# **NPort S8000 Series**

## Combo switch / serial device servers



### **Features and Benefits**

- · 4-port RS-232/422/485 serial device server
- · Serial QoS for configuring serial data transmission priority
- · Built-in managed Ethernet switch
- S8455I fiber models: 2 fiber Ethernet ports and 3 Ethernet ports
- S8455I all-copper models: 5 Ethernet ports
- Ethernet redundancy with Turbo Ring and Turbo Chain (recovery time < 20 ms) or RSTP/STP (IEEE 802.1w/D) supported
- QoS, IGMP-snooping/GMRP, VLAN, LACP, SNMPv1/v2c/v3, RMON supported
- · 2 kV isolation for serial signals (isolation models)
- · Adjustable pull high/low resistor for RS-485 ports
- · Surge protection for serial, Ethernet, and power

## Certifications



## Introduction

The NPort S8000 Series combines an industrial device server with a full-function managed Ethernet switch with 4 RS-232/422/485 serial ports, allowing you to easily install, manage, and maintain the product. Combining a device server and switch in one product allows you to save space in your cabinet, reduce overall power consumption, and reduce costs, since you will not need to purchase a switch and serial device server separately.

#### Supports the Full Range of NPort 5000 Series Device Server Functions

The NPort S8000 Series supports the complete array of NPort 5000 device server functions. You can network your existing serial devices by connecting up to 4 serial devices through Ethernet ports, with only basic configuration required. In addition, data transmission between the serial and Ethernet interfaces is bidirectional.

#### **Full-function Managed Ethernet Switch**

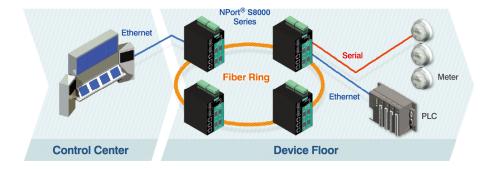
The NPort S8000 Series has a built-in full-function managed Ethernet switch that supports QoS, IGMP-snooping/GMRP, VLAN, Port Trunking, SNMPv1/v2c/v3, and IEEE 802.1X, allowing you to handle virtually any kind of application. Ethernet redundancy, which is used to increase the reliability and availability of your industrial Ethernet network, is provided by Moxa's Turbo Ring and Turbo Chain technology (recovery time < 20 ms) or RSTP/STP (IEEE 802.1w/D).

#### **Ring Redundancy at the Device Level**

Device-level communication networks for industrial automation are very critical since they are used to control and monitor device processes. The reliability of these communications depends on ring redundancy at the device level, which is designed to provide fast network fault detection and reconfiguration in order to support the most demanding control applications. The NPort S8000 Series integrates a full function NPort device server with an industrial switch to carry serial and Ethernet devices at the same time.

In addition, the NPort S8000 Series can also achieve ring redundancy with standard STP/RSTP and Moxa's proprietary Turbo Ring or Turbo Chain 2 redundancy protocols. This all-in-one design can be used to optimize and simplify your device network and enhance reliability.





# Appearance



# **Specifications**

Input/Output Interface					
Alarm Contact Channels	2, Resistive load: 1 A @ 24 VDC				
Digital Input Channels	2				
Digital Inputs	-30 to +1 V for s	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA			
Ethernet Interface					
10/100BaseT(X) Ports (RJ45 connector)	NPort S8455I/S NPort S8455I-M	8455I-T: 5 IM-SC/SS-SC Models	: 3		
100BaseFX Ports (multi-mode SC connector)	NPort S8455I-MM-SC Models: 2				
100BaseFX Ports (single-mode SC connector)	NPort S8455I-S	S-SC Models: 2			
Optical Fiber				100BaseFX	
Optical Fiber			N	100BaseFX //ulti-Mode	Single-Mode
Optical Fiber	Fibo	r Cabla Tuna			
Optical Fiber	Fibe	r Cable Type	OM1	/ulti-Mode	Single-Mode G.652
Optical Fiber		r Cable Type cal Distance		/ulti-Mode 50/125 μm	
Optical Fiber			OM1	Λulti-Mode 50/125 μm 800 MHz x km	G.652
Optical Fiber		cal Distance	OM1 4 km	Λulti-Mode 50/125 μm 800 MHz x km 5 km	G.652 40 km
Optical Fiber	Турі	cal Distance Typical (nm)	OM1 4 km 1;	Aulti-Mode 50/125 μm 800 MHz x km 5 km 1300	G.652 40 km 1310



-3 to -34

29

RX Range (dBm)

Link Budget (dB)

-3 to -32

12

**Optical Power** 

Image: market in the image:				100BaseFX		
Fiber Cable Type   Ot1   B00 Mitz & kin   0.6622     Dispansion Promity   3   1   1     Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by accessive optical prover. Note: Compute the "hybrid distance" of a specific fiber transceiver as follows: Link budget (BB) > dispersion penalty (BB) + total link loss (BB).     Magnetic Isolation Protection   1.5 kV (built-in)   5   5     Standards   IEEE 802: 10 Cross of Service Standards   Fiber Cause Standards   Fiber Cause Standards     Switch Properties   IEEE 802: 10 Cross of Service Standards   Fiber Cause Standards   Fiber Cause Standards     Switch Properties   256   Image: Standards   Fiber Cause Standards   Fiber Cause Standards     BOOP Groups   256   Image: Standards   Fiber Cause Standards   Fiber Cause Standards     Fiber MS Standards   64   Image: Standards   Fiber Manese Standards   Fiber Manese Standards     Configuration Options   Web Console (HTTP/HTTPS), Windows Utility, Stand Console, Tenet Console   Management     BOOT Device Standards   Sold Into a Standards   Fiber Manese Standards   Fiber Manese Standards     Windows Real COM Drivers				N	/ulti-Mode	Single-Mode
debt   c   c   c     Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent dianage caused by accessive optical power.   Note: When connecting a single-mode fiber transceiver as follows: Link budget (db) capersion penalty (db) resource optical power.     Magnetic isolation Protection   1.5 kV (built-in)   IEEE 802.10 :2004 for Spanning Tree Protocol     Standards   IEEE 802.10 :2004 for Spanning Tree Protocol   IEEE 802.10 :2004 for Spanning Tree Protocol     IEEE 802.10 :2004 for Spanning Tree Protocol   IEEE 802.10 :2004 for Spanning Tree Protocol   IEEE 802.10 :2004 for Spanning Tree Protocol     IEEE 802.20 if Or Class of Service IEEE 802.20 if Or Observice YM and YM YM AND YM		Fibe	r Cable Type	OM1	· ·	G.652
Additional and the provine than "spice caused by excessive opticalise first transceiver as follows: Link budget (B) > dispersion penalty (B) + total link tess (dB).     Magnetic Isolation Protection   1.5 kV built-in)     Standards   IEEE 802:10 Pro Class of Service IEEE 802:10 for Class of Service IEEE 802:10 for Class of Service IEEE 802:10 for VAN Taggitor Perfoccol IEEE 802:10 for VAN Taggitor Perfocus Perfocu					3	1
Standards IEFE 802 1D-2004 for Spanning Tree Protocol   IEEE 802.1p for Class of Sarvice IEEE 802.1p for Class of Sarvice IEEE 802.1w for Rapid Spanning Tree Protocol   IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.3w for 100BaseT   Switch Properties 256   Max. No. of VLANs 64   Priority Queues 4   VLAN ID Range VID 10 4094   Ethernot Software Features VID 10 4094   Configuration Options Web Console (HTTP/HTTPS), Windows Utility, Serial Console, Telnet Console   Management 800TP, Device Search Utility (DSU), DHCP Client, DHCP Option 82, HTTP, IP44, LLDP, Port Mirror, RMON, SMTP, SMMP+1/v2c/v3, Sysiag, TCP/IP, Telnet, Web Console   Filter 802.10, GVRP, IGMP v1/v2   Windows Soft Real COM Drivers Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/716/s1/10 (x86/x64), Windows 2008 Re/2012/2012 R2/2012/2012 R2/2012/2012 (x64), Windows Embedded CE 5.0/6.0, Windows 2008 R2/2012/2012 R2/2012/2012 (x64), Windows Embedded CE 5.0/6.0, Windows XP/2003/Vista/2008/716/s1/10 (x86/x64), Windows 2008 R2/2012/2012 R2/201		attenuator to Note: Comput	prevent damage cause te the "typical distance	ed by exces " of a speci	sive optical power. fic fiber transceiver	-
IEEE 802.16 for Class of Service   IEEE 802.16 for Class of Service   IEEE 802.16 for Rapid Spanning Tree Protocol   IEEE 802.36 for 100BaseT   IEEE 802.36 for 100BaseTX) and 100BaseFX   IEEE 802.36 for 100BaseTX) and 100BaseFX   IEEE 802.30 for 100BaseTX) and 100BaseFX   IGMP Groups 256   Max. No. of VLANs 64   VLAN ID Range 14   VLAN ID Range 4   VLAN ID Range VLAN ID Range   Sortiguration Options Web Console (HTTP/HTTPS), Windows Utility, Serial Console, Teinet Console   Management BOOTP, Device Saarch Utility (DSU), DI-CP Client, DHCP Option 82, HTTP, IPA4, LLDP, Port Mirror, FMON, SMTP, SNMPv1/v2cv3, Syslog, TCP/IP, Teinet, Web Console   Filter 802.10, GVRP, IGMP v1/v2   Windows SPa8 ICOM Drivers Windows SV98ME/NT/2000, Windows XP/2003/VIsta/2008/T/MS/8.1/10 (x86/x64), Windows XP/2003/VIsta/2008/T/B/8.1/10 (x86/x64), Windows XP Embedded   Linux Real TTY Drivers SCO UNIX, SCO OpenServer, UnixWare 7, ONX 4.25, QNX 6, Solaris 10, FraeBSD, AXX 5, TPU-UT 11, Mac OS X, macOS 10.12, macOS 10.13, macOS 10.14, macOS	Magnetic Isolation Protection	1.5 kV (built-in)				
IGMP Groups256Max. No. of VLANs64Priority Queues4VLAN ID RangeVID 1 to 4094Ethernet Software FeaturesWeb Console (HTTP/HTTPS), Windows Utility, Serial Console, Teinet ConsoleManagementBOOTP, Device Search Utility (DSU), DHCP Client, DHCP Option 82, HTTP, IPv4, LLDP, Port Mirror, RMON, SMTP, SMPV1//20/V3, Sysiog, TCP/IP, Teinet, Web ConsoleFilter802.1Q, GVRP, IGMP v1/v2Windows Real COM DriversS02.1Q, GVRP, IGMP v1/v2Windows Real COM DriversKernet versions: 2.4.x, 2.6.x, 3.x, 4.x, and 5.xFixed TTY DriversKernet versions: 2.4.x, 2.6.x, 3.x, 4.x, and 5.xFixed TTY DriversSCO UNIX, SCO OpenServer, UnixWare 7, ONX 4.25, ONX 6, Solaris 10, FreeBSD, AIX 5. x, HP-UX 11i, Mac OS X, macOS 10.12, macOS 10.13, macOS 10.14, macOS 10.15Android APIAndroid 3.1.x and laterMIBBridge MIB, Device Seatings MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, Q-BRIDGE MIB, RFC1213, RFC1317, RMON MIB Groups 1, 2, 3, 9, RSTP MIBRedundancy ProtocolsRSTP, Turbo Chain, Turbo Ring v1, Turbo Ring v2	Standards	IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for authentication IEEE 802.3 for 10BaseT IEEE 802.3ad for Port Trunk with LACP IEEE 802.3u for 100BaseT(X) and 100BaseFX				
Max. No. of VLANs64Priority Queues4VLAN ID RangeVID 1 to 4094Ethernet Software FeaturesWeb Console (HTTP/HTTPS), Windows Utility, Serial Console, Telnet ConsoleManagementBOOTP, Device Search Utility (DSU), DHCP Client, DHCP Option 82, HTTP, IPv4, LLDP, Port Mirror, RMON, SMTP, SNMPv1/v2c/v3, Syslog, TCP/IP, Telnet, Web ConsoleFilter802.10, GVRP, IGMP v1/v2Windows Real COM DriversWindows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2/2016/2019 (x64), Windows Embedded CE 5.0/c.0, Windows XP EmbeddedFixed TTY DriversSCO UNIX, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5, x, HP-UX 11i, Mac OS X, macOS 10.12, macOS 10.13, macOS 10.14, macOS 10.15Android APIAndroid 3.1.x and laterTime ManagementSNTPMIBBridge MIB, Device Settings MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, O-BRIDGE MIB, RFC1213, RFC1317, RMON MIB Groups 1, 2, 3, 9, RSTP MIBRedundancy ProtocolsRSTP, Turbo Chain, Turbo Ring v1, Turbo Ring v2SecurityHTPS, SSL, SSH	Switch Properties					
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Security HTTPS, SSL, SSH	МІВ					GE MIB, Q-BRIDGE
	Redundancy Protocols	RSTP, Turbo Cl	hain, Turbo Ring v1, Tu	ırbo Ring v2	2	
Authentication Local Account Accessibility, RADIUS	Security	HTTPS, SSL, SS	SH			
	Authentication	Local Account	Accessibility, RADIUS			



## Serial Interface

Serial Interface	
Connector	DB9 male
No. of Ports	4
Operation Modes	Disabled, Real COM mode, RFC2217 mode, TCP Client mode, TCP Server mode, UDP mode
Baudrate	50 bps to 921.6 kbps
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	None, RTS/CTS, XON/XOFF
Isolation	2 kV
RS-485 Data Direction Control	ADDC® (automatic data direction control)
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Terminator for RS-485	120 ohms
Console Port	RS-232 (TxD, RxD, GND), 8-pin RJ45 (19200, n, 8, 1)
Serial Standards	RS-232/422/485
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
DIP Switch Configuration	
Ethernet Interface	Coupler, Master, Reserved, Turbo Ring
Power Parameters	
No. of Power Inputs	2
Power Connector	2 removable 6-contact terminal block(s)
Input Current	935 mA @ 12 VDC
Input Voltage	12 to 48 VDC
Physical Characteristics	
Housing	Metal
Dimensions	73.1 x 134 x 125 mm (2.88 x 5.27 x 4.92 in)
Weight	578 g (1.27 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)



## **Environmental Limits**

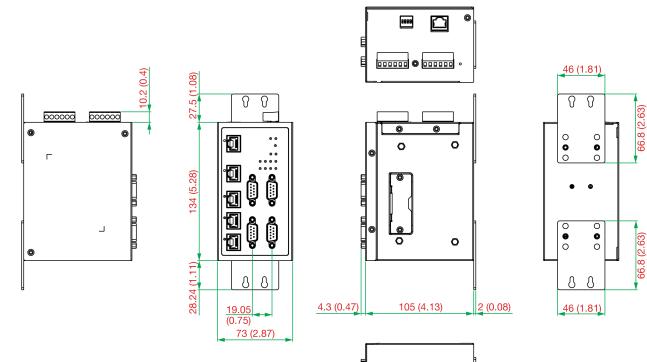
Environmental Limits	
Operating Temperature	Standard Temp. Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature	-40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Signal: 1 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 0.25 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF
Environmental Testing	IEC 60068-2-1 IEC 60068-2-3
Hazardous Locations	Class I Division 2
Safety	EN 60950-1, IEC 60950-1, UL 508, UL 60950-1
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
MTBF	
Time	NPort S8455I/S8455I-T: 287,354 hrs NPort S8455I-MM-SC/MM-SC-T: 200,951 hrs NPort S8455I-SS-SC/SS-SC-T: 286,993 hrs
Standards	Telcordia (Bellcore) Standard TR/SR
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x NPort S8000 Series device server
Documentation	1 x quick installation guide 1 x warranty card



# **Dimensions**

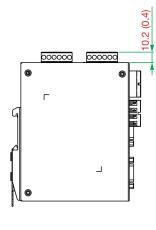
### NPort S8455I

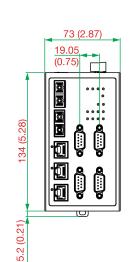
Unit: mm (inch)

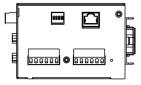


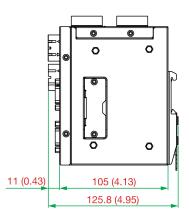
## NPort S8455I Fiber

Unit: mm (inch)

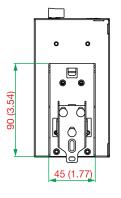














# **Ordering Information**

Model Name	10/100BaseT(X) Ports RJ45 Connector	100BaseFX Ports Multi-Mode SC Connector	100BaseFX Ports Single-Mode SC Connector	Operating Temp.	Input Voltage
NPort S8455I	5	-	-	0 to 60°C	12-48 VDC
NPort S8455I-T	5	-	-	-40 to 75°C	12-48 VDC
NPort S8455I-MM-SC	3	2	-	0 to 60°C	12-48 VDC
NPort S8455I-MM-SC-T	3	2	-	-40 to 75°C	12-48 VDC
NPort S8455I-SS-SC	3	-	2	0 to 60°C	12-48 VDC
NPort S8455I-SS-SC-T	3	-	2	-40 to 75°C	12-48 VDC

# Accessories (sold separately)

Cables	
CN20070	10-pin RJ45 to DB9 female serial cable
CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm
CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
Connectors	
ADP-RJ458P-DB9F	DB9 female to RJ45 connector
Mini DB9F-to-TB	DB9 female to terminal block connector
Power Cords	
CBL-PJTB-10	Non-locking barrel plug to bare-wire cable
Power Supplies	
DR-120-24	120W/2.5A DIN-rail 24 VDC power supply with universal 88 to 132 VAC or 176 to 264 VAC input by switch, or 248 to 370 VDC input, -10 to 60°C operating temperature
DR-4524	45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 50° C operating temperature
DR-75-24	75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 60°C operating temperature
Wall-Mounting Kits	
WK-46	Wall-mounting kit, 2 plates, 8 screws, 46.5 x 66.8 x 1 mm

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