

NPort 6600-G2 Series

2nd Gen 8/16/32-port RS-232/422/485 secure terminal servers



Features and Benefits

- Data encryption with secure operation modes for Real COM, TCP Server, TCP Client, Pair Connection, Terminal, and Reverse Terminal
- Secure Boot only allows Moxa-authorized firmware to run on devices
- One-click log collection and application analysis for easy troubleshooting
- Easy RS-485 configuration of serial interfaces with software-adjustable pull high/low resistor and terminator
- Supports SSL certificate signing by RSA-4096 / ECC-521
- IEC 62443-4-2 Security Level 2 certified

Certifications



Introduction

Moxa has leveraged the IEC 62443-4-1 secure development life-cycle process to develop a new generation of NPort G2 secure terminal servers. In addition, the NPort 6600-G2 Series secure terminal servers are also IEC 62443-4-2 Security Level 2 certified, enabling secure connections for your legacy serial devices to industrial networks. User experience is enhanced based on Moxa's 35 years of experience in the serial-connectivity field by providing versatile installation means for different space requirements and an easy-to-use troubleshooting tool for maintenance.

Secure Data Transmission

For many applications, guaranteeing secure data transmission is an important concern when connecting serial devices to a network. To answer this concern, the NPort® 6600-G2 secure terminal servers support the TLS and SSH protocols, which work by encrypting data before sending it over the network. With the NPort® 6600-G2, you can be rest assured that serial data is transmitted securely over both private and public networks.

One-click Logs and Application Analysis for Easy Troubleshooting

During the deployment stage, system integrators must connect devices and ensure the communication is smooth. They may encounter issues and will require tools to troubleshoot issues. Moxa provides an application analyzer that generates a report at the click of a button to help the system integrator easily identify potential issues and understand how to resolve them.

At the maintenance stage, system errors may require you to call for help. Device vendors might take a long time to troubleshoot issues because they need to collect information and then hold discussions with the technical support team. The NPort 6600-G2 comes with a one-click log collection function, which can provide all the data that a technical support team needs to quickly troubleshoot system issues.

Specifications

Memory

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| SD Slot | microSD card Up to 2 TB (high speed, 25 Mbps) |
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Ethernet Interface

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| 10/100/1000BaseT(X) Ports (RJ45 connector) | 2 ports (up to 4) Auto MDI/MDI-X connection |
| Magnetic Isolation Protection | 1.5 kV (built-in) |

Ethernet Software Features

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| Configuration Options | Web Console (HTTP/HTTPS), Windows Utility, Device Search Utility (DSU), MCC Tool, Serial Console |
| Management | ARP, DHCP Client, DNS, HTTPS, ICMP, IPv4/IPv6, SMTP, SMTSPS, SNMPv1/v2c/v3, SNTP, TCP/IP, UDP, WINS |

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|-----------------------------|---|
| Windows Real COM Drivers | Windows 11, 10, 8.1, 8, and 7 Windows Server 2022, 2019, 2016, 2012 R2, 2012, and 2008 R2 |
| Linux Real TTY Drivers | Kernel versions 6.x, 5.x, and 4.x |
| Fixed TTY Drivers | macOS versions: 14, 13, 12, and 11 |
| Arm®-based Platform Support | Windows 11 Linux kernel 6.x, 5.x, and 4.x macOS 14, 13, 12, and 11 |
| Virtual Machine | VMWare ESXi (Windows 11/10/8.1/8/7 & Linux 6.x, 5.x, and 4.x) VMware Fusion (Windows on macOS 14, 13, 12, and 11) Parallels Desktop (Windows on macOS 14, 13, 12, and 11) |
| Time Management | SNTP Client |
| MIB | MIB-II RFC1213, RFC1317 Private MIB |
| Unicast Routing | RIPV1/V2 Static Route |

Security Functions

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|--------------------|---|
| Root of Trust | Secure Boot True Random Number Generator (TRNG) Security Screws |
| Authentication | Local database RADIUS TACACS+ |
| Security Protocols | HTTPS (TLS 1.2/1.3) SNMPv3 SSHv2 |
| Encryption | HTTPS: ECC-256, ECC-384, ECC-521, RSA-1024, RSA-2048, RSA-3072, RSA-4096, AES-128, AES-256, CHACHA20, SHA-256, SHA-384, HMAC SSH: ECC-256, ECC-384, ECC-521, RSA-2048, AES-128, AES-256, SHA-256, SHA-384, HMAC SNMPv3: AES-128, SHA-256, SHA-384 Secure OP mode: HTTPS: ECC-256, ECC-384, ECC-521, RSA-1024, RSA-2048, RSA-3072, RSA-4096, AES-128, AES-256, CHACHA20, SHA-256, SHA-384, HMAC Config import/export: AES-256, SHA-256, HMAC |

Serial Interface

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|--------------------------|---|
| No. of Ports | NPort 6610/6650-8-G2 models: 8 NPort 6610/6650-16-G2 models: 16 NPort 6610/6650-32-G2 models: 32 |
| Connector | 8-pin RJ45 |
| Serial Standards | NPort 6610-G2 models: RS-232 NPort 6650-G2 models: RS-232, RS-422, RS-485 |
| Secure Operation Modes | Reverse SSH, Secure Pair Connection, Secure Real COM, Secure TCP Client, Secure TCP Server, SSH, Secure Redundant COM, Secure Reverse Real COM |
| Standard Operation Modes | Disabled, Pair Connection, SLIP, PPP, Real COM, Reverse Terminal, RFC2217, TCP Client, TCP Server, Terminal, UDP, Redundant COM, Reverse Real COM |
| Baudrate | 50 bps to 921.6 kbps (supports non-standard baudrates) |
| Data Bits | 5, 6, 7, 8 |

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| Stop Bits | 1, 1.5, 2 |
| Flow Control | None, RTS/CTS, DTR/DSR, RTS Toggle, XON/XOFF |
| Parity | None, Even, Odd, Space, Mark |
| RS-485 Data Direction Control | Automatic Data Direction Control (ADDC) |
| Terminator for RS-485 | 120 ohms (software-configurable) |
| Pull High/Low Resistor for RS-485 | 1 kilo-ohm, 150 kilo-ohms (software-configurable) |

Serial Signals

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|-----------|--|
| RS-232 | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND |
| RS-422 | Tx+, Tx-, Rx+, Rx-, GND |
| RS-485-2w | Data+, Data-, GND |
| RS-485-4w | Tx+, Tx-, Rx+, Rx-, GND |

Power Parameters

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| Input Current | NPort 6610-G2/6650-G2 models: 320 mA (max.) NPort 6650I-G2 models: 330 mA (max.) NPort 6650-48V-G2 models: 340 mA (max.) |
| Input Voltage | AC models: 100 to 240 VAC, 50 to 60 Hz DC models: ±48 VDC (20 to 72 VDC, -20 to -72 VDC) |

Reliability

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|--------------------------|---|
| Automatic Reboot Trigger | Built-in WDT |
| Alert Tools | Built-in buzzer and RTC (real-time clock) |

Physical Characteristics

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| Housing | Metal |
| Dimensions (with ears) | 440 x 200 x 43.65 mm (17.32 x 7.87 x 1.72 in) |
| Weight | NPort 6610/6650-32-2AC-G2: 2.80 kg (6.17 lb) NPort 6650I-16-2AC-G2: 2.80 kg (6.17 lb) NPort 6610/6650-32-48V-G2: 2.62 kg (5.78 lb) |
| Installation | Desktop, Rack mounting (RK-43-01, included in the box) |

Environmental Limits

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| Operating Temperature | Standard models: -10 to 60°C (14 to 140°F) Wide temp. models: -40 to 75°C (-40 to 167°F) |
| Storage Temperature (package included) | -40 to 75°C (-40 to 167°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |

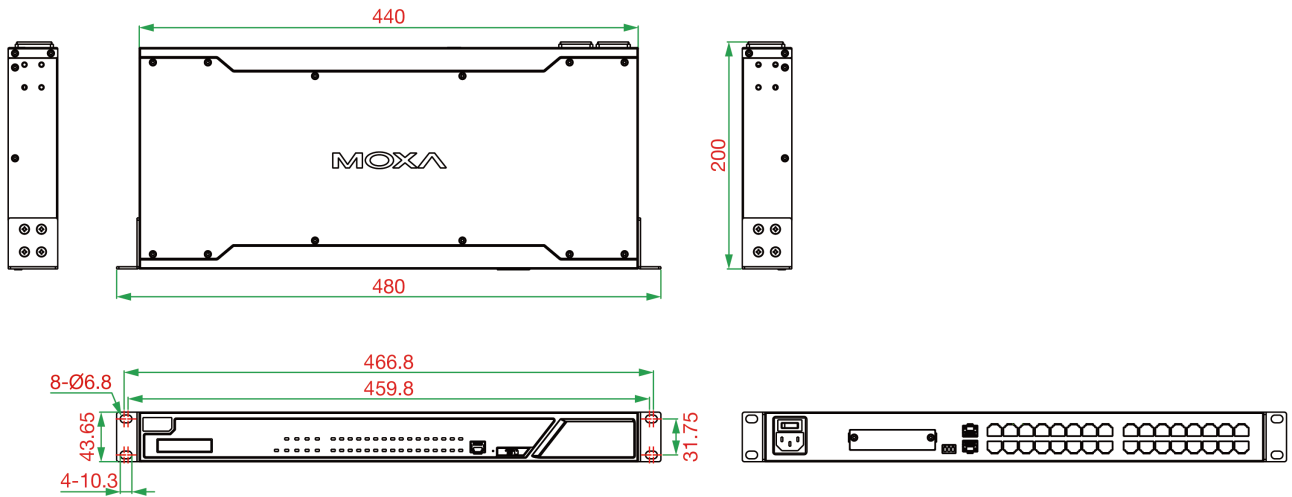
Standards and Certifications

| | |
|-----|---|
| EMC | EN 55032/35 |
| 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 (AC), 0.5 kV (DC); Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV (AC), 0.5 kV (DC) |

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| | IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF IEC 61000-4-11: Excluding DC models |
| Traffic Control | NEMA TS2 |
| Safety | IEC 62368-1, UL 62368-1, EN 62368-1 |
| Vibration | IEC 60068-2-6 |
| Package Drop Test | ISTA 1A |
| Declaration | |
| Green Product | RoHS, CRoHS, WEEE |
| MTBF | |
| Time | NPort 6610-8-G2: 29,613 hrs NPort 6610-16-G2: 29,517 hrs NPort 6610-32-G2: 29,045 hrs NPort 6650-8-G2: 29,515 hrs NPort 6650-16-G2: 29,321 hrs NPort 6650-32-G2: 29,045 hrs NPort 6650-8-G2-T: 1,860,004 hrs NPort 6650-16-G2-T: 1,314,137 hrs NPort 6650-32-G2-T: 921,748 hrs NPort 6610-8-2AC-G2: 29,612 hrs NPort 6610-16-2AC-G2: 29,515 hrs NPort 6610-32-2AC-G2: 29,429 hrs NPort 6650-8-2AC-G2: 29,514 hrs NPort 6650-16-2AC-G2: 29,321 hrs NPort 6650-32-2AC-G2: 29,045 hrs NPort 6650-8-2AC-G2-T: 1,857,027 hrs NPort 6650-16-2AC-G2-T: 1,312,651 hrs NPort 6650-32-2AC-G2-T: 921,017 hrs NPort 6650I-8-G2: 29,446 hrs NPort 6650I-16-G2: 29,185 hrs NPort 6650I-8-G2-T: 1,620,368 hrs NPort 6650I-16-G2-T: 1,086,881 hrs NPort 6650I-8-2AC-G2: 29,445 hrs NPort 6650I-16-2AC-G2: 29,184 hrs NPort 6650I-8-2AC-G2-T: 1,618,109 hrs NPort 6650I-16-2AC-G2-T: 1,085,864 hrs NPort 6650-8-48V-G2: 29,514 hrs NPort 6650-16-48V-G2: 29,321 hrs NPort 6650-32-48V-G2: 29,045 hrs |
| Standards | Telcordia Standard SR-332 Telcordia SR-332 Issue 4 |
| Warranty | |
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |
| Package Contents | |
| Device | 1 x NPort 6600-G2 Series terminal server |
| Power Supply | 2AC models: 2 x power cables, suitable for your region All other models (excluding DC models): 1 x power cable, suitable for your region |
| Installation Kit | 1 x rack-mounting kit (RK-43-01) |
| Documentation | 1 x quick installation guide |

Dimensions

Unit: mm



Ordering Information

| Model Name | Ethernet Ports | No. of Serial Ports | Serial Standards | Isolation | No. of Power Cables Included | Operating Temp. |
|------------------------|-----------------------|---------------------|------------------|-----------|------------------------------|-----------------|
| NPort 6610-8-G2 | 2 x 10/100/1000M RJ45 | 8 | RS-232 | - | 1 | -10 to 60°C |
| NPort 6610-16-G2 | 2 x 10/100/1000M RJ45 | 16 | RS-232 | - | 1 | -10 to 60°C |
| NPort 6610-32-G2 | 2 x 10/100/1000M RJ45 | 32 | RS-232 | - | 1 | -10 to 60°C |
| NPort 6610-8-2AC-G2 | 2 x 10/100/1000M RJ45 | 8 | RS-232 | - | 2 | -10 to 60°C |
| NPort 6610-16-2AC-G2 | 2 x 10/100/1000M RJ45 | 16 | RS-232 | - | 2 | -10 to 60°C |
| NPort 6610-32-2AC-G2 | 2 x 10/100/1000M RJ45 | 32 | RS-232 | - | 2 | -10 to 60°C |
| NPort 6650-8-G2 | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | - | 1 | -10 to 60°C |
| NPort 6650-16-G2 | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | - | 1 | -10 to 60°C |
| NPort 6650-32-G2 | 2 x 10/100/1000M RJ45 | 32 | RS-232/422/485 | - | 1 | -10 to 60°C |
| NPort 6650-8-2AC-G2 | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | - | 2 | -10 to 60°C |
| NPort 6650-16-2AC-G2 | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | - | 2 | -10 to 60°C |
| NPort 6650-32-2AC-G2 | 2 x 10/100/1000M RJ45 | 32 | RS-232/422/485 | - | 2 | -10 to 60°C |
| NPort 6650-8-G2-T | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | - | 1 | -40 to 75°C |
| NPort 6650-16-G2-T | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | - | 1 | -40 to 75°C |
| NPort 6650-32-G2-T | 2 x 10/100/1000M RJ45 | 32 | RS-232/422/485 | - | 1 | -40 to 75°C |
| NPort 6650-8-2AC-G2-T | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | - | 2 | -40 to 75°C |
| NPort 6650-16-2AC-G2-T | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | - | 2 | -40 to 75°C |
| NPort 6650-32-2AC-G2-T | 2 x 10/100/1000M RJ45 | 32 | RS-232/422/485 | - | 2 | -40 to 75°C |
| NPort 6650I-8-G2 | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | 2 kV | 1 | -10 to 60°C |
| NPort 6650I-16-G2 | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | 2 kV | 1 | -10 to 60°C |
| NPort 6650I-8-2AC-G2 | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | 2 kV | 2 | -10 to 60°C |
| NPort 6650I-16-2AC-G2 | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | 2 kV | 2 | -10 to 60°C |
| NPort 6650I-8-G2-T | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | 2 kV | 1 | -40 to 75°C |
| NPort 6650I-16-G2-T | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | 2 kV | 1 | -40 to 75°C |

| Model Name | Ethernet Ports | No. of Serial Ports | Serial Standards | Isolation | No. of Power Cables Included | Operating Temp. |
|-------------------------|-----------------------|---------------------|------------------|-----------|------------------------------|-----------------|
| NPort 6650I-8-2AC-G2-T | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | 2 kV | 2 | -40 to 75°C |
| NPort 6650I-16-2AC-G2-T | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | 2 kV | 2 | -40 to 75°C |
| NPort 6650-8-48V-G2 | 2 x 10/100/1000M RJ45 | 8 | RS-232/422/485 | - | 1 | -10 to 60°C |
| NPort 6650-16-48V-G2 | 2 x 10/100/1000M RJ45 | 16 | RS-232/422/485 | - | 1 | -10 to 60°C |
| NPort 6650-32-48V-G2 | 2 x 10/100/1000M RJ45 | 32 | RS-232/422/485 | - | 1 | -10 to 60°C |

Accessories (sold separately)

Expansion Modules

| | |
|-------------------|--|
| NM-TX02-G2 | 2nd Gen 2 10/100BaseT(x) port connector, -10 to 60°C operating temperature |
| NM-TX02-G2-T | 2nd Gen 2 10/100BaseT(x) port connector, -40 to 75°C operating temperature |
| NM-FX02-M-SC-G2 | 2nd Gen 2 100BaseFX port multi-mode SC connector, -10 to 60°C operating temperature |
| NM-FX02-M-SC-G2-T | 2nd Gen 2 100BaseFX port multi-mode SC connector, -40 to 75°C operating temperature |
| NM-FX02-S-SC-G2 | 2nd Gen 2 100BaseFX port single-mode SC connector, -10 to 60°C operating temperature |
| NM-FX02-S-SC-G2-T | 2nd Gen 2 100BaseFX port single-mode SC connector, -40 to 75°C operating temperature |
| NM-SFP02-G2-T | 2nd Gen 2 1000BaseSFP port connector, -40 to 75°C operating temperature |

SFP Modules

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|--------------|---|
| SFP-1GLHLC | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHXL | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature |
| SFP-1GLXLC | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature |
| SFP-1GZXLC | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature |
| SFP-1GSXLC | SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature |
| SFP-1GLHLC-T | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature |
| SFP-1GLHXL-T | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature |

Cables

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|-------------------------|--|
| CBL-RJ458P-Cisco-BK-180 | 8-pin RJ45 to 8-pin RJ45 serial cable, 1.8 m, for Cisco console port |
| CBL-RJ45F25-150 | 8-pin RJ45 to DB25 female serial cable, 1.5 m |
| CBL-RJ45F9-150 | 8-pin RJ45 to DB9 female serial cable, 1.5m |
| CBL-RJ45M25-150 | 8-pin RJ45 to DB25 male serial cable, 1.5m |
| CBL-RJ45M9-150 | 8-pin RJ45 to DB9 male serial cable, 1.5m |
| CBL-RJ45SF25-150 | 8-pin RJ45 to DB25 female serial cable with shielding, 1.5m |
| CBL-RJ45SF9-150 | 8-pin RJ45 to DB9 female serial cable with shielding, 1.5m |
| CBL-RJ45SM25-150 | 8-pin RJ45 to DB25 male serial cable with shielding, 1.5m |
| CBL-RJ45SM9-150 | 8-pin RJ45 to DB9 male serial cable with shielding, 1.5m |

Connectors

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|--------------|-----------------------------|
| LB-DB9F-G-01 | Serial loopback DB9 adaptor |
|--------------|-----------------------------|

Power Cords

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|------------------|--|
| PWC-C13AU-3B-183 | Power cord with AU plug, 1.83 m |
| PWC-C13CN-3B-183 | Power cord with three-prong CN plug, 1.83 m |
| PWC-C13EU-3B-183 | Power cord with EU/KR plug, 1.83 m |
| PWC-C13JP-3B-183 | Power cord with JP plug plug, 7A/125V, 1.83 m |
| PWC-C13UK-3B-183 | Power cord with UK plug, 1.83 m |
| PWC-C13US-3B-183 | Power cord with US plug, 1.83 m |
| PWC-C15AU-3B-183 | Power cord with AU plug, 1.83 m, -40 to 75°C operating temperature |
| PWC-C15EU-3B-183 | Power cord with EU plug, 1.83 m, -40 to 75°C operating temperature |
| PWC-C15JP-3B-183 | Power cord with JP plug, 1.83 m, -40 to 75°C operating temperature |
| PWC-C15UK-3B-183 | Power cord with UK plug, 1.83 m, -40 to 75°C operating temperature |
| PWC-C15US-3B-183 | Power cord with US plug, 1.83 m, -40 to 75°C operating temperature |

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