IOLAN SDS Serial to Ethernet Device Servers

perle.com/products/iolan-sds-terminal-server.shtml

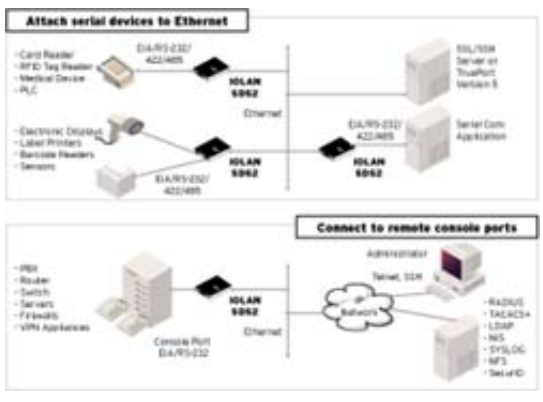
- 1, 2 or 4 software selectable RS232/422/485 serial port interfaces
- 10/100 or 10/100/1000 Ethernet
- Advanced security features for data encryption, user authentication and event management

For **secure serial to Ethernet** connectivity applications, the **IOLAN SDS Device Server** is the most advanced compact product available on the market today. Delivering high performance in a compact size, an IOLAN SDS offers extensive security, flexibility and next generation IPv6 technology making it ideal for applications that require remote device/console management, data capture or monitoring. **IOLAN Serial Device Servers** are also available with an integrated V.92 modem, support for Power over Ethernet (PoE), Class 1 Division 2 or Extended Temperature ranges.

Why IOLAN SDS Device Servers are the preferred choice:

- Powerful processors for the best throughput and performance on the market
- TrueSerial® packet technology delivers the most authentic serial connections across Ethernet for serial protocol integrity
- Indicators for network and serial interfaces for easy troubleshooting
- Plug & Play installation utility eliminates configuration hassles for all IOLAN's on your IP network
- TruePort – Perle's com/tty redirector for serial based applications operates on Windows, Vista, Linux, Solaris, SCO and Unix
- FIPS 140-2 – Cryptographic modules meet US Government NIST compliancy
- Power over serial cable eliminates costs of a separate power installation
- Next Generation IP support (IPv6) for investment protection and network compatibility
- Compact and protective solid steel enclosure for tabletop, wall mount or DIN rail mounting
- Java-free browser access to remote serial console ports via Telnet and SSH
- Ping watchdog probes enable customers to power cycle equipment with attached Perle RPS power switches in the event of an unresponsive networking gear

Secure Serial to Ethernet Connectivity



The **IOLAN SDS Device Server** enables administrators to securely access remote serial console ports on equipment such as PBX, servers, routers, network storage equipment and security appliances through an IP network. Sensitive data such as credit card holder information is protected through standard encryption tools such as Secure Shell (SSH) and Secure Sockets Layer (SSL). Access by authorized users is assured via authentication schemes such as RADIUS, TACACS+, LDAP, Kerberos, NIS and RSA

Security's SecurID tokens.

By using encryption technologies, an IOLAN can protect sensitive and confidential data from a serial device such as a credit card reader before being sent across a corporate Intranet or public Internet. For compatibility with peer encryption devices, all of the major encryption ciphers such as AES, 3DES, RC4, RC2 and CAST128 are fully supported.

Recognized as the most secure method for communicating to remote private networks over the Internet, the IPSec standard provides robust authentication and encryption of IP packets at the network layer of the OSI model. As a standard it is ideal for multi-vendor interoperation within a network providing flexibility and the ability to match the right solution for a particular application.

IOLAN Plug-ins

By choosig a Perle IOLAN Device Server you can rest assured that virtually any device with a serial COM port will operate in conjunction with your desired application exactly as it did when you had it directly connected. In the unlikely event that the Perle IOLAN Device Server does not enable this out of the box, *Perle will make it work*.

Perle IOLAN Device Servers utilize customer installable "Device Plug-ins" to successfully network devices where other solutions have failed. Request a free engineering consultation now.

Advanced IP Technology

With support for Next Generation IP (IPv6) the **IOLAN Serial to Ethernet Device Server** range provides organizations with investment protection to meet this rapidly growing standard.

Demand for IPv6, which is compatible with IPv4 addressing schemes, is driven by the need for more IP address. With the implementation and rollout of advanced cellular networks, a robust method is needed to handle the huge influx of new IP addressable devices on the Internet. In fact, the US Department of Defense has mandated that all equipment purchased be IPv6 compatible. In addition, all major Operating Systems such as Windows, Linux, Unix and Solaris, as well as routers, have built-in support for IPv6.

It is therefore important for end users and integrators to select networking equipment that incorporates the IPv6 standard. The IOLAN line with support for IPv6 already built in, is the best choice in serial to Ethernet technology.

Flexible and Reliable Serial to Ethernet Connections

An **IOLAN SDS Device Server** is ideal for connecting serial based COM port, UDP or TCP socket based applications to remote devices. Perle's TruePort re-director provides fixed TTY or COM ports to serial based applications enabling communication with remote devices connected to Perle IOLAN's either in encrypted or clear text modes. You can also tunnel serial data between devices across an IP network.

Perle's Device Management software provides better centralized control of multiple units resulting in maximum uptime for your remote equipment.

All IOLAN SDS models have added protection against electrostatic discharges and power surges with robust 15Kv ESD protection circuitry enabling organizations to utilize this solution in the field with confidence.

Lifetime Warranty

All **Perle IOLAN SDS Serial to Ethernet Device Servers** are backed by the best service and support in the industry including Perle's unique lifetime warranty. Since 1976 Perle has been providing its customers with networking products that have the highest levels of performance, flexibility and quality.

Serial Port Access
Connect directly using Telnet / SSH by port and IP address
Connect with EasyPort menu by Telnet / SSH
Use an internet browser to access with HTTP or secure HTTPS via EasyPort Web menu
Java-free browser access to remote serial console ports via Telnet and SSH
Ports can be assigned a specific IP address (aliasing)
Multisession capability enables multiple users to access ports simultaneously *
Multihost access enables multiple hosts/servers to share serial ports
Accessibility
In-band (Ethernet) and out-of-band (dial-up modem) support
Dynamic DNS enables users to find a console server from anywhere on the Internet
Domain name control through DHCP option 81
IPV6 and IPV4 addressing support
Availability
Primary/Backup host functionality enables automatic connections to alternate host(s)
Security
SSH v1 and v2
SSL V3.0/TLS V1.0, SSL V2.0
SSL Server and SSL client mode capability
SSL Peer authentication
IPSec VPN : NAT Traversal, ESP authentication protocol
Encryption: AES (256/192/128), 3DES, DES, Blowfish, CAST128, ARCFOUR(RC4), ARCTWO(RC2)
Hashing Algorithms: MD5, SHA-1, RIPEMD160, SHA1-96, and MD5-96

Key exchange: RSA, EDH-RSA, EDH-DSS, ADH
X.509 Certificate verification: RSA, DSA
Certificate authority (CA) list
Local database
RADIUS Authentication, Authorization and Accounting
TACACS+ Authentication, Authorization and Accounting
LDAP, NIS, Kerberos Authentication
RSA SecureID-agent or via RADIUS Authentication
SNMP v3 Authentication and Encryption support
IP Address filtering
Disable unused daemons
Active Directory via LDAP
Terminal Server
Telnet
SSH v1 and v2
Rlogin
Auto session login
LPD, RCP printer
MOTD - Message of the day
Serial machine to Ethernet
Tunnel raw serial data across Ethernet - clear or encrypted
Raw serial data over TCP/IP
Raw serial data over UDP
Serial data control of packetized data
Share serial ports with multiple hosts/servers
Virtual modem simulates a modem connection - assign IP address by AT phone number

	Virtual modem data can be sent over the Ethernet link with or without SSL encryption
	TruePort com/tty redirector for serial based applications on Windows, Linux, Solaris, SCO, HP UX, NCR UNIX and AIX. For a complete list of all the latest drivers click here
	TrueSerial packet technology provides the most authentic serial connections across Ethernet ensuring serial protocol integrity
	RFC 2217 standard for transport of serial data and RS232 control signals
	Customizable or fixed serial baud rates
	Plug-ins allow customer or Perle provided plug-ins for special applications
	Software Development Kit (SDK) available
	Serial encapsulation of industrial protocols such as ModBus, DNP3 and IEC-870-5-101
	ModBus TCP gateway enables serial Modbus ASCII/RTU device connection to ModBus TCP
	Data logging will store serial data received when no active TCP session and forward to network peer once session re-established - 32K bytes circular per port
Console Management	
	Sun / Oracle Solaris Break Safe
	Local port buffer viewing - 256K bytes per port
	External port buffering via NFS, encrypted NFS and Syslog
	Event notification
	Manage AC power of external equipment using Perle RPS power management products
	Clustering - central console server enables access ports across multiple console servers
	Windows Server 2003/2008 EMS - SAC support GUI access to text-based Special Administrative Console
	Ping watchdog probes enable customers to power cycle equipment with attached Perle RPS power switches in the event of an unresponsive networking gear
Remote Access	
Dial, direct serial	PPP, PAP/CHAP, SLIP
	HTTP tunneling enables firewall-safe access to remote serial devices across the internet
Automatic DNS Update	Utilize DHCP Opt 81 to set IOLAN domain name for easy name management and with Dynamic DNS support , users on the Internet can access the device server by name without

	having to know its IP address. See Automatic DNS update support for details
IPSEC VPN client/servers	Microsoft L2TP/IPSEC VPN client (native to Windows XP)
	Microsoft IPSEC VPN Client (native to Windows Vista)
	Cisco routers with IPSEC VPN feature set
	Perle IOLAN SDS/STS and SCS models
	OA&M (Operations, Administration and Management)
	SNMP V3 - read and write, Perle MIB
	Syslog
	Perle Device Manager - Windows based utility for large scale deployments
	Configurable default configuration
	Installation Wizard
	Set a Personalized Factory Default for your IOLANs
	Protocols
	IPv6, IPv4, TCP/IP, Reverse SSH, SSH, SSL, IPSec/IPv4, IPSec/IPv6, L2TP/IPSec, CIDR, RIPV2/MD5, ARP, RARP, UDP, UDP Multicast, ICMP, BOOTP, DHCP, TFTP, SFTP, SNTP, Telnet, raw, reverse Telnet, LPD, RCP, DNS, Dynamic DNS, WINS, HTTP, HTTPS, SMTP, SNMPV3, PPP, PAP/CHAP, SLIP, CSLIP, RFC2217, MSCHAP

* Available on 2 and 4 port models

Hardware Specifications - IOLAN SDS - 1, 2 and 4 port Compact Serial Device Servers

	IOLAN SDS1	IOLAN SDS2	IOLAN SDS4	IOLAN SDS1 G	IOLAN SDS2 G	IOLAN SDS4 G
Processor	MPC852T, 66 Mhz, 87 MIPS			600 Mhz ARM processor		
	Memory					
RAM MB	32			512		
Flash MB	8			4000		
	Interface Ports					
Number of Serial Ports	1	2	4	1	2	4
Serial Port	Software	Software selectable EIA-		Software	Software selectable	

Interface	selectable EIA232/422/485 on DB9M, RJ45, DB25M or DB25F	232/422/485 on RJ45	selectable EIA232/422/485 on DB9M, RJ45 or DB25F	EIA-232/422/485 on RJ45
Sun / Solaris	Sun / Oracle ‘Solaris' Safe - no "break signal" sent during power cycle causing costly server re-boots or downtime			
Serial Port Speeds	50bps to 230Kbps with customizable baud rate support		300bps to 230Kbps with customizable baud rate support	
Data Bits	5,6,7,8, 9-bit protocol support			
Parity	Odd, Even, Mark, Space, None			
Flow Control	Hardware, Software, Both, None			
Serial Port Protection	15Kv Electrostatic Discharge Protection (ESD)			
Local Console Port	RS232 on Serial Port			
Network	10-base T / 100-base TX Ethernet RJ45		Autosensing 1000-base-T / 100-base TX / 10-base T Auto-MDIX	
	Software selectable Ethernet speed 10/100 Auto		Software selectable Ethernet speed 10/100/1000 Auto	
	Software selectable Half/Full/Auto duplex			
Ethernet Isolation	1.5Kv Magnetic Isolation			
	Power			
Power Supply	120 V AC (USA), 230V AC (International) Wall Power Adaptor included			
Power Supply Options	Power via External power 9-30v DC, 4.8 Watts uses standard 5.5mm x 9.5mm x 2.1mm barrel socket, Power IN over serial cable			
Nominal Input Voltage	12v DC / 24v DC			
Input Voltage Range	9-30v DC			
Power IOLAN	9-30v DC			

over Serial						
Power External Device via Serial Port	+5v DC regulated, 1W max					
Typical Power Consumption '@ 12v DC (Watts)	1.7	2.1	2.4	1.9	2	2
	Does not include power for devices connected to serial port					
Indicators						
LEDs	Power/Ready					
	Network Link					
	Network Link activity					
	Serial: Transmit and Receive data per port					
Environmental Specifications						
Heat Output (BTU/HR)	5.8	7.2	8.2	6,8	8.9	16.38
MTBF (Hours)	123,192	188,596	150,124	238,681	218,646	187,919
	Calculation model based on MIL-HDBK-217-FN2 @ 30 °C					
Operating Temperature	0C to 55C, 32F to 131F					
Storage Temperature	-40C to 66C, -40F to 150F					
Humidity	5 to 95% (non condensing) for both storage and operation.					
Case	SECC Zinc plated sheet metal (1 mm)					
Ingress Protection Rating	IP40					
Mounting	Wall or Panel mounting, DIN Rail mounting kit optional					
Product Weight and Dimensions						

Weight	0.23 kg (0.5 lbs)	0.35 kg (0.77 lbs)	0.23 kg (0.5 lbs)	0.35 kg (0.77 lbs)
Dimensions	90 x 64 x 22 (mm), 3.6 x 2.5 x 0.87 (in) case dimensions not including mounting tabs,	112 x 82 x 28 (mm), 4.4 x 3.2 x 1.1 (in) case dimensions not including mounting tabs,	90 x 64 x 22 (mm), 3.6 x 2.5 x 0.87 (in) case dimensions not including mounting tabs,	112 x 82 x 28 (mm), 4.4 x 3.2 x 1.1 (in) case dimensions not including mounting tabs,
	90 x 89 x 24 (mm), 3.6 x 3.5 x 0.87 (in) includes mounting tabs.	112 x 105 x 28 (mm), 4.4 x 4.2 x 1.1 (in) case dimensions not including mounting tabs,	90 x 89 x 24 (mm), 3.6 x 3.5 x 0.87 (in) includes mounting tabs.	112 x 105 x 28 (mm), 4.4 x 4.2 x 1.1 (in) case dimensions not including mounting tabs,
	Packaging			
Shipping Dimensions	260 x 170 x 70 (mm), 10.2 x 6.7 x 2.8 (in)			
Shipping weight	0.49 KG (1.1 lbs)	0.66 KG (1.5 lbs)	0.49 KG (1.1 lbs)	0.66 KG (1.5 lbs)
	Regulatory Approvals			
Emissions	CFR47:2003, Chapter 1, Part 15 Subpart B,(USA) Class A		CFR47 FCC Part 15 Subpart B:2015	
	ICES-003, Issue 4, February 2004 (Canada)		ICES-003:2016 Issue 6:2016	
	CISPR 32:2015/EN 55032:2015 (Class A)			
			CISPR 16-2-3:2010/A2:2014	
	EN61000-3-2 : 2010, Limits for Harmonic Current Emissions		EN61000-3-2:2014, Limited for Harmonic Current Emissions	
	EN61000-3-3 : 2010, Limits of Voltage Fluctuations and Flicker		EN61000-3-3:2013, Limits of Voltage Fluctuations and Flicker	

Immunity	CISPR 24:2010/EN 55024:2010	
	EN61000-4-2: 2009 Electrostatic Discharge	
	EN61000-4-3: 2006/A2:2010: RF Electromagnetic Field Modulated	
	EN61000-4-4: 2004 Fast Transients	
	EN61000-4-5: 2006 Surge	
	EN61000-4-6: 2009 RF Continuous Conducted	
	EN61000-4-8: Power-Frequency Magnetic Field	
		EN61000-4-11: Voltage Dips and Voltage Interruptions
Safety	IEC 60950-1 (ed 2); am1 am2 and EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	IEC 62368-1 and EN 62368-1:2014
	CAN/CSA-C22.2 No. 60950-1-03 and ANSI/UL 60950-1, Second Edition	CAN/CSA-C22.2 No. 62368-1-14 and UL 62368-1
Other	Reach, RoHS and WEEE Compliant Directive 2011/65/EU restriction of the use of certain hazardous substances in electrical and electronic equipment and meets the following standard:: EN 50581:2012	
	CCATS - G168387	
	ECCN - 5A992	
	HTSUS Number: 8471.80.1000	
	Perle Limited Lifetime Warranty	

Serial Connector Pinout

IOLAN DB9M Socket	Direction	RS232	RS485 Full Duplex	RS485 Half Duplex	RS422
1	←	DCD	-	-	-
2	←	RxD	RxD+	-	RxD+
3	→	TxD	TxD+	DATA+	TxD+
4	→	DTR	-	-	-

5	—	GND	GND	GND	GND
6	←	DSR	RxD-	-	RxD-
7	—	RTS	-	-	-
8	←	CTS	-	-	-
9	—	-	TxD-	DATA-	TxD-
IOLAN RJ45 Socket	**Direction**	**RS232**	**RS485 Full Duplex**	**RS485 Half Duplex**	**RS422**
1	—	Power In	Power In	Power In	Power In
2	←	DCD	-	-	-
3	→	RTS	TxD+	DATA+	TxD+
4	←	DSR	-	-	-
5	→	TxD	TxD-	DATA-	TxD-
6	←	RxD	RxD+	-	RxD+
7	—	GND	GND	GND	GND
8	←	CTS	RxD-	-	RxD-
9	→	DTR	-	-	-
10	—	Power Out	Power Out	Power Out	Power Out
IOLAN DB25M Socket	**Direction**	**RS232**	**RS485 Full Duplex**	**RS485 Half Duplex**	**RS422**
1	—	Sheild	Sheild	Sheild	Sheild
2	→	TxD	-	-	-
3	←	RxD	-	-	-
4	→	RTS	-	-	-
5	←	CTS	-	-	-
6	←	DSR	-	-	-

7	—	GND	GND	GND	GND
8	←	DCD	-	-	-
9	—	Power Out	Power Out	Power Out	Power Out
12	—	Power In	Power In	Power In	Power In
13	—	-	-	-	CTS-
14	—	-	TxD+	DATA+	TxD+
15	—	-	TxD-	DATA-	TxD-
18	—	-	-	-	RTS+
19	—	-	-	-	RTS-
20	→	DTR	-	-	-
21	—	-	RxD+	-	RxD+
22	—	-	RxD-	-	RxD-
25	—	-	-	-	CTS+

IOLAN DB25F Socket	Direction	RS232	RS485 Full Duplex	RS485 Half Duplex	RS422
1	—	Sheild	Sheild	Sheild	Sheild
2	←	RxD	-	-	-
3	→	TxD	-	-	-
4	←	CTS	-	-	-
5	→	RTS	-	-	-
6	→	DTR	-	-	-
7	—	GND	GND	GND	GND
8	←	DCD	-	-	-
9	—	Power Out	Power Out	Power Out	Power Out
12	—	Power In	Power In	Power In	Power In
13	—	-	-	-	RTS-

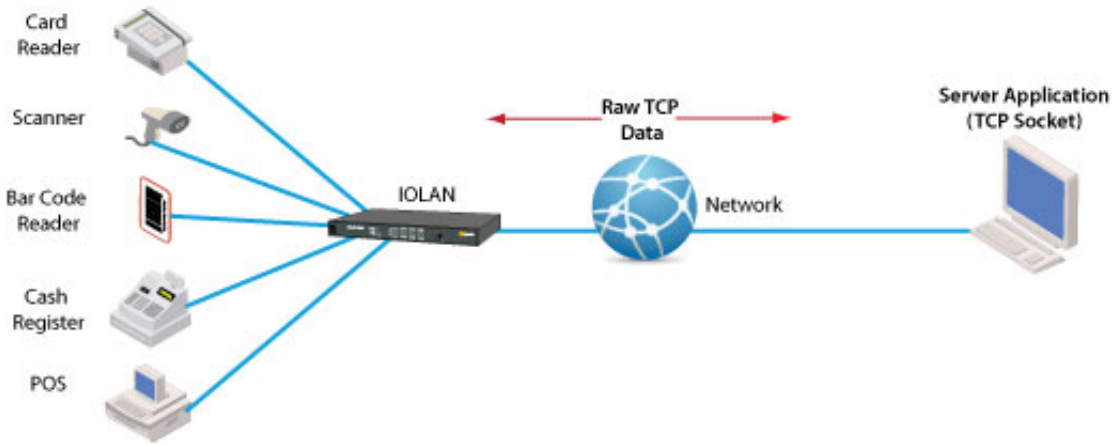
14	——	-	RxD+	-	RxD+
15	——	-	RxD-	-	RxD-
18	——	-	-	-	CTS+
19	——	-	-	-	CTS-
20	←	DSR	-	-	-
21	——	-	TxD+	DATA+	TxD+
22	——	-	TxD-	DATA-	TxD-
25	——	-	-	-	RTS+

Optional Perle adapters for use with straight thru CAT5 cabling

TCP

Using RAW TCP Sockets

A raw TCP socket connection which can be initiated from the serial-Ethernet device or from the remote host/server. This can either be on a point to point or shared basis where a serial device can be shared amongst multiple devices. TCP sessions can be initiated either from the TCP server application or from the Perle IOLAN **serial-Ethernet** adapter.

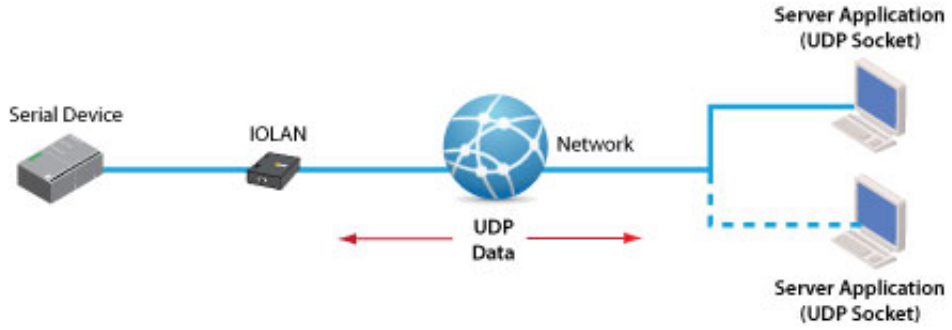


UDP

Using Raw UDP Sockets

For use with UDP based applications, Perle IOLANs can convert serial equipment data for transport across

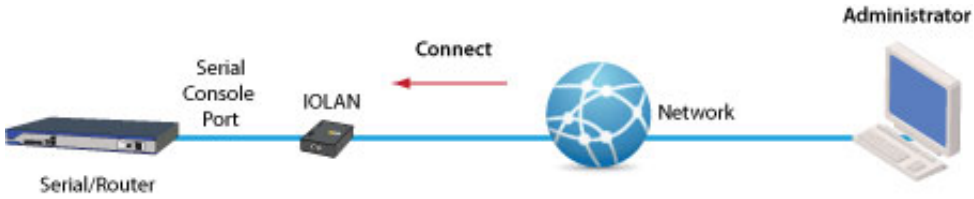
UDP packets either on a point to point basis or shared across multiple devices.



Console Server

Console Management

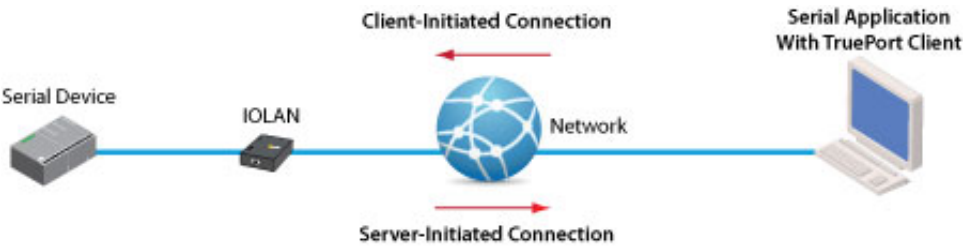
For access to remote console ports on routers, switches,etc, Perle IOLAN's enable administrators secure access to these RS232 ports via inband Reverse Telnet / SSH or out of band with dial-up modems. Perle IOLAN models with integrated modems are available.



COM/TTY

Connect Serial-based Applications with a COM/TTY Port Driver

Serial ports can be connected to network servers or workstations running Perle's TruePort software operating as a virtual COM port. Sessions can be initiated either from the Perle IOLAN or from TruePort.



Tunneling

Serial Tunneling between two Serial Devices

Serial Tunneling enables you to establish a link across Ethernet to a serial port on another IOLAN. Both IOLAN serial ports must be configured for Serial Tunneling (typically one serial port is configured as a Tunnel Server and the other serial port as a Tunnel Client).

Virtual Modem

Virtual Modem

Enables the serial-Ethernet adapter to simulate a modem connection. When connected to the IOLAN and initiates a modem connection, the IOLAN starts up a TCP connection to another IOLAN serial-Ethernet adapter configured with a Virtual Modem serial port or to a host running a TCP application.