

CN2600 Series

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



- > LCD panel for easy IP address configuration
- > 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
- > Real COM/TTY drivers for Windows and Linux



Overview

Redundancy is an important issue for industry, and several different solutions have been developed to prevent damage caused by equipment or software failures. “Watchdog” hardware is required to utilize redundant hardware, and a “Token” switching mechanism is required for software. The CN2600 terminal server uses its built-in dual-LAN ports to implement a “redundant COM” mode that keeps your applications running smoothly.

Dual-LAN Redundancy

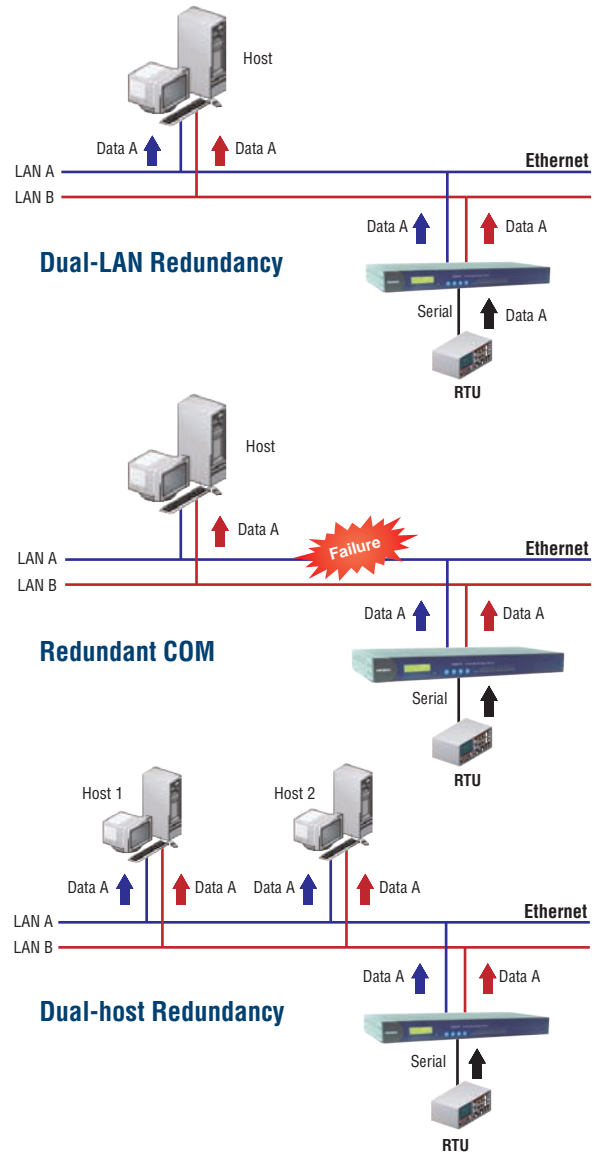
The CN2600 has two separate LAN ports that can be connected to separate LAN networks. Dual-LAN redundancy involves setting up two separate physical networks to connect the PC host with the CN2600. In this case, the PC host must also be installed with two LAN cards. If one of the networks fails, the PC host will still be able to communicate with your serial devices over the redundant LAN.

Redundant COM

The “Redundant COM” (patent pending) operation mode can be used to set up a redundant LAN between the CN2600’s COM ports and the host computer. The redundant structure involves using the CN2600’s two LAN ports to set up two independent LANs that connect the CN2600 to the host computer. If either of the two LANs fails, the other LAN will continue transmitting packets between the serial devices and the host, with the data transmitted through the CN2600. One of the biggest advantages of using Moxa’s Redundant COM mode is that the “switching time” is zero. What this means is that if one of the LANs fails, data transmission between the PC host the serial devices will not be interrupted.

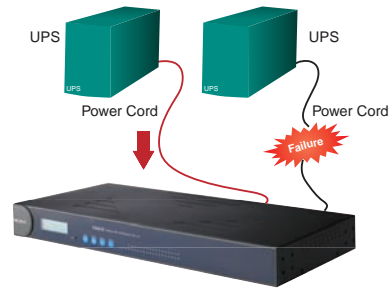
Dual-host Redundancy

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 continue transmitting packets to (and receiving packets from) the serial devices connected to the CN2600.

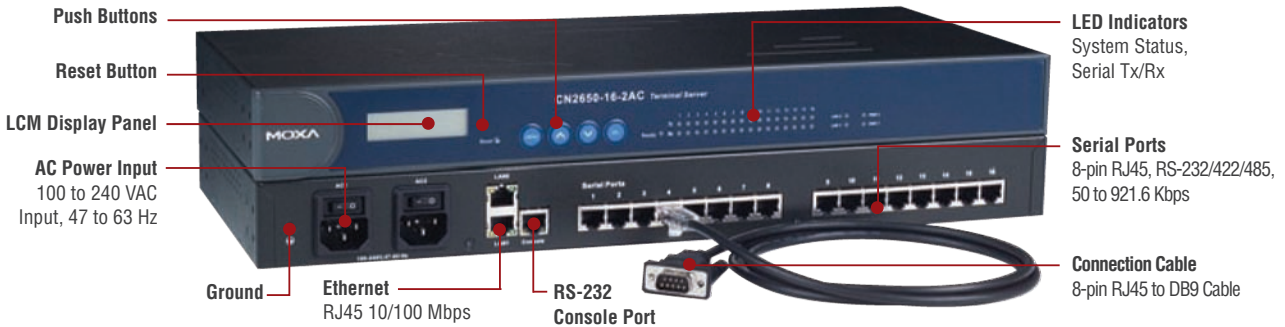


Dual-AC Model Supported

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 failure.



Appearance



Specifications

Ethernet Interface

Number of Ports: 2
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
RS-485 Data Direction Control: ADDC® (Automatic Data Direction Control)
Serial Line Protection:
 15 KV ESD protection for all signals
 2 KV optical isolation (CN2650I)

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 K Ω , 150 K Ω
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, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, ARP, PPPoE, DDNS
Security Protocols: RADIUS, HTTPS, SSH, PAP, CHAP
Configuration Options: Web Console, Serial Console, Telnet Console, Windows Search Utility
Windows Real COM Drivers: Windows 95, 98, ME, NT, 2000, XP x86/x64, 2003 x86/x64, Vista x86/x64, 2008 x86/x64, Embedded CE 5.0/6.0, XP Embedded
Fixed TTY Drivers: SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i
Linux Real TTY Drivers: 2.4.x, 2.6.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

Case: Metal, IP30 protection
Weight:
 CN2610-8: 3525 g
 CN2610-16: 3560 g
 CN2610-8-2AC: 3760 g
 CN2610-16-2AC: 3810 g
 CN2650-8: 3740 g
 CN2650-16: 3790 g
 CN2650-8-2AC: 3900 g
 CN2650-16-2AC: 3980 g
 CN2650I-8: 3666 g
 CN2650I-16: 3776 g
 CN2650I-8-2AC: 3932 g
 CN2650I-16-2AC: 4022 g

Dimensions:

Without ears: 440 x 198 x 45 mm (17.32 x 7.80 x 1.77 in)
 With ears: 480 x 198 x 45 mm (18.9 x 7.80 x 1.77 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)
Operating Humidity: 5 to 95% RH
Storage Temperature: -20 to 70°C (-4 to 158°F)

Power Requirements

Input Voltage: 100 to 240 VAC, 47 to 63 Hz
Power Consumption: 235 mA @ 100 VAC, 145 mA @ 240 VAC
Power Line Protection: 1 KV burst (EN61000-4-4: EFT/B), 2 KV surge (EN61000-4-5)

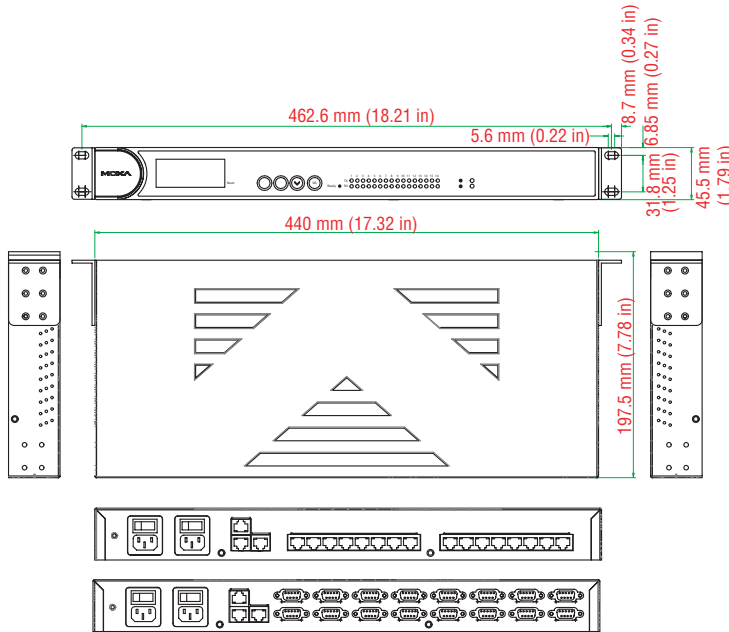
Regulatory Approvals

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A
Safety: UL (UL60950), TÜV (EN60950)
EN61000-4-2 (ESD): Level 3
EN61000-4-4 (EFT): Level 4
EN61000-4-5 (Surge): Level 2
Alert Tools: Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger: Built-in WDT (watchdog timer)
MTBF (meantime between failures): 99302 hrs

Warranty

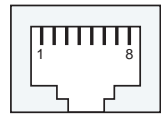
Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions



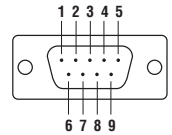
Pin Assignment

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
- CN2610-16:** Dual-LAN terminal server with 16 RS-232 ports
- CN2610-8-2AC:** Dual-LAN, dual-AC-power terminal server with 8 RS-232 ports
- CN2610-16-2AC:** Dual-LAN, dual-AC-power terminal server with 16 RS-232 ports
- CN2650-8:** Dual-LAN terminal server with 8 RS-232/422/485 ports
- CN2650-16:** Dual-LAN terminal server with 16 RS-232/422/485 ports
- CN2650-8-2AC:** Dual-LAN, dual-AC-power terminal server with 8 RS-232/422/485 ports
- CN2650-16-2AC:** Dual-LAN, dual-AC-power terminal server with 16 RS-232/422/485 ports
- CN2650I-8:** Dual-LAN terminal server with 8 RS-232/422/485 ports and 2 KV optical isolation
- CN2650I-16:** Dual-LAN terminal server with 16 RS-232/422/485 ports and 2 KV optical isolation
- CN2650I-8-2AC:** Dual-LAN, dual-AC-power terminal server with 8 RS-232/422/485 ports and 2 KV optical isolation
- CN2650I-16-2AC:** Dual-LAN, dual-AC-power terminal server with 16 RS-232/422/485 ports and 2 KV optical isolation

Package Checklist

- CN2600 terminal server
- CBL-RJ45F9-150: 8-pin RJ45 to DB9 female connection cable, 150 cm
- 2 power cords (AC models only)*
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

Optional Accessories (can be purchased separately)

Serial Cables and Adaptors: See Appendix A for details