One Stop Solution
For Device Networking

External Device Servers
Wireless Device Servers
Embedded Device Servers
Industrial Device Servers

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www.sena.com

Network-Enable the World

Sena Technologies is a leading manufacturer of Device Server product line that includes external, embedded, wireless and industrial device servers; and Industrial Bluetooth product line that includes Bluetooth serial adapters, OEM Bluetooth serial modules and Bluetooth Access Point for device networking solution in the areas of IT/ Telco, retail/POS, industrial automation, building automation, and medical automation. Our complete product lines allow customers to automatically collect, track, measure, monitor and control the device to build their business.

The value of Sena solutions is proven in millions of network-enabled devices around the world that add intelligence to business. Discover for yourself the benefits of Sena products. We provide a lifecycle of services to help you plan, design, implement, and operate your device network in today's rapidly changing environment.

Additional sales and product information are only moments away.

Visit us at www.sena.com

Systematic Quality Assurance and a 5-year Warranty

To ensure the best quality of products, Sena maintains the utmost quality assurance system throughout the entire life cycle of products by conducting various types of tests in each stage of R&D, production, inspection, and technical support before product deployment. The 5-year warranty proves our commitment to the life-long service for all of our products.

Technical Support

With years of rich field experiences in various industries, Sena is committed to continuously provide the highest quality of pre-sales and post-sales support for VAR/SI's and end-users. Sena prvoides various channels for communication with customers through e-mail, telephone and online support system. At our website, we provide:

- Product manual and technical material
- Case studies and white papers
- The latest software / firmware
- FAQ regarding products and technology
- Knowledge database
- My Q&A section

Sena is dedicated to continuously develop all of its customer-support practices to enhance the latest technologies, and demands of its customers.

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Power up your Business with
Sena Device Networking Solution

Sena specializes in device-networking solutions in the areas of Industrial Automation, Building Automation, Security and Access Control, Transportation, Retail/POS, IT/Telco, and Medical/Healthcare. Find out how Sena can help you.

1 Industrial Automation

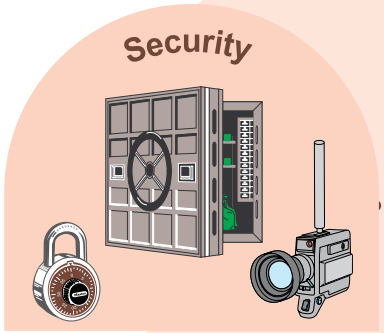
As today's computing environment becomes increasingly complex and is subjected to on going change, managing the industrial devices at factory floor has become a burden. Optimization of the production chain demands intelligent IT applications and network-enabling solutions. The need to capture and analyze the data from industrial and manufacturing equipment and to integrate that machinery with the company's business network is quickly becoming a very real need.

Ethernet - or more importantly TCP/IP - is fast becoming the preferred solution for remote management of industrial devices at factory floor. Driven by manufacturing's desire to connect the factory floor with the rest of the enterprise, industrial devices connected to ethernet enablers are giving users new ways to view and control factory data using MODBUS supported protocols.

2 Building Automation & Security

A Building Automation management system allows a facilities manager to better manage resources, improve building safety, and reduce energy costs.

Sena provides an integrated solution for building sub-systems such as RFIDs, security, HVAC, lighting, elevators and safety systems that enables managers to control everything from electrical and water metering to building access from a single terminal, and can even diagnose system problems remotely.



Access Controls
Emergency Alarms
Fire control Panels
Goverment Facilities
Time and Attendance Clocks
Suveillance Cameras

3 Medical / Healthcare

Healthcare environments such as hospitals, and laboratories rely mostly upon monitoring devices like blood analyzers, pulse oximeters, and liquid analyzers to efficiently diagnose and treat patients. By connecting these healthcare devices to Sena products, healthcare providers can take advantage of existing Ethernet equipment and cabling without reconfiguring the physical plant.

4 IT / Telco

The rapid development of network and telecommunication technologies have changed the related infrastructure to put more emphasis on efficiency and expandability through such traits as high availability, scalability, downsizing, clustering, server farms, distributing systems, etc. The number and hierarchy of the devices that need to be managed have also increased rapidly. Thus, a more systematic approach in solving the problems such as network crash or device down is required.

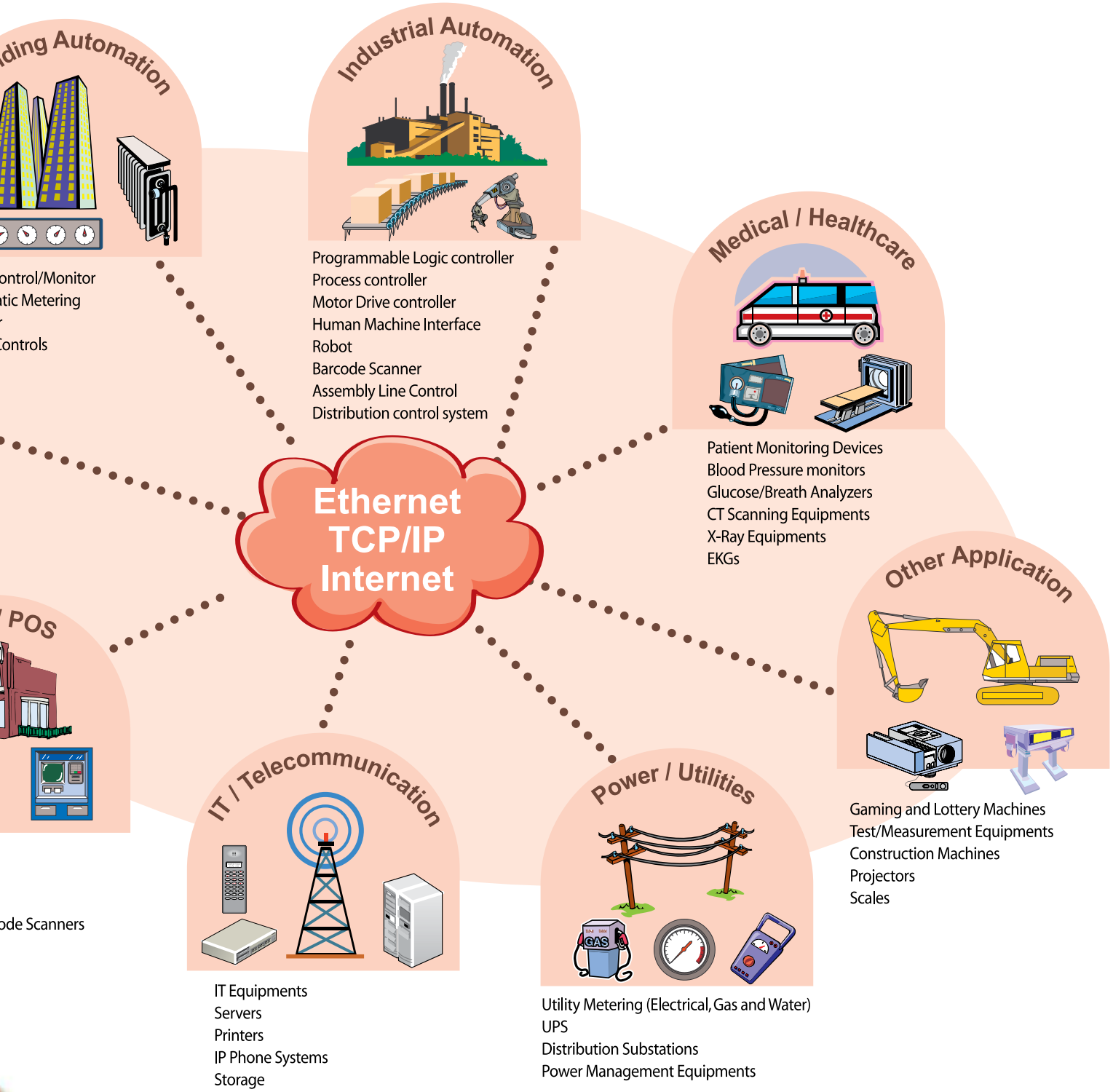
Utilizing various TCP/IP network paths such as ADSL, cable, modem or wireless LAN to manage console ports of various equipments used in the IT/Telco industry, Sena is providing a range of solutions to manage various IT/Telco equipments through remote access. In-band management using an intranet, as well as out-of-band management methods using Internet,telephone modems are also provided.

POS Terminals
POS Printers
RFID Readers
Card Readers/Barco
Cash Registers
Kiosks
Vending Machines

5 Retail / POS

With customers throughout the world, Sena has built its reputation on unique, customer focused Point-of-Sale/Retail solutions including ATM Connectivity, POS Terminals, POS Peripherals, Lottery, and PC Cash Registers and Hospitality POS Systems.

Benefits of choosing a Sena POS Retail Solution include: Reduced Transaction Processing Costs; Faster Transactions; Leverages Existing Equipment and Systems; and Greater Flexibility and Mobility.



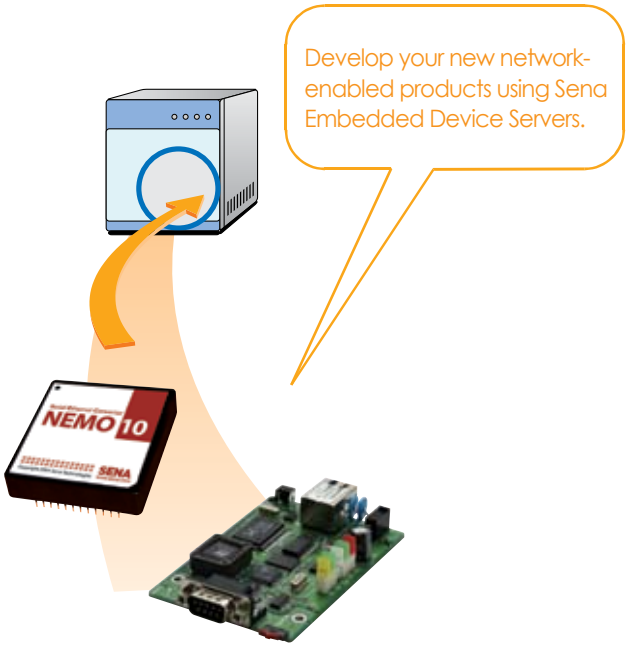
Product Overview

1 Embedded Device Servers

Designed to Simplify Embedded Device Networking

Looking for an embedded networking solution for your serial equipment? You've come to the right place. Sena recognizes the desire and showcases embedded device server products that provide integrated hardware and software solutions for manufacturers who want to add network device servers to their products.

- Compact and Low power consumption.
- DIL type Ethernet controller for on board installation.
- Board Type models for easier integration.



2 External Device Servers

Sena's serial device servers are available in a variety of configurations to fit your application needs. Choose between wired or wireless network connectivity, advanced security, customization, and multi-broadcasting for device networking solutions.

Sena Serial Device Servers provide the ability to control, monitor, diagnose and troubleshoot equipment over a network or the Internet, while preserving your equipment investments.

- Max. 230Kbps serial speed.
- 10/100 Mbps fast Ethernet interface.
- Flexible TCP/UDP host mode support.
- Multiple host connection/data transfer.
- Secure communication with SSL and TLS.
- Supports both wall and DIN-Rail style mounting.

3 Wireless Device Servers

Connect your Serial devices to a Wireless Network Instantly.

Sena Device Server's family supports wireless communication with 802.11b WiFi Interface.

The LS100W is a cost-effective Serial Device Server that makes your legacy serial devices manageable via industry standard WiFi network. In addition, available in 4, 8 and 16 port models, the HelloDevice STS Series product line is provided with a PC Card interface that enables users to access another network through 802.11b.

4 Industrial Device Servers

For application-specific requirements such as Industrial automation, UPS management and Industrial I/O device, Sena offers a full range of external device servers - IALink Series, UPSLink Series and Rhio10.

- Modbus/TCP for Industrial-specific application needs
- Supports industry-standard SNMP MIB II and UPS MIB for UPS Management
- Ethernet-Digital I/O model with screw terminal block interface.

	NEMO10	LS100	LS100W	Pro Series	SS100	STS Series	IALink100
							
Serial Interface	Built-in UART	RS232	RS232	RS232/422/485	RS232/422/485	RS232	RS232/422/485
Connector / # Port	24 pin Dual In Line Connector	DB9 M, 1	DB9 M, 1	DB9 M, 1/2/4/8	DB9 M, 1	RJ45, 8/16	Terminal block, 1
Data Rate	115 kbps	115 kbps	115 kbps	230 kbps	230 kbps	230 kbps	115 kbps
Network Interface	10 Base-T	10 Base-T	802.11b	10 / 100 Base-T	10 / 100 Base-T	10 / 100 Base-T	10 Base-T
SSL Encryption	No	No	No	Yes	Yes	Yes	No
PC Card Slot	None	None	None	None	None	Yes	None
Surge Protector	No	No	No	Yes	Yes	Yes	Yes

Software Support

COM Port Redirector

Sena provides COM Port Redirector software for those users who want to use the existing application programs based on serial communication. This means that existing COM / TTY-based software can be preserved, without investing in additional software.

COM Port Redirector establishes a transparent connection between host and serial device by mapping the IP:Port of the Sena's device or terminal server port to a local COM/TTY port on the host computer. For Windows systems, Sena offers Serial/IP COM Port Redirector software and TTYredirector for Linux systems from Tactical Software.

◆ Serial / IP COM Port Redirector for Windows platform

When your solution includes software running on a Windows PC, and that software uses COM ports to communicate with devices, use COM port redirection solution.

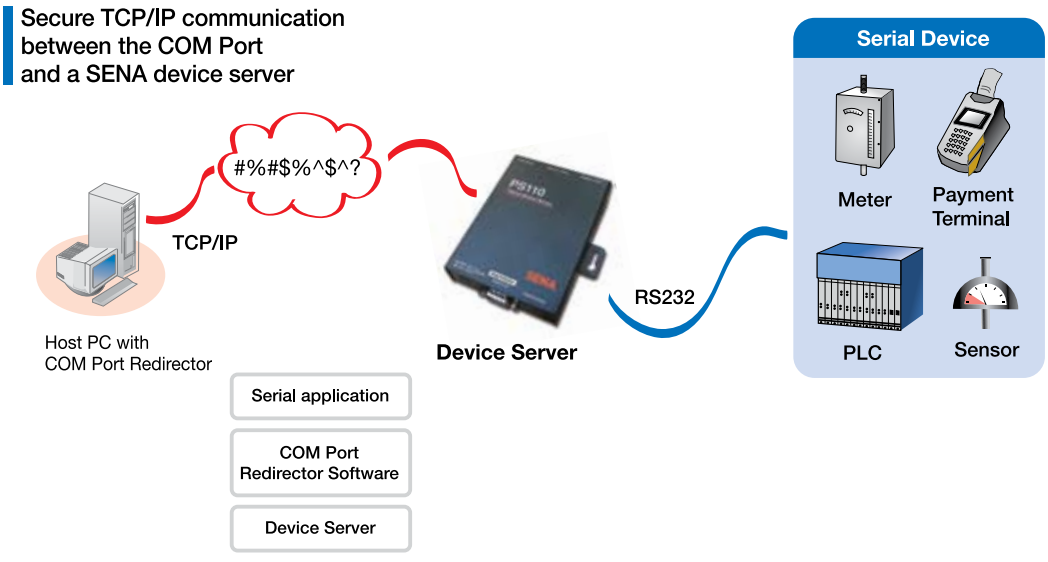
The Serial/IP Redirector software runs at the kernel level to provide superior performance and low latency.

Features include: Up to 4,096 simultaneous connections; Selectable auto-reconnect option for "always-on" connections; Requires no other software for deployment, and Configuration Wizard automates and verifies settings.

Serial/IP Application Scenario

COM Port Redirector with Encryption

Sena now takes COM Port Redirection a step further with encryption features, offering a secure Ethernet connection between the COM port and a Sena device server or terminal server. When working with the Serial/IP COM Port Redirector and OpenSSL Toolkit, the new SSL/TLS Security option offers a selection of five ciphers (including 3-DES and AES) and strengths up to 256 bits, sufficient to meet the tough security requirements encountered in the financial services industry.



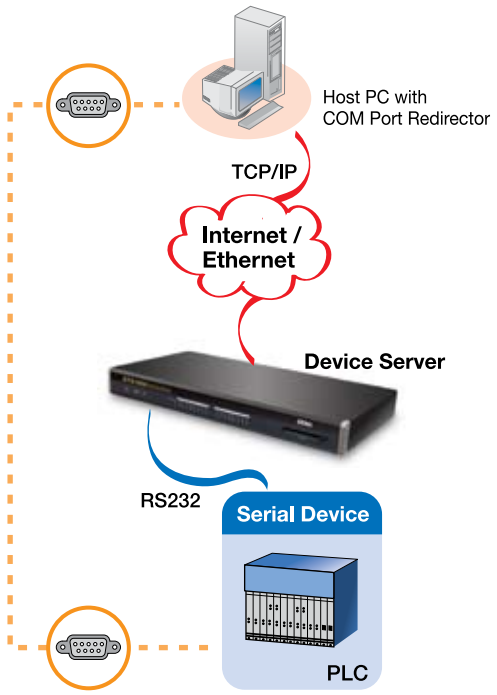
※Applicable only to PS110/410/810, SS100 and STS Series

COM Port Control protocol support

For some serial applications that require features provided by the COM Port Control protocol specified by IETF RFC 2217, Sena has a solution when working with the Serial/IP COM port redirector.
Sena's high-end device servers and terminal server product line support the COM Port Control protocol for those applications that must programmatically change serial port settings like baud rates and framing, and require serial line status signals.

※ Applicable only to PS110/410/810, SS100 and STS Series

User can control serial parameters like baud rate, data bit and flow control options on the fly



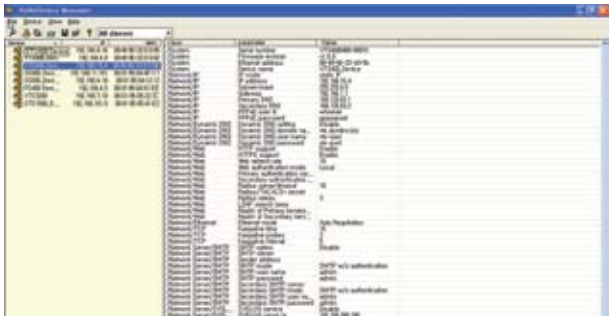
◆ TTYredirector, COM Port Redirector for Linux platform

TTYredirector is a COM port redirector program that supports most versions of Linux O/S.
※ See more information at www.sena.com

Utilities and Tools

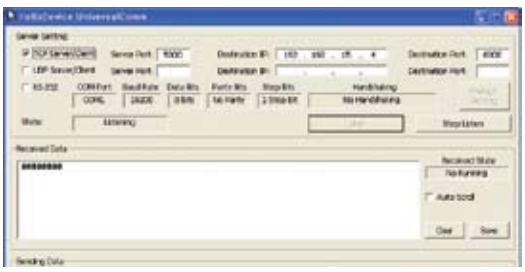
▶ HelloDevice Manager

HelloDevice Manager is a GUI-based software to configure and monitor a variety of Sena products through on-screen menus instead of at the command line.



▶ HelloDevice UniversalComm

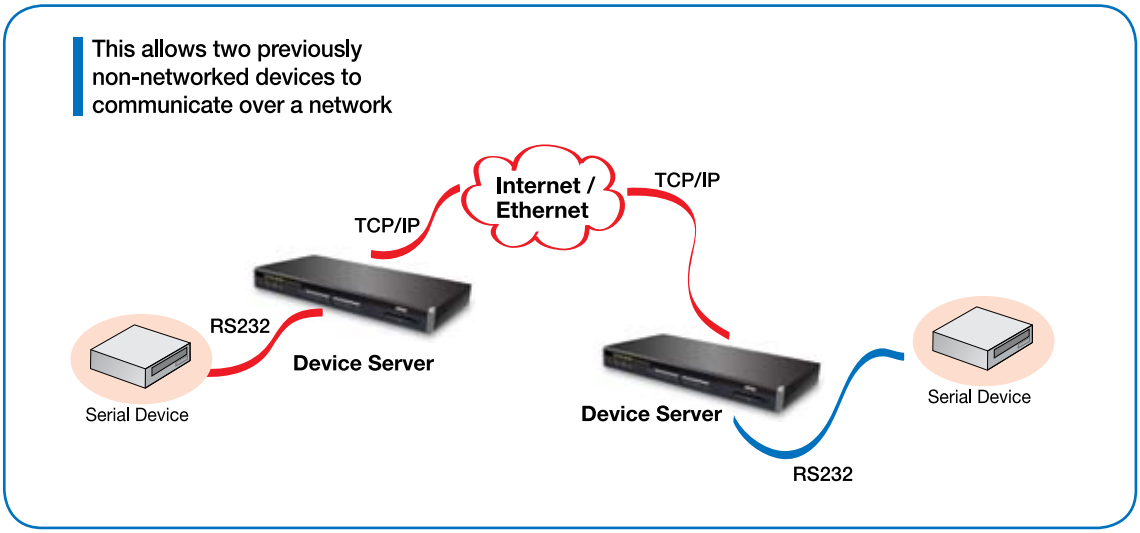
HelloDevice UniversalComm is a program that enables users to flexibly send or receive data through TCP or UDP or Serial RS232 connections. The purpose of using this program is to test the communication functions of Sena device and terminal servers.



Typical Application Scenarios using Sena Device Servers

Tunneling Mode

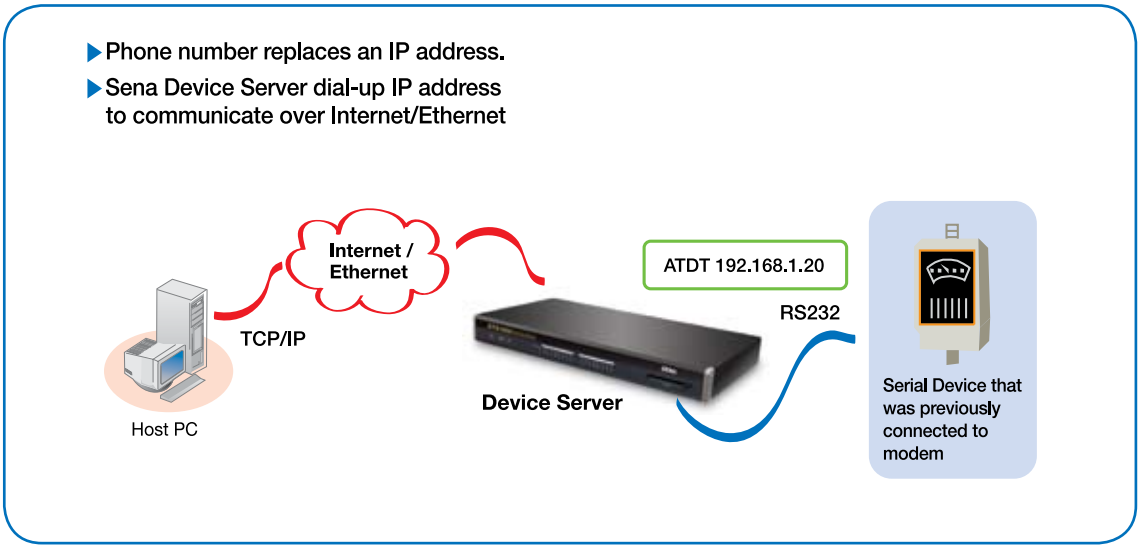
Serial tunneling occurs when two device servers are configured to work together to share or communicate their respective serial device's data. The serial tunnel is established by connecting one device server configured for Server/Client mode to a device collecting data and the other device server configured for Server/Client mode to the field device sending data. This allows two previously non-networked and isolated devices to communicate information and operate with existing installed software applications of devices on a network, instead of a long serial cable.



※ Applicable Models: All models

Modem Emulation

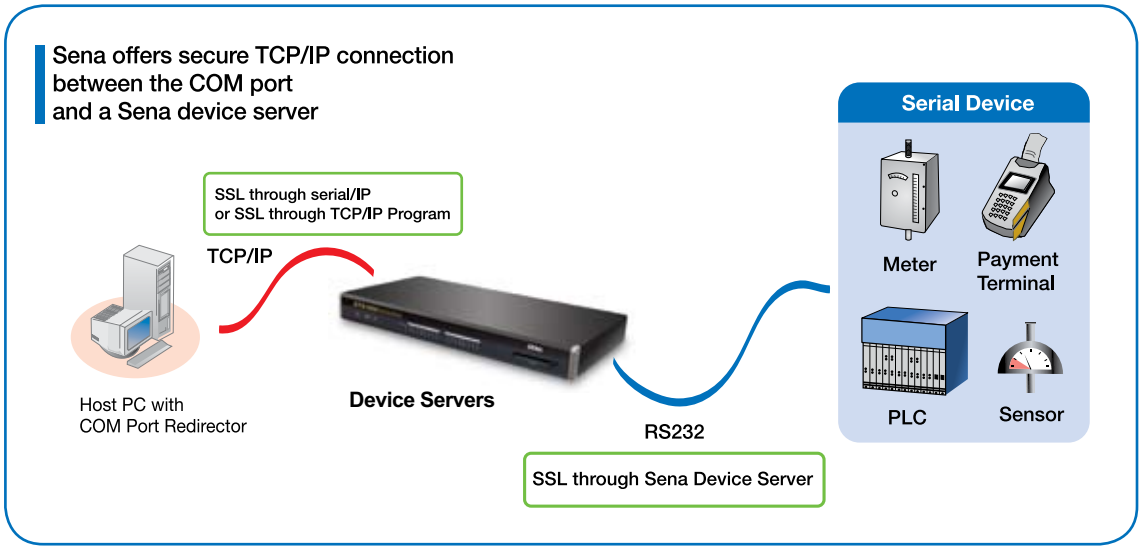
Modem emulation feature enables a networked Sena product to act as a modem to send and receive data over an IP network instead of a PSTN. Furthermore, Sena's high-end product lines, Super and STS Series supports Modem Emulation mode over SSL encryption. This unique feature provides secure serial modem emulation, accepting AT commands in an encrypted format to connect and communicate with Serial devices.



※ Applicable Models: All models except LS100/100W

Secure Communication

Sena products support Security features such as static key based 3DES data encryption, and SSL for secure connection between a client and a server, over which any amount of data can be sent securely. In addition, HTTPS for secure data transfer over the web, SCP for secure file transfer, and IP filtering controls the access to serial devices.



※ Applicable Models: PS110/410/810, SS100, STS400/800/1600

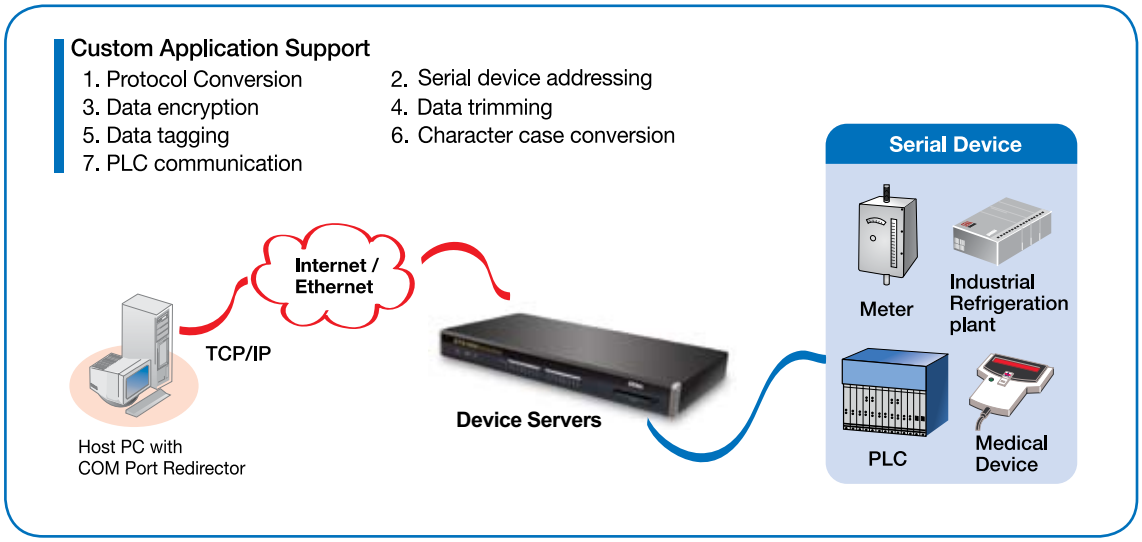
Custom Application Support

Deploy your own embedded Linux applications

One of the strengths of Sena's products is their flexibility. Since no two solutions are the same, STS Series product line has been designed to correctly facilitate the connection in any situation. The STS Series Device Server is intended for the deployment of your own embedded Linux applications.

Users can customize the web management interface, and integrate the programmed dynamic web pages to web menu. In addition, Users can manipulate the raw data stream between remote host and serial device by adding a filtering program. The user-defined filter program communicates with other programs that are reading/writing serial port and socket by using FIFO, and so users can easily manipulate the serial data without programming related to serial port and socket.

Sena is committed to open-source development and fully supporting its customers.

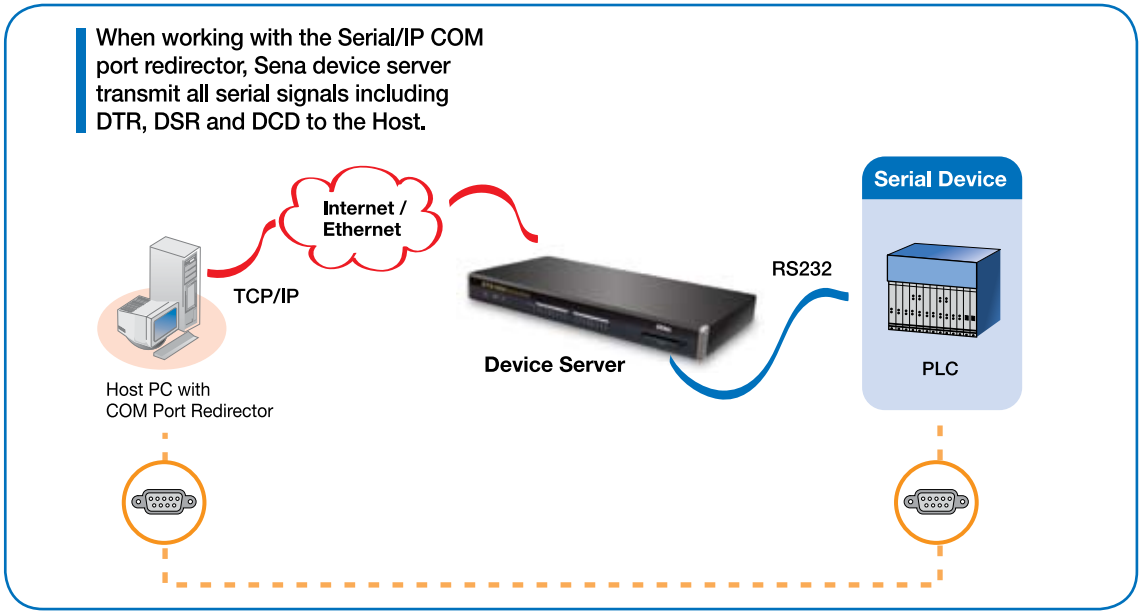


※ Applicable Models: STS400/800/1600

Typical Application Scenarios using Sena Device Servers

Virtual COM Mode

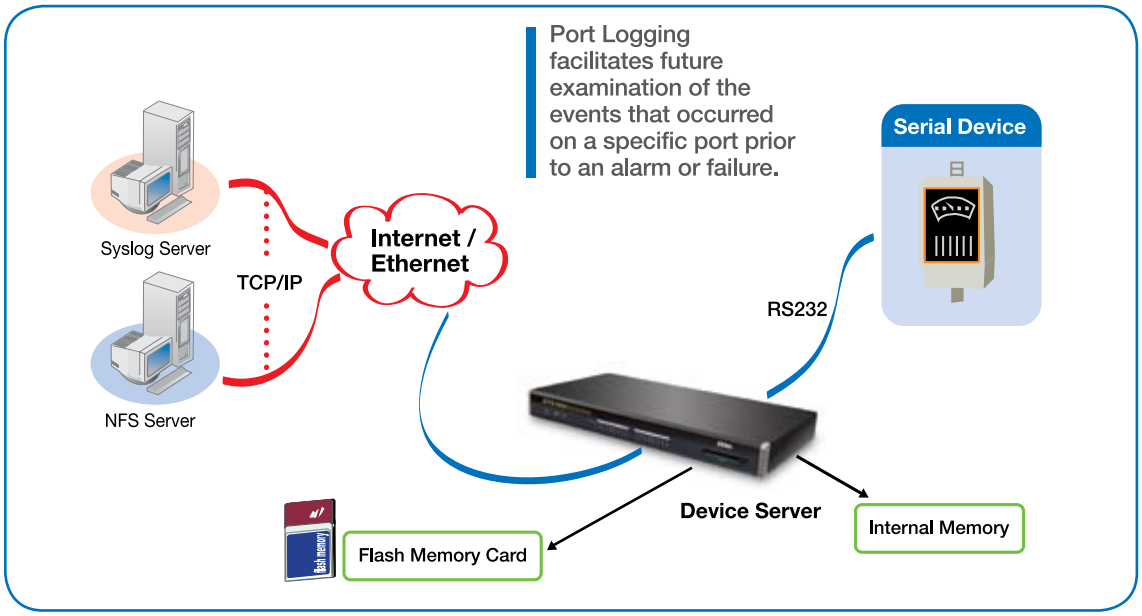
Virtual COM Mode of Sena device and terminal servers uses a driver to create a "Virtual COM Port" so that the software thinks it's talking to a serial port, but it's really talking to a LAN. The serial port may be anywhere on the LAN. After connection, the LAN is transparent to the program and serial device. Applications work just as if the serial device is connected directly to a physical COM port on the PC. In addition, when working with Serial/IP COM port redirector, Sena device servers transmit all serial signals including DTR, DSR and DCD.



※Applicable Models: PS110/410/810, SS100, STS400/800/1600

Port Logging

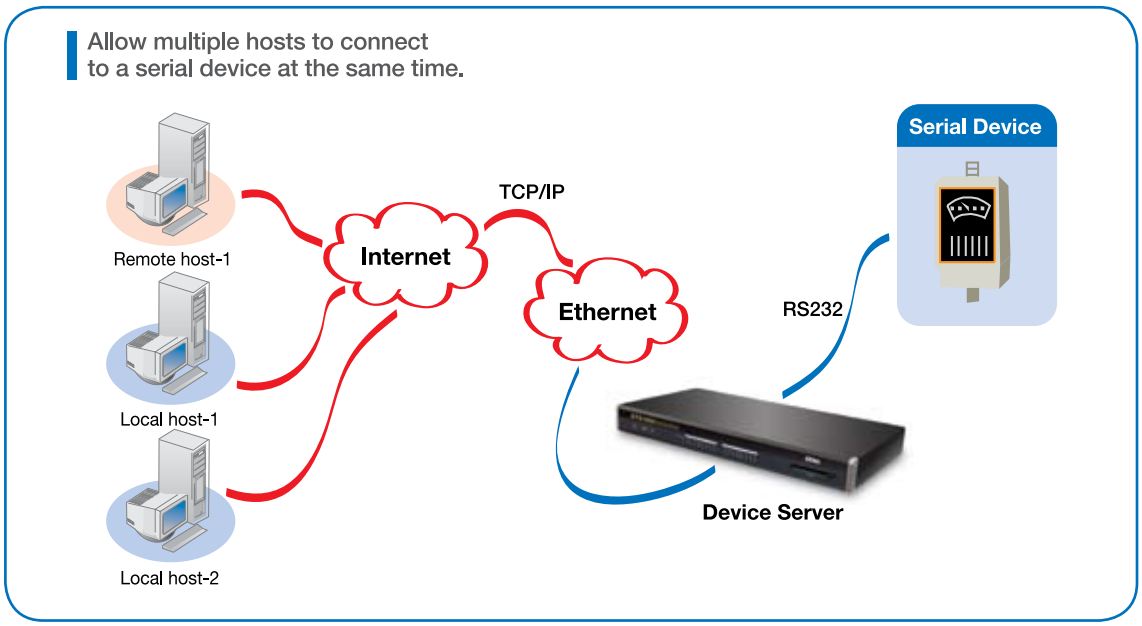
Port Logging feature allows user to keep Serial and TCP data safely in data storage locations such as NFS Server, Syslog server, Internal memory and PCMCIA Flash Memory card. This facilitates future examination of the events that occurred on a specific port prior to an alarm or failure.



※Applicable Models: PS110/410/810, SS100, STS400/800/1600

Multiple Access for Port

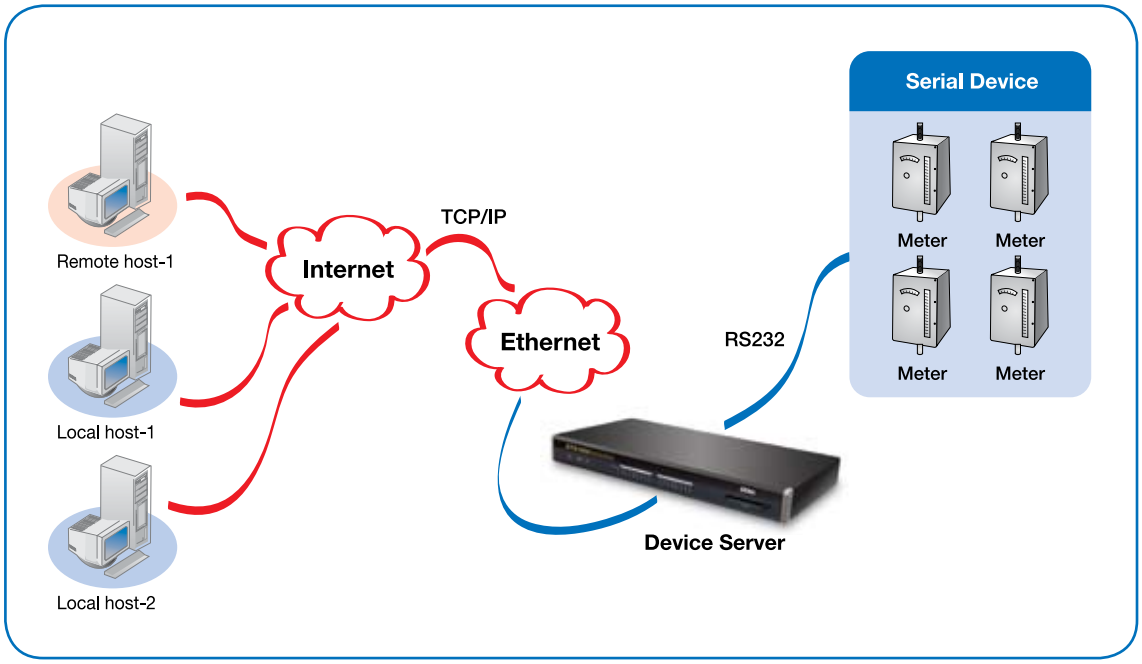
Sena products support multiple sessions for a port that provides the ability for device servers or terminal servers to allow multiple hosts to connect to a serial device simultaneously.
This feature is particularly useful in applications that require failover alternative connections and applications that need multiple accesses to share communications with a particular device.



※Applicable Models: PS110/410/810, SS100, STS400/800/1600

Multicasting

Sena products support an enhancement transmission method "TCP/UDP multicasting", which automatically broadcasts the same serial data to upto 32 remote destinations simultaneously by TCP packet or by UDP datagram. The device server transmits the data to the multiple host computers at the same time in the network data collection system. This feature is very useful in the applications where multiple management stations want to collect data from the same data acquisition system as if they may share it.



※Applicable Models: PS110/410/810, SS100, STS400/800/1600

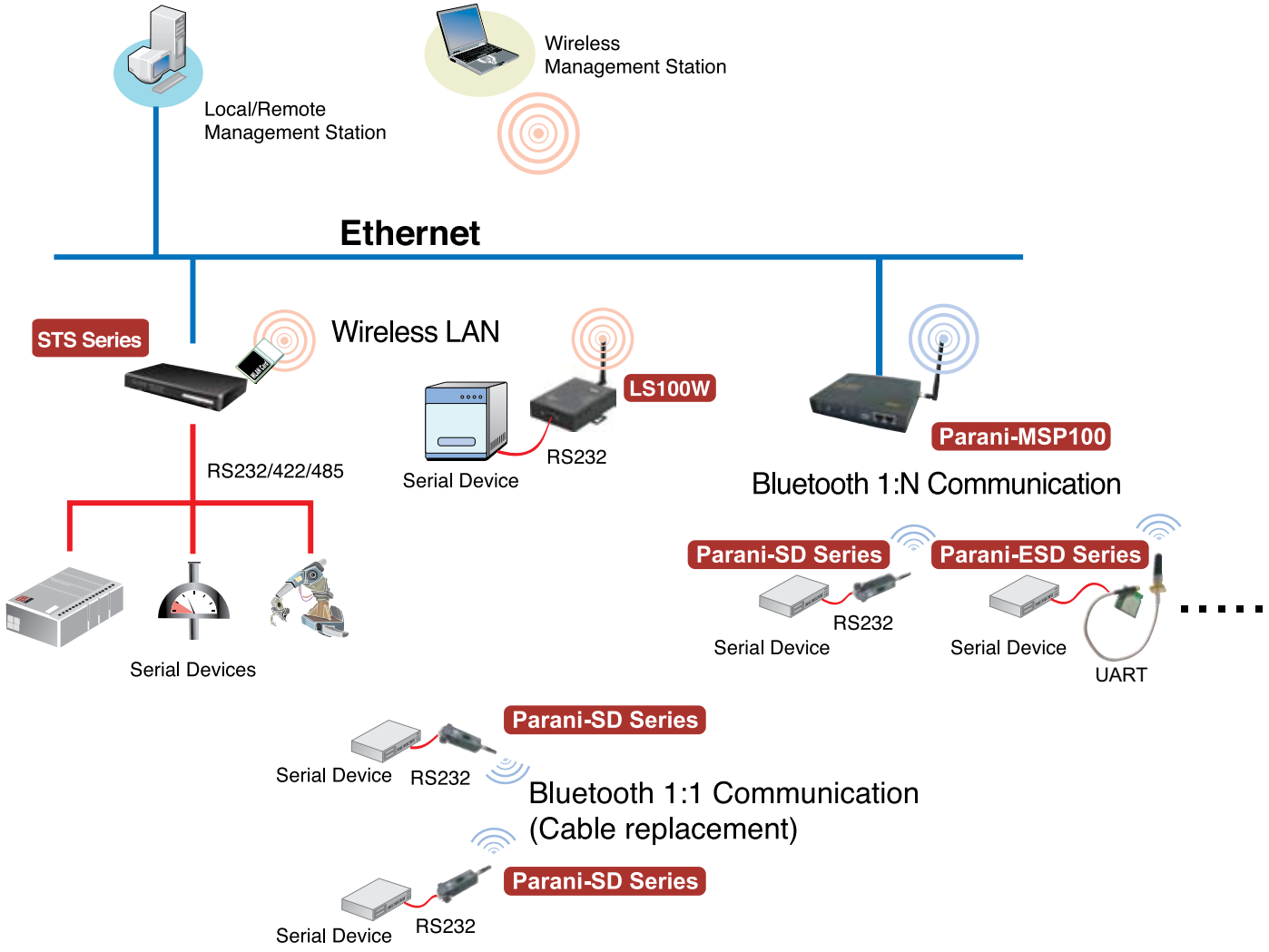
Typical Application Scenarios using
Sena Device Servers

Wireless Device Networking

Sena offers wireless networking options either 1:1 communication solution for simple cable replacement or for 1:N communication solution for more advanced aplications. Users may choose one flexibly from the Wireless LAN or Bluetooth based solutions according to their needs.

Sena Device Server and Terminal Server's family supports 802.11b network interface either by PC Card interface or by built-in WiFi modules. The Parani family is a standalone Bluetooth-compatible solution for wireless RS-232 serial cable replacement.

Sena's wireless device networking solution brings wireless networking capabilities to various equipments such as printers, scales, medical equipment, manufacturing machinery, barcode readers, card readers, RF ID reader and other data collection devices.



Serial Device Server,

HelloDevice Lite Series, LS100/LS100W

- Connects legacy serial devices to 10Base-T Ethernet or 802.11b WiFi network
- Supports RS232 based serial devices via its DB9 serial port
- Serial data transfer rate up to 115Kbps
- Reliable TCP/IP protocol stack
- Low-price model for lowest transition cost
- Configuration via Telnet or serial port
- Management software for configuration and administration included
- Supports both wall and DIN-Rail style mounting

The HelloDevice Lite Series, LS100/LS100W is a cost-effective Serial Device Server that makes your legacy serial devices manageable via industry-standard 10Base-T Ethernet or WiFi network. Based on open network protocols such as TCP/IP, it gives you ultimate flexibility to your serial devices. The unique hardware and software design enables you to connect RS232 serial devices to Ethernet network at a minimal transition cost.

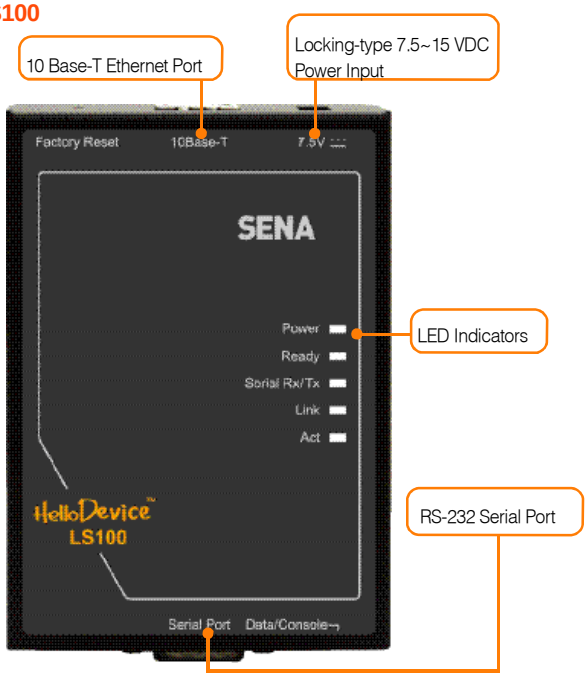
You could easily configure the HelloDevice LS100/LS100W by using Telnet or serial console port under the password protection support.

Typical application areas of the HelloDevice LS100/100W include:

- Industrial Automation
- Network management
- Retail/Point of Sale
- Remote metering
- Remote display
- Building automation
- Security/Access control System
- General data acquisition application
- Medical Automation

Panel Layout

LS100



LS100W

SENA

Serial Device Server,
HelloDevice Lite Series, LS100/LS100W

Specifications

Serial Interface
- Male DB9 serial port
- Serial speeds 1200bps to 115Kbps
- Flow Control: Hardware
- Signals: RS232/Rx,Tx,RTS, CTS,DTR,DSR,GND

Network Interfaces
- LS100
  10Base-T Ethernet
- LS100W
  802.11b WiFi with Prism III compatible chipset
  Supports Ad Hoc mode and Infrastructure mode
  Supports 64/128-bit WEP security

Protocols
- ARP, IP/ICMP
- TCP, Telnet
- DHCP client
- PPPoE

Security
- User ID & Password

Management
- Serial console port
- Telnet
- HelloDevice Manager software,
  O/S support:Windows 98/Me/NT/2000/XP

Diagnostic LED
- LS100
  -Ready
  -Link and Act for Ethernet
  -Serial Rx/Tx
  -Power
- LS100W
  -Power
  -Link and Act for WiFi
  -Serial Rx/Tx
  -Ready

Power
- LS100
  7.5 ~ 15VDC, 300mA 7.5V
- LS100W
  9 ~ 30VDC, 300mA 9V

Environmental
- Operating temperature : 0 ~ 50 C
- Storage temperature : -20 ~ 66 C
- Humidity : 90% Non-condensing

Physical properties
- Dimension (L x W x H) and Weight

LS100:
100 x 72 x 25 (mm), 3.9 x 2.8 x 1.0 (in.)
240g
LS100W:
100 x 72 x 25 (mm), 3.9 x 2.8 x 1.0 (in.)
300g

Certification
- FCC (A), CE, MIC

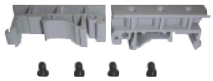
Warranty
- 5-year limited warranty

Ordering Information

LS100	HelloDevice Lite single-port serial device server
LS100W	HelloDevice Lite single-port wireless serial device server

Includes:
- *Quick Start Guide*
- *External 110V or 230V power supply*
- *Serial data cable*
- CD-ROM

Optional Accessories:
- DIN-Rail mount kit



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Serial Device Server,
HelloDevice Pro Series, PS110/410/810

Features

- Connects legacy serial devices to 10/100Base-T Ethernet network
- Supports surge protector for RS232/422/485 interface, up to 230Kbps speed
- Flexible TCP/UDP host mode support: Multiple host connection/data transfer
- Encryption key based algorithm support
- System logging & port buffering
- Dynamic DNS protocol for broadband Internet connection
- Configuration via Web, Telnet/SSH, Windows Utility or console
- Supports both wall and DIN-Rail style mounting
- Supports RFC 2217, Telnet COM Port Control Protocol

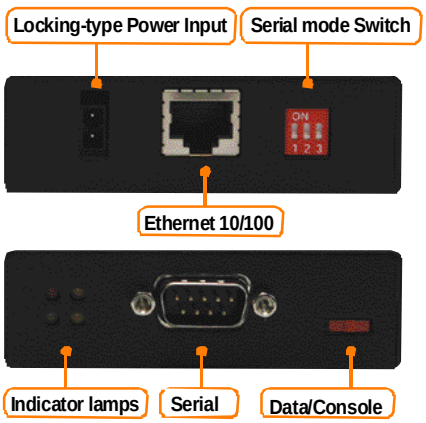
The Linux-based PS110/410/810 is a Universal 1/4/8 port device server that allows your legacy serial devices manageable by 10/100Mbps Ethernet network. Users can feel safe applying the PS110/410/810 in real world applications, since all models are equipped with surge protectors for serial ports.

Included features are full-featured system management functionality of system status display, firmware upgrade, remote reset and system log display by using various accessibility options such as, telnet, serial console port or web. For critical applications of secure data communication, the PS110/410/810 supports SSL for data encryption. It also supports telnet COM port control protocol, i.e. RFC2217 which enables user devices to deliver the pin status information to the serial application. In modem emulation mode, the unit accepts modem AT commands on the serial port and establishes a secure network connection to the end device, providing a cost-effective solution by eliminating dedicated modems and phone lines.

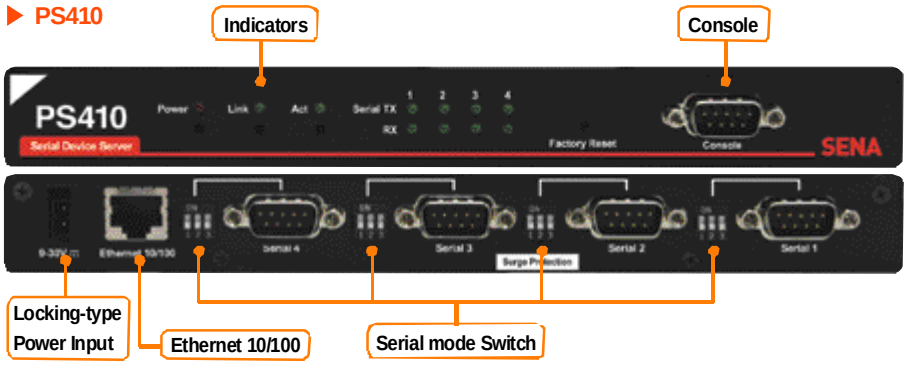
The PS110/410/810 is the ideal solution for the users who are looking for the cost-effective, most secure, scalable linux-based serial device servers for their RS232/422/485 serial devices.

Panel Layout

PS110



PS410



PS810

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www.sena.com

Serial Device Server,
HelloDevice Pro Series, PS110/410/810

Specifications

Serial Interface
- Serial speeds 75bps to 230kbps
- DB9 connector
- Flow Control: H/W and S/W
- Signals: RS232 / Rx, Tx, RTS, CTS, DSR, DTR, DCD, GND
  RS422 / Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS -
  RS485 / 2/4-wire
- Surge protector equipped for each serial port

Network Interfaces
- 10/100 Base-T Ethernet with RJ45 Ethernet connector
- Supports static and dynamic IP address

Protocols
- ARP, IP/ICMP, TCP, UDP,
- Telnet/SSH
- DNS, Dynamic DNS,HTTP, SMTP, DHCP,
- SNMP v1 & v2, SSL v3
- Serial Port Access protocol :
  TCP, UDP, SSL v3, RFC-2217

Ethernet modem
- Full AT command set support

Security
- SSH, SSL, HTTPS
- IP address filtering
- Data Encryption

Management
- Web, Console, Telnet / SSH
- HelloDevice Manager software
  O/S support: Windows 98/ME/NT/2000/XP

Logging & Buffering
- Versatile system logging support for all system events
- Serial port data buffering

Firmware
- Upgrade using console, telnet/SSH and web

Diagnostic LED
- PS110: Power, Link, Serial Rx/Tx for each serial port
- PS410: Power, Link, Act, Serial Rx/Tx for each serial port
- PS810: Power, Ready, Link, Act, Serial Rx/Tx for each serial port

Power
- PS110: 9~30VDC, 300mA@9VDC
- PS410: 9~30VDC, 500mA@9VDC
- PS810: 100~240VAC, 50/60Hz, 0.24A

Environmental
- Operating temperature:
  0℃ to 50℃
- Storage temperature:
  -20℃ to 66℃
- Humidity:
  90% Non-condensing

Physical properties
- PS110: 113 x 82 x 27 (mm)
  4.5 x 3.2 x 1.0 (in.) / 300g
- PS410: 227 x 119 x 28 (mm)
  8.9 x 4.7 x 1.1 (in.) / 750g
- PS810: 438 x 120 x 45 (mm)
  17.2 x 4.7 x 1.8 (in.) / 1.5kg
  19" rack mountable

Certification
- FCC(A), CE, MIC

Warranty
- 5-year limited warranty

Ordering Information

PS110	HelloDevice Pro 110 single-port serial device server
PS410	HelloDevice Pro 410 4-port serial device server
PS810	HelloDevice Pro 810 8-port serial device server

Includes:
- *Quick Start Guide*
- *External 110V(or 230V) power supply or power cord*
- *Serial data cable*
- CD-ROM

Optional Accessories:
- DIN-Rail mount kit for the PS110/410

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Secure Terminal Server with PCMCIA,
STS Series, STS400/800/1600

The Linux-based Terminal Server, STS Series, STS400/800/1600

is a universal Secure Terminal Server that makes your legacy serial devices manageable via industry standard Ethernet network. Based on open network protocols such as TCP/IP and UDP, allows you ultimate flexibility to your serial devices.

For secure data communication, the STS Series supports various data encryption protocols such as SSL, 3DES and RC4. In addition, IP address filtering function is provided for protecting unintentional data streams to be transmitted to the STS Series.

Customization support features enable users to easily customize the box on-the-fly with minimal effort. The network/serial port access and serial protocol translation are provided using the free user space, Linux shell script and the library support.

Featuring PCMCIA slot for enhanced functionality, the STS Series supports PC cards such as Wired/Wireless LAN card to access another network for back up purpose, Phone-line modem card for out-of-band access to the STS Series with an external modem, and ATA Fixed Disk card to keep the system log and port log data safely.

With PPPoE(PPP-over-Ethernet) connection feature of the STS Series, the RS232 serial devices could be managed over DSL-based broadband network. With the rich broadband network connectivity protocols such as DHCP, PPPoE and Dynamic DNS, you could easily manage the legacy serial devices over broadband Internet by using DSL or cable modem connection. The built-in Dynamic DNS protocol of the STS Series enables you to access serial devices using custom domain names.

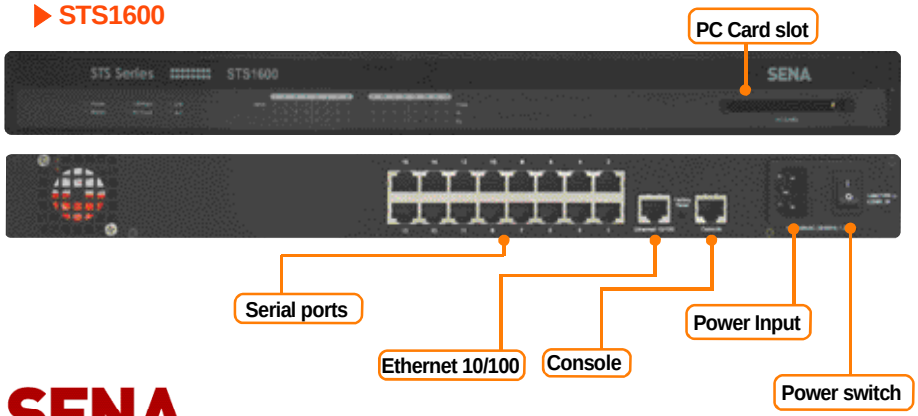
The STS also provides you with easy-to-use system management functionality of system status display, firmware upgrade and remote reset by using various accessibility options such as, telnet/SSH, serial console port or web. The powerful system logging feature enables users to store/send the system/port log data to the NFS, SYSLOG server and the ATA Flash fixed disk PC card.

Features

- Connects legacy serial devices to 10/100Base-T Ethernet network.
- Supports RS232 based serial devices, up to 230Kbps speed.
- Supports PC cards such as ATA memory, modem and wired/wireless LAN card
- Flexible TCP/UDP host mode support: Multiple host connections/data transfer.
- Powerful security support, SSL/TLS and data encryption
- Easy-To-Use customization support
- System logging & port buffering.
- Dynamic DNS and PPPoE protocol for DSL connection to broadband Internet.
- Configuration via Web, Telnet/SSH or serial port.
- Management software for configuration and administration included.
- Surge protector included.
- Supports RFC 2217, Telnet COM Port Control Protocol

Panel Layout

▶ STS1600



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Secure Terminal Server with PCMCIA,

STS Series, STS400/S800/1600

Specifications

Serial Interface

- Serial speeds 75bps to 230Kbps
- RJ45 connector
- Flow Control:
  Hardware, Software
- Signals:
- RS232 Rx, Tx, RTS, CTS,
  DTR, DSR,DCD, GND
- Surge protector equipped for each serial port

Network Interfaces

- 10/100 Base-TX Ethernet with RJ45 Ethernet connector
- Supports static and dynamic IP address

Network Protocols

- ARP, IP/ICMP, DNS, Dynamic DNS
- SMTP with/without Authentication, pop-before SMTP,
- DHCP client, NTP, PPPoE
- TCP, UDP, SSL v2 & v3, TLS v1, RFC-2217
- SSH v1 & v2,Telnet
- HTTP, HTTPS, SNMP v1 & v2
- Serial Port Access protocol :
  TCP, UDP, SSL v2 & v3, TLS v1, RFC-2217

PCMCIA

- ATA flash memory card
- 10/100 Base-TX LAN card
- Wireless LAN card
- PSTN modem card

Ethernet modem

- Full support for AT commands

Security

- SSH
- Data Encryption
- IP address filtering
- HTTPS

Management

- Web
- Serial console port
- Telnet or SSH
- HelloDevice Manager software
- O/S support: Windows 98/ME/NT/2000/XP
- System log delivery:
  email or SYSLOG server or flash memory card
- Firmware
  Stored in Flash memory and downloadable via serial console or telnet or web

Diagnostic LED

- Power
- Ready
- 10/100 Base Link, Act
- Serial InUse/Rx/Tx for each serial port
- PC card

Power

- STS400/800
  5VDC, 1.5A @ 5VDC
- STS1600
  100~240 VAC, 50/60 Hz, 1.2A

Environmental

- Operating temperature:
  0℃ to 50℃
- Storage temperature:
  -20℃ to 66℃
- Humidity:
  90% Non-condensing

Physical properties

- STS400/800
  245 x 153 x 30 (mm)
  9.6 x 6 x 1.2 (in.)
  1.5kg
- STS1600
  435 x 186x 43 (mm)
  17 x 7.6 x 1.75 (in.)
  2.5 kg
- 19" Rack Mountable

Certification

- FCC(A), CE, MIC

Warranty

5-year limited warranty

Ordering Information

STS400	STS 4-Port Terminal Server with PCMCIA
STS800	STS 8-Port Terminal Server with PCMCIA
STS1600	STS 16-Port Terminal Server with PCMCIA

Includes:

- *Quick Start Guide*
- *External 110V (or 230V) power supply or power cord*
- *Cable kit*
- *CD-ROM*

Optional Accessories:

- RJ45-DB9M X adapter bundle (4 units)
- RJ45-DB25F X adapter bundle (4 units)
- RJ45-DB25M X adapter bundle (4 units)
- RJ45-DB25M S adapter bundle (4 units)
- 19" Rack mount kit for STS400/800

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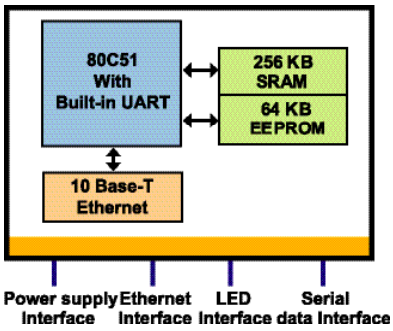
Embedded Device Server with built-in UART, NEMO10

Features

- Single-chip DIL type network enabler for on-board installation
- Compact size, 45mm x 45mm x 18.5mm
- Built-in UART for device interface, data transfer rate up to 115Kbps
- Supports 10Base-T Ethernet interface
- Supports ARP, IP/ICMP, TCP, Telnet, DHCP and
- Management by Telnet or console port or HelloDevice Manager
- +5V input, 0.3W low power consumption

The NEMO10 is a cost-effective and easy-to-use single-chip network enabler module for system integrators and manufacturers who need a way to rapidly make their devices network-ready at a minimal transition cost. The NEMO10 is designed for integration into user devices by on-board installation. On one end, the NEMO10 is connected to the device via built-in UART interface. On the other end, it is connected to the Ethernet RJ45 connector on the board. Within the single-chip DIL package, the NEMO10 has its own TCP/IP-Ready microprocessor, UART for serial interface and built-in 10Base-T Ethernet controller that handle the entire communication between devices over Ethernet.

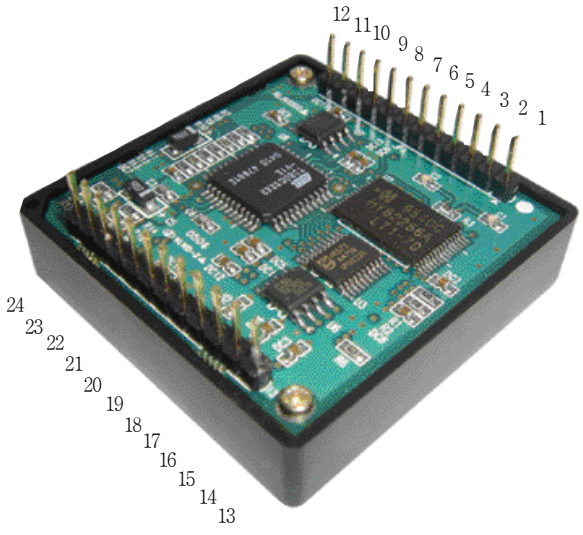
Bundled with Serial/IP, COM Port redirector from Tactical Software, the NEMO10 supports reliable serial-TCP communication with users' devices for existing users' serial applications.The Windows-based configuration software,HelloDevice Manager,simplifies initial installation and management.



Dimensions and Pin Assignment Information

Pin No.	Description
1	GND
2	Reset
3	LED (Ethernet Tx)
4	LED (Ethernet Rx)
5	LED (Ethernet Link/Collision)
6	Ethernet Tx-
7	Ethernet Tx+
8	Ethernet Rx+
9	Ethernet Rx-
10	Vcc
11	LED (Ready)
12	LED (Ethernet Act)

Pin No.	Description
13	Vcc
14	Console/Data switch
15	Serial DSR
16	Serial CTS
17	Serial DTR
18	Serial RTS
19	Serial Rx
20	Serial Tx
21	Factory Reset switch
22	GND
23	LED (Serial Tx)
24	LED (Serial Rx)



(45mm x 45mm x 18.5mm, 24 pin DIL package, 2.54 mm pitch)

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Embedded Device Server with built-in UART, NEMO10

Specifications

Hardware
- 8-bit microprocessor,
- 32KB SRAM, 64KB EEPROM

External Interface pins
- 24-pin Dual In Line Interface for UART, Ethernet, LED and Power

Serial Interface
- Built-in UART
- Serial speeds 1200bps to 115Kbps
- Flow Control: Hardware RTS/CTS
- Signals: Rx, Tx, RTS, CTS, DTR,
- DSR, GND
- Parameters:
  Parity: None, Even, Odd,
  Data Bits: 7, 8,
  Stop Bits: 1, 2

Network Interfaces
- 10 Base-T Ethernet
- Supports static and
- dynamic IP address

Protocols
- ARP, IP/ICMP, TCP server and client, Telnet, DHCP client

Security
- Password-protection

Management
- Telnet or HelloDevice™ Manager or Serial Console

Power
- 5V DC ±10%, 60mA@5VDC

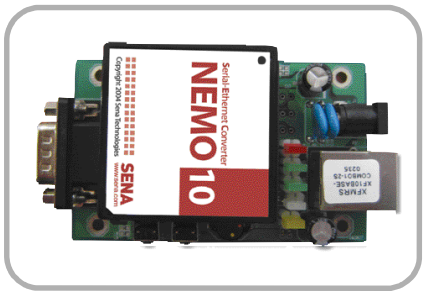
Environmental
- Operating temperature:
  0 ~ 50 C
- Storage temperature:
  -20 ~ 66 C
- Humidity:
  90% Non-condensing

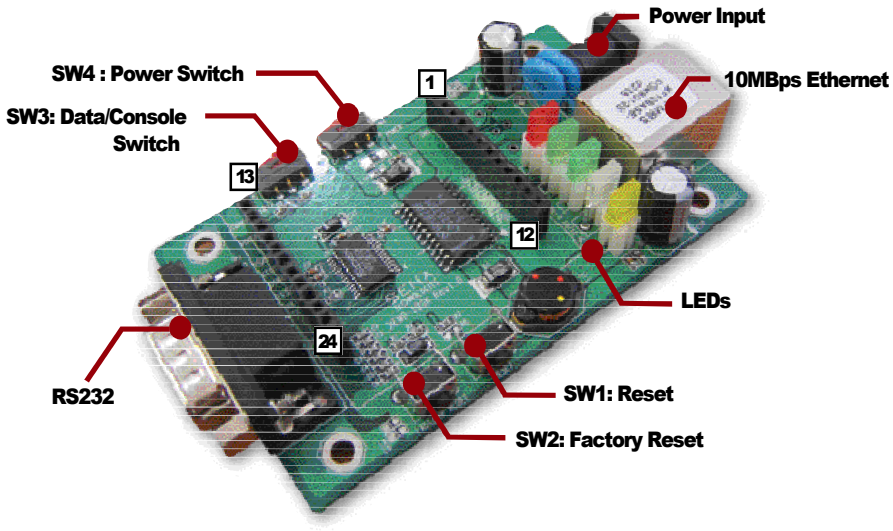
Physical properties
- Dimension (L x W x H)
  45 x 45 x 18.5 (mm)
  1.8 x 1.8 x 0.7 (in.)
- Weight: 20g

Warranty
- 1-year limited warranty

NEMO10 Starter Kit

The NEMO10 Starter Kit includes the evaluation board with the sample circuitry for the NEMO10 interface,power,Ethernet, LED, switches for user device development.





Ordering Information

NEMO10	Nemo 10Base-T serial device server module
NEMO10-SK	Starter kit for the NEMO10

Includes:
- NEMO10 module
- Demo board
- External 110V or 230V power supply
- Serial console/data cable
- CD-ROM

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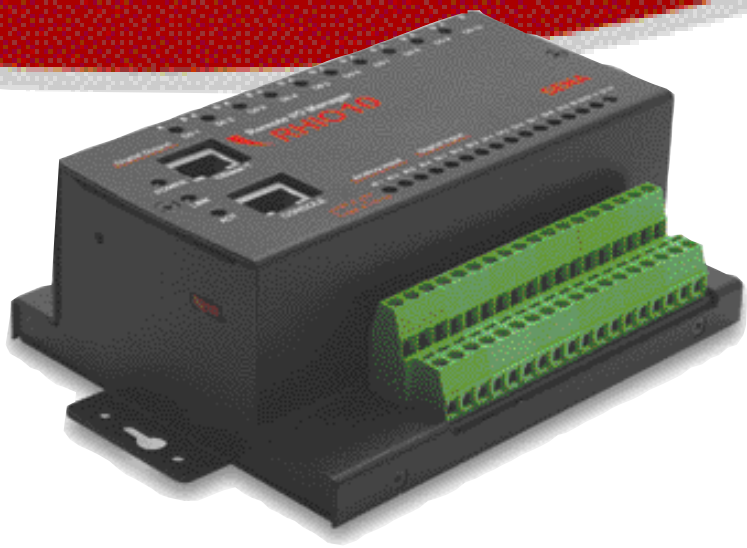
Remote I/O Manager, RHIO10



Features

- Supports 10Base-T Ethernet network connection
- 12 optically isolated digital inputs (0 ~ 24V)
- 10 digital relay outputs, Max. 220V level
- 4 channel 10-bit resolution analog inputs for basic data acquisition
- Basic programmable logic output functions such as AND, OR, NOT and Delay
- Supports both wall and DIN-Rail style mounting
- Management using easy-to-use Windows utility
- Windows DLL support for the easier integration with user program

Windows Utility, Rhio manager

The Rhio10, Remote I/O Manager is simple and easy-to-use Ethernet Data Acquisition System that communicates with PCs and other computers over Ethernet and Internet networks. They utilize the open systems environment of Ethernet to acquire data from any number of remote locations.

The Rhio10 provides 12 optically isolated digital inputs (0 ~ 24V), 10 digital relay outputs of max. 220V level, 4 channel 10-bit resolution analog inputs for basic data acquisition. The digital output operation can be set up with basic programmable logic such as AND, OR, NOT and delay function. The analog inputs are configured either as alarm detection using threshold mechanism or general data acquisition. The input system operates in event-driven mode that allows the unit to send data based on change-of-state or alarm conditions. All the inputs and outputs are protected from damage under power on/off conditions.

Users may configure the Rhio10 by using easy-to-use Windows-based utility software or by using telnet or serial console. The Rhio Manager, Windows utility also enables users to perform the basic I/O control and monitoring for test purpose. Users may easily write their own application program to communicate with Rhio10 with the help of free MFC libraries for Windows.

Typical application areas include:

- Remote Data Acquisition Systems
- Remote Data Acquisition
- Remote Distributed I/O Systems
- Automated Machine Monitoring
- Industrial Instrumentation
- Discrete Control
- Distributed Data Acquisition System

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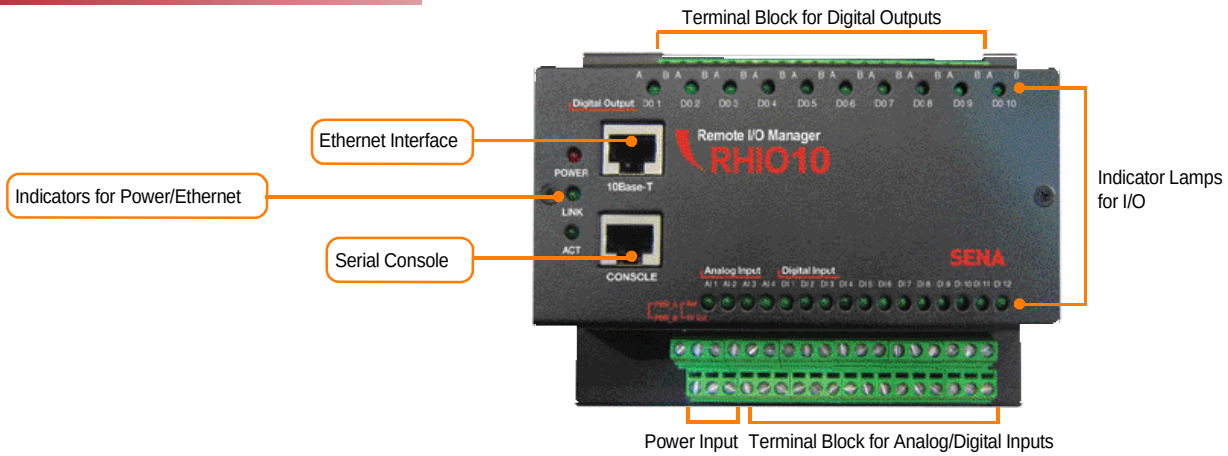
Remote I/O Manager, RHIO10

Panel Layout



Specifications

Network Interface
- 10 Base-T Ethernet with RJ45 connector
- Supports static and dynamic IP address

Digital Input
- Number of channels: 12
- Input type: Voltage
- Input circuitry: Optically isolated photo-coupler
- Input range: 0V ~ ±24V
  OFF: 0V ~ ±1.2V
  ON: ± 3.3V ~ ± 24V
- Sampling rate: 20ms
- Isolation voltage: 5KV

Digital Output
- Number of channels: 10
- Output type: Relay
- Rated load: 3A/240VAC
- Insulation resistance: 1000Min(DC500V)
- Electrical life expectancy: 100,000 operations
- Isolation voltage (coil and contact): 4KV
- Reaction within 10ms

Analog Input
- Number of channels: 4
- Effective resolution: 10-bit
- Input type: Voltage, Direct coupling
- Input range: 0V ~ Aref (Analog reference voltage, 2~5V)
- Sampling rate: 1000 samples/sec

Protocols
- ARP, IP/ICMP, TCP
- telnet, DHCP client

Management
- Rhio Manager Windows Utility, Serial Console or Telnet

Software Support
- Windows MFC DLL library
- I/O configuration, I/O status monitoring/control

Diagnostic LED
- Power, Link, Act
- Digital Output, 1~10
- Digital Input, 1~12
- Analog Input, 1~4

Power
- 9V ~ 48VDC, Max. 5W

Environmental
- Operating temperature: 0℃ to 50℃
- Storage temperature: -20℃ to 66℃
- Humidity: 90% Non-condensing

Physical properties
- Dimension (L x W x H) 137 x 111 x 58 (mm) 5.4 x 4.4 x 2.3 (in.)
- Weight: 730g

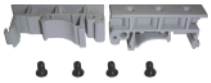
Certification
- FCC, CE, MIC

Warranty
- 5-year limited warranty

Ordering Information

Rhio10 Rhio10 Remote Ethernet I/O Manager

Includes:
- *Console Cable*
- *RJ-45 - DB9 Female Straight Cable Adapter*
- *DIN-rail Mount Bracket*
- *CD - ROM*



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