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.

### Overview

- 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)
- Security features based on IEC-62443

### 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.
Terminal Servers

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)

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

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+, Rx+, GND
RS-485: Data+, Data-, GND
RS-485-4w: Data+, Data-, 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, SMTP, ARP, PPPoE, HTTPS
Security Protocols: SSLv3, TLSv1.0/1.1/1.2
Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility

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, 4.x
Android API: Android 3.1.x and later
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 55032/24
EMI: CISPR 32, 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

Dimensions and Pin Assignment

Unit: mm (inch)

Pin Assignment

8-pin RJ45 connector

<table>
<thead>
<tr>
<th>PIN</th>
<th>RS-232</th>
<th>RS-422/485-4W</th>
<th>RS-485-2w</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DSR (in)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>RTS (out)</td>
<td>TxD+</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>TxD (out)</td>
<td>TxD-</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>RxD (in)</td>
<td>RxD+</td>
<td>Data+</td>
</tr>
<tr>
<td>6</td>
<td>DcD (in)</td>
<td>RxD-</td>
<td>Data-</td>
</tr>
<tr>
<td>7</td>
<td>CTS (in)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>DTR (out)</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
**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

**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

<table>
<thead>
<tr>
<th>Expansion Modules</th>
<th>Use with the following NPort models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6150</td>
</tr>
<tr>
<td>NM-TX01</td>
<td>–</td>
</tr>
<tr>
<td>NM-TX01-T</td>
<td>–</td>
</tr>
<tr>
<td>NM-TX02</td>
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<tr>
<td>NM-TX02-T</td>
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<tr>
<td>NM-FX01-S-SC</td>
<td>1</td>
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<tr>
<td>NM-FX01-M-SC</td>
<td>1</td>
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<tr>
<td>NM-FX01-M-SC-T</td>
<td>–</td>
</tr>
<tr>
<td>NM-FX02-S-SC</td>
<td>2</td>
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<tr>
<td>NM-FX02-S-SC-T</td>
<td>–</td>
</tr>
<tr>
<td>NM-FX02-M-SC</td>
<td>2</td>
</tr>
<tr>
<td>NM-FX02-M-SC-T</td>
<td>–</td>
</tr>
</tbody>
</table>

*Note: Expansion modules can be purchased separately.*
## Power Accessory Selection Guide

<table>
<thead>
<tr>
<th>Barrel Plug Type</th>
<th>Locking Barrel Plug</th>
<th>Power Cord</th>
</tr>
</thead>
<tbody>
<tr>
<td>O/P</td>
<td>12 VDC, 1.5 A, 100 to 240 VAC</td>
<td>10A/250V Power Cord, 183 cm</td>
</tr>
</tbody>
</table>

### Plug Type

<table>
<thead>
<tr>
<th>Model Name</th>
<th>CN</th>
<th>US</th>
<th>JP</th>
<th>EU</th>
<th>AU</th>
<th>UK</th>
<th>CN</th>
</tr>
</thead>
</table>

### Appearance

1 port

- NPort 6150
- NPort 6250
- NPort 6250-M-SC
- NPort 6250-S-SC

2 ports

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

4 ports

- NPort 6450
- NPort 6610-8
- NPort 6610-16
- NPort 6610-32
- NPort 6650-8
- NPort 6650-16
- NPort 6650-32

8 ports

- NPort 6610-8
- NPort 6610-16
- NPort 6610-16-2AC
- NPort 6610-32
- NPort 6650-8
- NPort 6650-16
- NPort 6650-16-2AC
- NPort 6650-32
- NPort 6650-8-2AC
- NPort 6650-16-2AC
- NPort 6650-16-32AC
- NPort 6650-8-2AC
- NPort 6650-16-32AC
- NPort 6650-32

16 ports

- NPort 6610-16
- NPort 6610-16-2AC
- NPort 6610-16-32AC
- NPort 6650-16
- NPort 6650-16-2AC
- NPort 6650-16-32AC

32 ports

- NPort 6610-32
- NPort 6650-32

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### Power Accessory Selection Guide (Continued)

<table>
<thead>
<tr>
<th>Barrel Plug Type</th>
<th>Locking barrel plug</th>
</tr>
</thead>
<tbody>
<tr>
<td>O/P</td>
<td>12 VDC, 2 A, 100 to 240 VAC (desktop type)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plug Type</th>
<th>Must be used with one power cord</th>
</tr>
</thead>
</table>

### Appearance

1 port

- NPort 6150
- NPort 6250
- NPort 6250-M-SC
- NPort 6250-S-SC

2 ports

- NPort 6450
- NPort 6610-8
- NPort 6610-16
- NPort 6610-32
- NPort 6650-8
- NPort 6650-16
- NPort 6650-16-2AC
- NPort 6650-16-32AC
- NPort 6650-8-2AC
- NPort 6650-16-32AC
- NPort 6650-32

16 ports

- NPort 6610-16
- NPort 6610-16-2AC
- NPort 6610-16-32AC
- NPort 6650-16
- NPort 6650-16-2AC
- NPort 6650-16-32AC

32 ports

- NPort 6610-32
- NPort 6650-32