

# NPort® 6250 Series

## 2-port RS-232/422/485 secure terminal servers



- > Secure operation modes for Real COM, TCP Server, TCP Client, Pair Connection, Terminal, and Reverse Terminal
- > Nonstandard baudrates supported with high precision
- > Choice of network medium: 10/100BaseT(X) or 100BaseFX
- > Enhanced remote configuration with HTTPS and SSH
- > Port buffers for storing serial data when the Ethernet is offline
- > Supports IPv6
- > Generic serial commands supported in Command-by-Command mode
- > Security features based on IEC-62443



### Introduction

The 2-port NPort® 6250 device servers use the SSL and SSH protocols to transmit encrypted serial data over Ethernet. Models are available for connecting to a 10/100BaseT(X) copper Ethernet or

100BaseT(X) fiber network. Both single-mode and multi-mode fiber are supported.

### Zero Data Loss if Ethernet Connection Fails

The NPort® 6250 device servers help guarantee reliability by providing users with secure serial-to-Ethernet data transmission and a customer-oriented hardware design. If the Ethernet connection fails, the NPort® 6250 will queue all serial data in its internal 64 KB port buffer. When

the Ethernet connection is re-established, the NPort® 6250 will immediately release all of the data in the buffer in the order that it was received. Users can increase the port buffer size by installing an SD card.

### 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 (NPort 6250-S-SC/6250-M-SC)

|                  |                         | 100BaseFX    |              |             |
|------------------|-------------------------|--------------|--------------|-------------|
|                  |                         | Multi-Mode   |              | Single-Mode |
| Fiber Cable Type | OM1                     | 50/125 μm    | G.652        |             |
|                  |                         | 800 MHz*km   | 4 km         | 5 km        |
| Wave-length      | Typical (nm)            | 1300         |              |             |
|                  | 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:** 2  
**Serial Standards:** RS-232/422/485  
**Connector:** DB9 male  
**RS-485 Data Direction Control:** ADDC® (Automatic Data Direction Control)  
**Console Port:** Serial port 1 doubles as RS-232 console port

#### 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

#### 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, 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:** 730 g (1.61 lb)

**Dimensions:**

Without ears: 77 x 111 x 29 mm (3.30 x 4.37 x 1.1 in)

With ears: 89 x 111 x 29 mm (3.50 x 4.37 x 1.1 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)

**Storage Temperature:** -40 to 75°C (-40 to 167°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Power Requirements**

**Input Voltage:** 12 to 48 VDC

**Input Current:**

NPort 6250: 333 mA @ 12 VDC

NPort 6250-M-SC: 428 mA @ 12 VDC

NPort 6250-S-SC: 376 mA @ 12 VDC

**Power Line Protection:** 1 kV burst (EN 61000-4-4: EFT/B), 1 kV surge (EN 61000-4-5)

**Standards and Certifications**

**Safety:** UL 60950-1

**EMC:** EN 55032/24

**EMI:** CISPR 32, FCC Part 15B Class A

**EMS:**

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; Signal: 1 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

**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 (excluding fiber models)

**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 6250: 1,947,486 hrs

NPort 6250 Multi-mode fiber: 1,092,794 hrs

NPort 6250 Single-mode fiber: 1,477,682 hrs

**Standard:** Telcordia (Bellcore) Standard TR/SR

**Warranty**

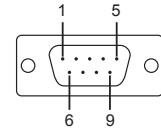
**Warranty Period:** 5 years

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

**Pin Assignment**

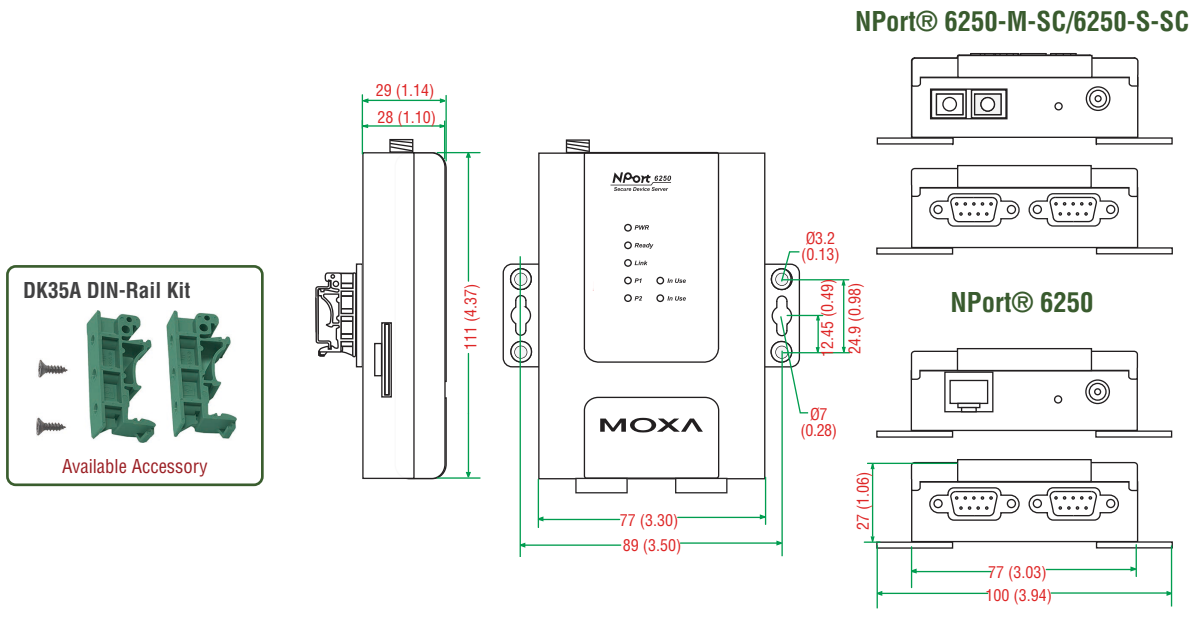
| PIN | RS-232 | RS-422/485-4w | RS-485-2w |
|-----|--------|---------------|-----------|
| 1   | DCD    | TxD-(A)       | -         |
| 2   | RxD    | TxD+(B)       | -         |
| 3   | TxD    | RxD+(B)       | Data+(B)  |
| 4   | DTR    | RxD-(A)       | Data-(A)  |
| 5   | GND    | GND          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

DB9 male connector



## Dimensions

Unit: mm (inch)



## Ordering Information

### Available Models

**NPort 6250:** 2-port secure device server, RS-232/422/485 to Ethernet

**NPort 6250-M-SC:** 2-port secure device server, RS-232/422/485 to multi-mode fiber (SC connector)

**NPort 6250-S-SC:** 2-port secure device server, RS-232/422/485 to single-mode fiber (SC connector)

**NPort 6250-T:** 2-port secure device server, RS-232/422/485 to Ethernet, -40 to 75°C operating temperature

**NPort 6250-M-SC-T:** 2-port secure device server, RS-232/422/485 to multi-mode fiber (SC connector), -40 to 75°C operating temperature

**NPort 6250-S-SC-T:** 2-port secure device server, RS-232/422/485 to single-mode fiber (SC connector), -40 to 75°C operating temperature

### Optional Accessories (can be purchased separately)

**DK35A:** DIN-rail mounting kit, 35 mm, 2 DIN-rail plates with 4 screws

**CBL-PJ21NOPEN-BK-30:** Locking barrel plug to bare-wires cable

**Mini DB9F-to-TB:** DB9(F) to terminal block connector

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

### Package Checklist

- 1 NPort 6250 secure device server
- 100 to 240 VAC power adapter (excluding T models)\*
- 2 wall-mount ears
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

\*For non-T models, the package includes one power adapter suitable for your region.

# 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    | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2510-8        | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2610-8        | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2610-8-2AC    | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2650-8        | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2650-8-2AC    | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2650I-8       | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
| 16 ports         | NPort 6610-16   | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | NPort 6650-16   | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2510-16       | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2610-16       | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2610-16-2AC   | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2650-16       | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2650-16-2AC   | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
|                  | CN2650I-16      | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |
| 32 ports         | NPort 6610-32   | –                             | ✓                           | ✓                | ✓                | ✓                | ✓                | ✓                |

| Barrel Plug Type |                 | Locking barrel plug                        |                              |                 |                 |                 |                 |  |
|------------------|-----------------|--|------------------------------|-----------------|-----------------|-----------------|-----------------|--|
| O/P              |                 | 12 VDC, 2 A, 100 to 240 VAC (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   | –  | –                            | –               | –               | –               | –               |  |