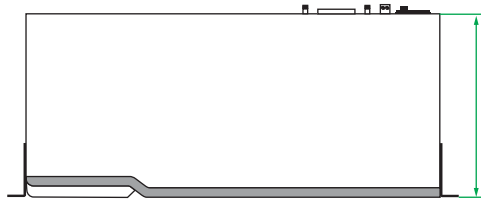
### Warranty

**Warranty Period:** 5 years

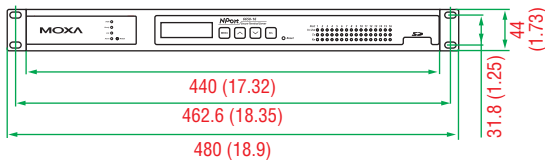
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

### Dimensions and Pin Assignment

Unit: mm (inch)



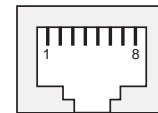
Standard model



Wide temp. model



8-pin RJ45 connector



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

## Ordering Information

### Available Models

**NPort 6610-8:** 8-port RS-232 to Ethernet secure terminal server, 100 to 240 VAC power input, 0 to 55°C operating temperature

**NPort 6610-8-48V:** 8-port RS-232 to Ethernet secure terminal server, ±48 VDC power input, 0 to 55°C operating temperature

**NPort 6610-16:** 16-port RS-232 to Ethernet secure terminal server, 100 to 240 VAC power input, 0 to 55°C operating temperature

**NPort 6610-16-48V:** 16-port RS-232 to Ethernet secure terminal server, ±48 VDC power input, 0 to 55°C operating temperature

**NPort 6610-32:** 32-port RS-232 to Ethernet secure terminal server, 100 to 240 VAC power input, 0 to 55°C operating temperature

**NPort 6610-32-48V:** 32-port RS-232 to Ethernet secure terminal server, ±48 VDC power input, 0 to 55°C operating temperature

**NPort 6650-8:** 8-port RS-232/422/485 to Ethernet secure terminal server, 100 to 240 VAC power input, 0 to 55°C operating temperature

**NPort 6650-8-T:** 8-port RS-232/422/485 to Ethernet secure terminal server, 100 to 240 VAC power input, -40 to 75°C operating temperature

**NPort 6650-8-HV-T:** 8-port RS-232/422/485 to Ethernet secure terminal server, 88 to 300 VDC power input, -40 to 85°C operating temperature

**NPort 6650-8-48V:** 8-port RS-232/422/485 to Ethernet secure terminal server, ±48 VDC power input, 0 to 55°C operating temperature

**NPort 6650-16:** 16-port RS-232/422/485 to Ethernet secure terminal server, 100 to 240 VAC power input, 0 to 55°C operating temperature

**NPort 6650-16-48V:** 16-port RS-232/422/485 to Ethernet secure terminal server, ±48 VDC power input, 0 to 55°C operating temperature

**NPort 6650-16-T:** 16-port RS-232/422/485 to Ethernet secure terminal server, 100 to 240 VAC power input, -40 to 75°C operating temperature

**NPort 6650-16-HV-T:** 16-port RS-232/422/485 to Ethernet secure terminal server, 88 to 300 VDC power input, -40 to 85°C operating temperature

**NPort 6650-32:** 32-port RS-232/422/485 to Ethernet secure terminal server, 100 to 240 VAC power input, 0 to 55°C operating temperature

**NPort 6650-32-48V:** 32-port RS-232/422/485 to Ethernet secure terminal server, ±48 VDC power input, 0 to 55°C operating temperature

**NPort 6650-32-HV-T:** 32-port RS-232/422/485 to Ethernet secure terminal server, 88 to 300 VDC power input, -40 to 85°C operating temperature







### Optional Accessories (can be purchased separately)

**Note:** One power cord suitable for your region is included in the product package. Additional power cords can be purchased separately. Please refer to the Power Accessory Selection Guide for details.

### Package Checklist


- 1 NPort 6600 secure device server
- Serial cable: CBL-RJ45M9-150
- Power cord (AC models only)\*
- Rack-mounting kit: WK-44-01
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card


\*For AC models, the package includes one power cord suitable for your region.

Expansion Modules			Use with the following NPort models					
			6150	6250	6450	6610-8 6650-8	6610-16 6650-16	6610-32 6650-32
NM-TX01 NM-TX01-T		1 10/100BaseT(X) port	–	–	✓	✓	✓	✓
NM-TX02 NM-TX02-T		2 10/100BaseT(X) ports	–	–	✓	✓	✓	✓
NM-FX01-S-SC NM-FX01-S-SC-T		1 100BaseFX port, single-mode, SC connector	–	–	✓	✓	✓	✓
NM-FX01-M-SC NM-FX01-M-SC-T		1 100BaseFX port, multi-mode, SC connector	–	–	✓	✓	✓	✓
NM-FX02-S-SC NM-FX02-S-SC-T		2 100BaseFX ports, single-mode, SC connector	–	–	✓	✓	✓	✓
NM-FX02-M-SC NM-FX02-M-SC-T		2 100BaseFX ports, multi-mode, SC connector	–	–	✓	✓	✓	✓

**Note:** Expansion modules can be purchased separately.

# Power Accessory Selection Guide

Barrel Plug Type		Locking Barrel Plug	Power Cord					
O/P		12 VDC, 1.5 A, 100 to 240 VAC	10A/250V Power Cord, 183 cm					
Plug Type		CN	US	JP	EU	AU	UK	CN
Model Name		PWR-12150-CN-S2	PWC-C13US-3B-183	PWC-C13JP-3B-183	PWC-C13EU-3B-183	PWC-C13AU-3B-183	PWC-C13UK-3B-183	PWC-C13CN-3B-183
Appearance								
1 port	NPort 6150	✓	–	–	–	–	–	–
	NPort 6250	✓	–	–	–	–	–	–
2 ports	NPort 6250-M-SC	✓	–	–	–	–	–	–
	NPort 6250-S-SC	✓	–	–	–	–	–	–
4 ports	NPort 6450	✓	–	–	–	–	–	–
8 ports	NPort 6610-8	–	✓	✓	✓	✓	✓	✓
	NPort 6650-8	–	✓	✓	✓	✓	✓	✓
	CN2610-8	–	✓	✓	✓	✓	✓	✓
	CN2610-8-2AC	–	✓	✓	✓	✓	✓	✓
	CN2650-8	–	✓	✓	✓	✓	✓	✓
	CN2650-8-2AC	–	✓	✓	✓	✓	✓	✓
	CN2650I-8	–	✓	✓	✓	✓	✓	✓
16 ports	CN2650I-8-2AC	–	✓	✓	✓	✓	✓	✓
	NPort 6610-16	–	✓	✓	✓	✓	✓	✓
	NPort 6650-16	–	✓	✓	✓	✓	✓	✓
	CN2610-16	–	✓	✓	✓	✓	✓	✓
	CN2610-16-2AC	–	✓	✓	✓	✓	✓	✓
	CN2650-16	–	✓	✓	✓	✓	✓	✓
	CN2650-16-2AC	–	✓	✓	✓	✓	✓	✓
32 ports	CN2650I-16	–	✓	✓	✓	✓	✓	✓
	CN2650I-16-2AC	–	✓	✓	✓	✓	✓	✓

Barrel Plug Type		Locking barrel plug						
O/P		12 VDC, 2 A, 100 to 240 VDC (desktop type)	2.5A/250V Power Cord, 183 cm					
Plug Type		Must be used with one power cord	US	JP	EU	AU	UK	
Model Name		PWR-12125-DT-S2	PWC-C7US-2B-183	PWC-C7JP-2B-183	PWC-C7EU-2B-183	PWC-C7AU-2B-183	PWC-C7UK-2B-183	
Appearance								
1 port	NPort 6150	✓	✓	✓	✓	✓	✓	
	NPort 6250	✓	✓	✓	✓	✓	✓	
2 ports	NPort 6250-M-SC	✓	✓	✓	✓	✓	✓	
	NPort 6250-S-SC	✓	✓	✓	✓	✓	✓	
4 ports	NPort 6450	✓	✓	✓	✓	✓	✓	
8 ports	NPort 6610-8	–	–	–	–	–	–	
	NPort 6650-8	–	–	–	–	–	–	
16 ports	NPort 6610-16	–	–	–	–	–	–	
	NPort 6650-16	–	–	–	–	–	–	
32 ports	NPort 6610-32	–	–	–	–	–	–	