CN2600 Series

8 and 16-port RS-232/422/485 terminal servers with dual-LAN redundancy

> LCD panel for easy IP address configuration (excluding wide temperature range models)
> Dual-LAN cards with two independent MAC addresses and IP addresses
> Redundant COM function available when both LANs are active
> Dual-host redundancy can be used to add a backup PC to your system
> Dual-AC-power inputs (for AC models only)
> Real COM/TTY drivers for Windows and Linux
> Universal high-voltage range: 100 to 240 VAC or 88 to 300 VDC

: Overview

Redundancy is an important issue for industrial networks, and various types of solutions have been developed to provide alternative network paths when equipment or software failures occur. "Watchdog" hardware is installed to utilize redundant hardware, and a "Token"-switching software mechanism is applied. The CN2600 terminal server uses its built-in Dual-LAN ports to implement a "Redundant COM" mode that keeps your applications running uninterrupted.

Dual-LAN Redundancy

The CN2600 has two separate LAN ports that can be connected to separate LAN networks. Dual-LAN redundancy involves setting up two separate physical networks to connect the PC host with the CN2600 (the PC host also requires two LAN cards). If one connection fails, the PC host can still communicate with your serial devices over the alternative LAN connection.

Redundant COM

Moxa offers "Redundant COM", an easy-to-use application to provide an alternative solution for network redundancy. When the CN2600 receives a data packet from a connected device, two identical data packets are sent over two independent LAN connections to prevent lost data packets if one LAN connection becomes unavailable. The CN2600 software is programmed to automatically discard duplicate data packets.
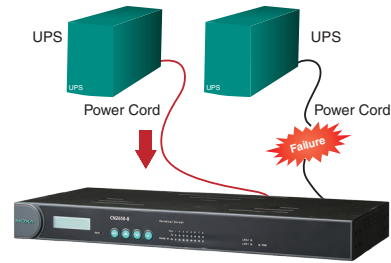
Dual-Host Redundancy

The CN2600's dual-LAN cards can also be used to set up "dual-host" redundancy. In this case, both networks (LAN A and LAN B in the figure) are connected to two different hosts. If either of the two hosts shuts down unexpectedly, the other host will still be able to communicate with serial devices connected to the CN2600.

Dual-LAN Redundancy

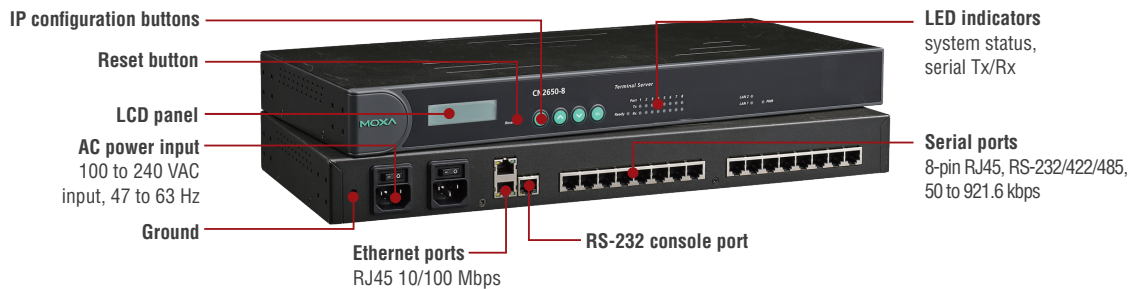Redundant COM

Dual-host Redundancy

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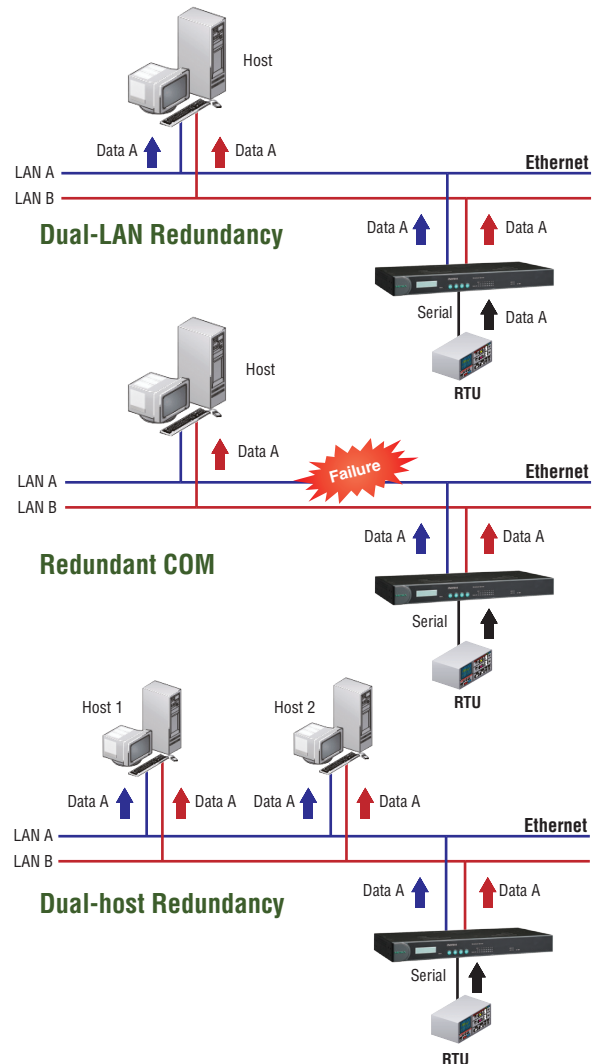
Dual-AC Model Supported

Dual-power redundancy uses two power inputs and redundant internal power supplies to ensure that all of the CN2600's functions will be available, even in the event of power circuit failures.

: Appearance

IP configuration buttons

Reset button

LCD panel

AC power input
100 to 240 VAC
input, 47 to 63 Hz

Ground

Ethernet ports
RJ45 10/100 Mbps

RS-232 console port

LED indicators
system status,
serial Tx/Rx

Serial ports
8-pin RJ45, RS-232/422/485,
50 to 921.6 kbps

Note: The product shown is the CN2610-8-2AC. HV models (CN2650I-8-HV-T and CN2650I-16-HV-T) use terminal blocks for their power input.
Note: LCD panel and configuration buttons are not available for wide temperature models

: Specifications

Ethernet Interface
Number of Ports: 2 (2 IPs)
Speed: 10/100 Mbps, auto MDI/MDIX
Connector: 8-pin RJ45
Magnetic Isolation: 1.5 kV built-in

Serial Interface
Number of Ports: 8 or 16
Serial Standards:
CN2610: RS-232
CN2650/2650I: RS-232/422/485
Connector:
CN2610/2650: 8-pin RJ45
CN2650I: DB9 male
Serial Line Protection:
2 kV optical isolation (CN2650I)
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
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

Software
Network Protocols: ICMP, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, ARP, PPPoE, DDNS

Security Protocols: RADIUS, HTTPS, SSH, PAP, CHAP
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, RFC2217, Terminal, Reverse Telnet, PPP, DRDAS, Redundant COM, Disabled

Applications
Terminal Sessions: 8 sessions per port

Physical Characteristics
Housing: Metal
Weight:
CN2610-8-2AC: 3,760 g (8.29 lb)
CN2610-16-2AC: 3,980 g (8.77 lb)
CN2650-8: 3,740 g (8.25 lb)
CN2650-16: 3,790 g (8.36 lb)
CN2650-8-2AC: 3,900 g (8.60 lb)
CN2650-16-2AC: 3,980 g (8.77 lb)
CN2650I-8: 3,666 g (8.08 lb)
CN2650I-16: 3,776 g (8.32 lb)
CN2650I-8-2AC: 3,932 g (8.67 lb)
CN2650I-16-2AC: 4,022 g (8.87 lb)
CN2650I-8-HV: 3,910 g (8.62 lb)
CN2650I-16-HV: 3,930 g (8.66 lb)
Dimensions:
Without ears: 440 x 198 x 45.5 mm (17.32 x 7.80 x 1.77 in)
With ears: 480 x 198 x 45.5 mm (18.9 x 7.80 x 1.77 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, 47 to 63 Hz
DC Models: 110 VDC (88 to 300 VDC)
Input Current:
CN2600 AC models: 325 mA @ 100 VAC, 47 to 64 Hz
CN2650I HV models: 200 mA @ 88 VDC

Standards and Certifications
Safety: UL 60950-1
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class A
EMS:
AC models:
IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m
IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV
IEC 61000-4-5 Surge: Power: 2.5 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

HVDC 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; Signal: 1 kV
IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m
IEC 61000-4-8 PFMF
Freefall: IEC-68-2-34, IEC-68-2-32
Vibration: IEC-68-2-6
Green Product: RoHS, CRoHS, WEEE

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:
CN2610-8-2AC: 124,859 hrs
CN2610-16-2AC: 105,915 hrs
CN2650-8 series: 457,140 hrs
CN2650-16 series: 375,472 hrs
CN2650I-8 series: 190,562 hrs
CN2650I-16 series: 115,887 hrs
CN2650I-8-HV-T: 191,326 hrs
CN2650I-16-HV-T: 116,924 hrs
Standard:
CN2610-8-2AC, CN2610-16-2AC: MIL-HDBK-217F
CN2650-8/16, CN2650I-8/16, CN2650I-8/16-HV-T: Telcordia (Bellcore)
Standard TR/SR

Warranty
Warranty Period: 5 years
Details: See www.moxa.com/warranty
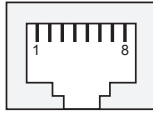
Dimensions

Unit: mm (inch)

CN2650-16-T (Wide Temp. Model)

CN2600 Series (Standard Model)

462.6 (18.21)
8.7 (0.34)
5.6 (0.22)
6.85 (0.27)
31.8 (1.25)
45.5 (1.79)

440 (17.32)
197.5 (7.78)

CN2610/2650

CN2650I

CN2650I-16-HV-T
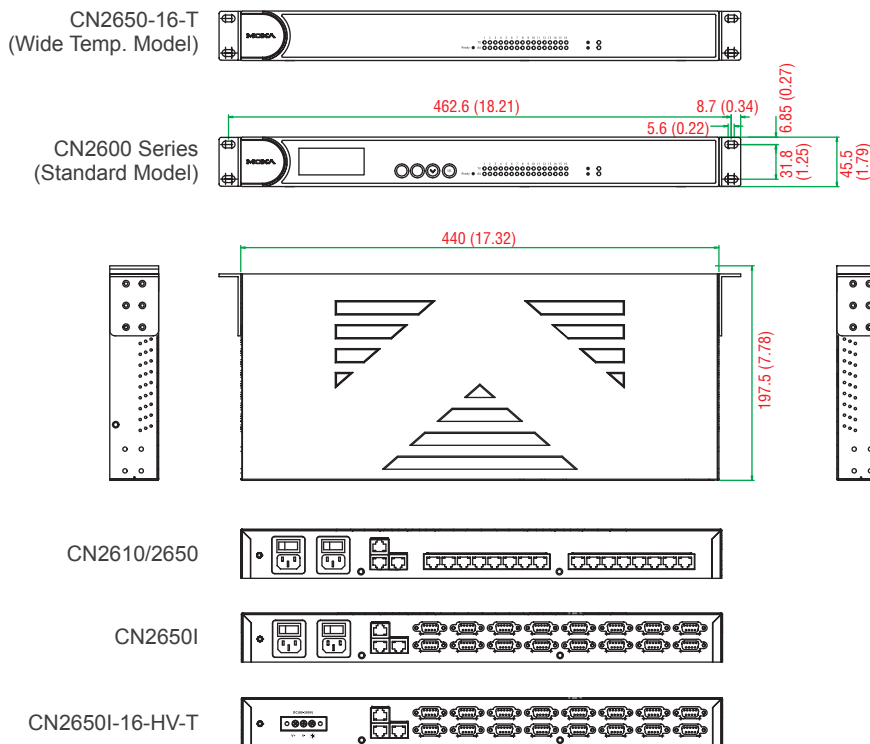
Pin Assignment

8-pin RJ45 connector

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

DB9 male connector

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	–	–
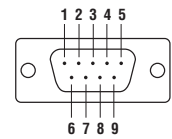
Ordering Information

Available Models

CN2610-8: Dual-LAN terminal server with 8 RS-232 ports, 0 to 55°C operating temperature
CN2610-16: Dual-LAN terminal server with 16 RS-232 ports, 0 to 55°C operating temperature
CN2610-8-2AC: Dual-LAN, dual-AC-power terminal server with 8 RS-232 ports, 0 to 55°C operating temperature
CN2610-16-2AC: Dual-LAN, dual-AC-power terminal server with 16 RS-232 ports, 0 to 55°C operating temperature
CN2650-8: Dual-LAN terminal server with 8 RS-232/422/485 ports, 0 to 55°C operating temperature
CN2650-16: Dual-LAN terminal server with 16 RS-232/422/485 ports, 0 to 55°C operating temperature
CN2650-8-2AC: Dual-LAN, dual-AC-power terminal server with 8 RS-232/422/485 ports, 0 to 55°C operating temperature
CN2650-16-2AC: Dual-LAN, dual-AC-power terminal server with 16 RS-232/422/485 ports, 0 to 55°C operating temperature
CN2650I-8: Dual-LAN terminal server with 8 RS-232/422/485 ports and 2 kV optical isolation, 0 to 55°C operating temperature
CN2650I-16: Dual-LAN terminal server with 16 RS-232/422/485 ports and 2 kV optical isolation, 0 to 55°C operating temperature
CN2650I-8-2AC: Dual-LAN, dual-AC-power terminal server with 8 RS-232/422/485 ports and 2 kV optical isolation, 0 to 55°C operating temperature
CN2650I-16-2AC: Dual-LAN, dual-AC-power terminal server with 16 RS-232/422/485 ports and 2 kV optical isolation, 0 to 55°C operating temperature
CN2650-8-2AC-T: Dual-LAN, dual-AC-power terminal server with 8 RS-232/422/485 ports, -40 to 75°C operating temperature
CN2650-16-2AC-T: Dual-LAN, dual-AC-power terminal server with 16 RS-232/422/485 ports, -40 to 75°C operating temperature
CN2650I-8-HV-T: Dual-LAN terminal server with 8 RS-232/422/485 ports and 2 kV optical isolation, 88 to 300 VDC power input, -40 to 85°C operating temperature
CN2650I-16-HV-T: Dual-LAN terminal server with 16 RS-232/422/485 ports and 2 kV optical isolation, 88 to 300 VDC power input, -40 to 85°C operating temperature

Optional Accessories (can be purchased separately)

Mini DB9F-to-TB: DB9(F) to terminal block connector (CN2650I only)
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 CN2600 terminal server
- Serial cable: CBL-RJ45F9-150
- Power cord (2AC models come with 2 cords)*
- Rack-mounting kit: WK-45-01
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

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

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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	✓	–	–	–	–	–	–
2 ports	NPort 6250	✓	–	–	–	–	–	–
	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	–	✓	✓	✓	✓	✓	✓
	CN2650I-8-2AC	–	✓	✓	✓	✓	✓	✓
16 ports	NPort 6610-16	–	✓	✓	✓	✓	✓	✓
	NPort 6650-16	–	✓	✓	✓	✓	✓	✓
	CN2610-16	–	✓	✓	✓	✓	✓	✓
	CN2610-16-2AC	–	✓	✓	✓	✓	✓	✓
	CN2650-16	–	✓	✓	✓	✓	✓	✓
	CN2650-16-2AC	–	✓	✓	✓	✓	✓	✓
	CN2650I-16	–	✓	✓	✓	✓	✓	✓
	CN2650I-16-2AC	–	✓	✓	✓	✓	✓	✓
32 ports	NPort 6610-32	–	✓	✓	✓	✓	✓	✓

Barrel Plug Type		Locking barrel plug	Power Cord				
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	✓	✓	✓	✓	✓	✓
2 ports	NPort 6250	✓	✓	✓	✓	✓	✓
	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	–	–	–	–	–	–