

Industrial Communication

4



1 Multiport Serial Cards

P 4-1

2 Serial Device Server

P 4-2

- 2.1 Intelligent Serial-to-Ethernet Device Servers - - - - - P 4-5
- 2.2 Palm-size Programmable Serial-to-Ethernet Device Server - - - - - P 4-7
- 2.3 Palm-size Serial-to-Ethernet Device Server - - - - - P 4-9
- 2.4 IP67 Programmable Serial-to-Ethernet Device Server - - - - - P 4-10
- 2.5 Programmable Serial-to-Fiber Device Server - - - - - P 4-11
- 2.6 Tiny Serial-to-Ethernet Device Server & Modbus Gateway - - - - - P 4-12
- 2.7 Programmable Serial Device Server with LAN Switch - - - - - P 4-15
- 2.8 Programmable Modbus to Ethernet Gateway - - - - - P 4-16
- 2.9 Modbus Data Concentrator, MDC-700 series - - - - - P 4-17

3 Converter/Repeater/Hub/Splitter

P 4-19

4 Ethernet Switch

P 4-21

5 Fieldbus Solution

P 4-26

- 5.1 EtherNet/IP Gateways - - - - - P 4-28
- 5.2 BACnet Gateways - - - - - P 4-29
- 5.3 CAN Bus Repeater/Bridge/Switch - - - - - P 4-30
- 5.4 USB to CAN Converters - - - - - P 4-31
- 5.5 CAN to Fiber Converter/Bridge - - - - - P 4-31
- 5.6 Ethernet/Wi-Fi to CAN Converters - - - - - P 4-32
- 5.7 Uart to CAN Converters - - - - - P 4-34
- 5.8 CANopen Gateways - - - - - P 4-35
- 5.9 DeviceNet Gateways - - - - - P 4-37
- 5.10 J1939 Gateways - - - - - P 4-39
- 5.11 PC-based CAN Bus Boards - - - - - P 4-40
- 5.12 Palm-size Programmable CAN Controllers - - - - - P 4-43
- 5.13 PAC-based CAN Modules - - - - - P 4-44
- 5.14 PROFIBUS Converters & Repeaters - - - - - P 4-45
- 5.15 PROFINET Products - - - - - P 4-47
- 5.16 HART Products - - - - - P 4-49
- 5.17 M-Bus - - - - - P 4-53

1. Multiport Serial Cards

• Overview

The VXC/VEX multiport card is the foremost choice for PC-based communication solutions, ensuring smooth communication in both time-critical applications and industrial fields. Installing a VXC/VEX multiport card increases the number of serial ports available on the PC, meaning that it is much easier to integrate a PC with a large number of external devices, such as PLCs, meters, controllers, laboratory instruments, modems, card readers, serial printers, RFID readers, bar code readers, and sensors, etc.



• Selection Guide



Model Name	COM-Selector	RS-232	RS-422/485	Self-Tuner	Isolation (VDC)	ESD Protection	Max. Speed (bps)	FIFO Size (bytes)	Connector
VEX-112	Yes	2	–	–	–	–	115.2 k	128	Male DB-9
VEX-112i	Yes	2	–	–	2.5 k	+/-4 kV	115.2 k	128	Male DB-9
VEX-142	Yes	–	2	Yes	–	–	115.2 k	128	Male DB-9
VEX-142i	Yes	–	2	Yes	2.5 k	+/-4 kV	115.2 k	128	Male DB-9
VEX-114	Yes	4	–	–	–	–	115.2 k	128	Female DB-37
VEX-114i	Yes	4	–	–	2.5 k	+/-4 kV	115.2 k	128	Female DB-37
VEX-144	Yes	–	4	Yes	–	–	115.2 k	128	Female DB-37
VEX-144i	Yes	–	4	Yes	2.5 k	+/-4 kV	115.2 k	128	Female DB-37
PCIe-S118	–	8	–	–	–	–	921.6 K	256	Female DB-62
PCIe-S148	–	–	8	Yes	–	–	921.6 K	256	Female DB-62



Model Name	COM-Selector	RS-232	RS-422/485	Self-Tuner	Isolation (VDC)	ESD Protection	Max. Speed (bps)	FIFO Size (bytes)	Connector
VXC-112AU	Yes	2	–	–	–	–	115.2 k	128	Male DB-9
VXC-112IAU	Yes	2	–	–	2.5 k	+/-4 kV	115.2 k	128	Male DB-9
VXC-142AU	Yes	–	2	Yes	–	–	115.2 k	128	Male DB-9
VXC-142IAU	Yes	–	2	Yes	2.5 k	+/-4 kV	115.2 k	128	Male DB-9
VXC-182IAU	Yes	1	1	Yes	2.5 k	+/-4 kV	115.2 k	128	Male DB-9
VXC-114U	Yes	4	–	–	–	–	115.2 k	128	Female DB-37
VXC-114IAU	Yes	4	–	–	2.5 k	+/-4 kV	115.2 k	128	Female DB-37
VXC-144U	Yes	–	4	Yes	–	–	115.2 k	128	Female DB-37
VXC-144IU	Yes	–	4	Yes	2.5 k	+/-4 kV	115.2 k	128	Female DB-37
VXC-118U	–	8	–	–	–	–	115.2 k	256	Female DB-62
VXC-148U	–	–	8	Yes	–	–	115.2 k	256	Female DB-62

Optional Accessories

CA-0910F		9-Pin Female-Female D-Sub Cable 1 m	CA-9-3715D		Male DB-37 to 4-port Male DB-9 Cable, 1.5 M (180°)
CA-0915		9-Pin Male-Female D-Sub Cable, 1.5 m	CA-9-3705		Male DB-37 to 4-port Male DB-9 Cable, 0.3 M (90°)
CA-PC09F		9-Pin Female D-Sub Connector with Plastic Cover	CA-9-6210		Male DB-62 to 8-port Male DB-9 Cable, 1.0 M
CA-4002		37-Pin Male D-Sub Connector with Plastic Cover	DN-09-2F		I/O Connector Block with DIN-Rail Mounting and Two 9-Pin Male Header. Includes CA-0910F x 2 (9-Pin Female-Female D-Sub Cable 1 m)

2. Serial Device Server

• Overview

The ICP DAS Programmable Device Server is designed to bring network connectivity to your serial devices. The programmable features allow developers to quickly build custom applications that turn "dull" serial devices into "intelligent" devices right away without modifying their hardware or software configuration.

With extensive experience accumulated over many years, a great number of serial devices such as PLCs, bar code readers, RFID readers, meters and motion controllers, etc., have been widely used in various applications. As the advances in communication technologies in recent years, continue to drive optimization of data accessibility and remote operation ability, a wide variety of industries have begun to feel the urge to upgrade their latency serial communications to Ethernet network connections. The ICP DAS PDS series of products are your best choice for implementing this scenario in a robust, reliable and cost-



The VxComm Driver creates virtual COM port(s) on 32-bit and 64-bit Windows XP/2003/Vista/7 systems and maps them to the remote serial port(s) of the PDS/DS series. The user's serial client programs need to only be changed to the virtual COM port access the serial devices that are allocated on the Internet or Ethernet network via the PDS/DS series.

Easy Serial Device Networking with "transparency"

The most intuitive and easiest way to remotely control serial devices is to access those devices transparently via a network with no software modification required. The ICP DAS PDS product line offers two transparent applications:

▪ Socket Connections:

Using a TCP/IP socket connection, client programs can exchange information with specific PDS/DS serial ports and talk to serial devices directly. For example, simply create a socket connection to the TCP/IP port 10001 (default) of the PDS/DS device and you can then access Port1 of the PDS/DS remotely. This is an OS-independent method and works well on most OS (operating systems) that provide socket functions.

▪ Virtual COM Ports:

ICP DAS developed a specific function called "Virtual COM" that simulates PDS serial ports as fixed PC COM ports. Virtual COM ports appear to the system and applications as real ports. Once established, users can immediately enjoy the convenience that networking provides.



DynaCOM Technology

ICP DAS Virtual COM also supports an exclusive function - Dynamic Virtual COM Mapping (DynaCOM); if the system can only access limited or fixed numbers of COM Ports, specific PDS serial ports can be dynamically assigned to the corresponding COM port numbers.

Programmable Enhanced "Device Servers"

The programmable features of the PDS series of products makes it possible to effectively implement exclusive protocols and exclusive communication mechanisms for complex PDS-based applications. This provides the following advantages:

■ Effective network transmission:

Place your customized software on the PDS to directly perform processes locally. The effective data and information can be periodically sent back to the PC based on a schedule that can be planned in advance and the devices will work independently on-site, even when not connected to a network. Therefore, the design of system can be much more flexible. This also reduces the need to rely on the network, which is an inevitable factor for conventional DS (Device Server) as it has to keep on "talking" to the PC via the network to ensure the status maintains transparency.

■ Previous development efforts can be duplicated:

Along with serial devices, you can place your customized or value-added software on the PDS to implement an intelligent Ethernet controller. This controller can then be used in applications for future projects, dramatically reducing programming requirements. In addition, your value-added software is embedded in the PDS, so if a computer system undergoes hardware replacement or upgrade, incompatibility issues don't need to be considered, which therefore reduces system maintenance work.

Virtual I/O Highly Integrates On-Site Messages

I/O acquisition is very important when performing on-site integration. The RS-485 port of PDS is able to be connected to I/O devices, like I-7000/M-7000 series, to offer abundant I/O functions for various purposes. For easier on-site integration, some PDS models also provide Digital I/O, which is also supported by the ICP DAS DCON utility, EZ Data Logger or other DCON client programs.

ESD Protection and Frame Ground

The PDS series offers TVS diode ESD protection technology with a frame ground design that protects your system from being damaged by high potential voltages.

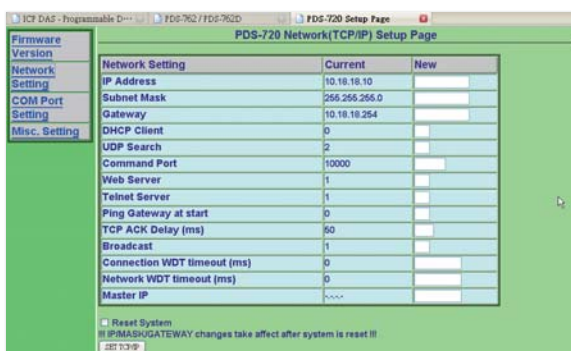
Under normal operating conditions, the TVS diode presents high impedance (appears as an open circuit) to the protected component. If the voltage exceeds the limitation, the TVS diode avalanches, providing a low impedance path for the transient current. As a result, the transient current is diverted away from the protected components and shunted through the TVS diode. The device returns to a high impedance state after the transient threat has passed.

Self-Tuner Inside

The PDS series is equipped with a "Self-Tuner" chip that automatically controls the sending/receiving direction of the RS-485 ports. Without the presence of Self-Tuner, users need to enable the RS-485 transmitter before transmitting, and disable the transmitter after the transmission is complete. The time required to enable and disable the transmitter (direction control) is the major source of many communication issues, and it is very difficult to debug. The built-in Self-Tuner in the PDS effectively removes this direction control issue and also simplifies the software/firmware programming required for communication applications.

Easy Web Configuration

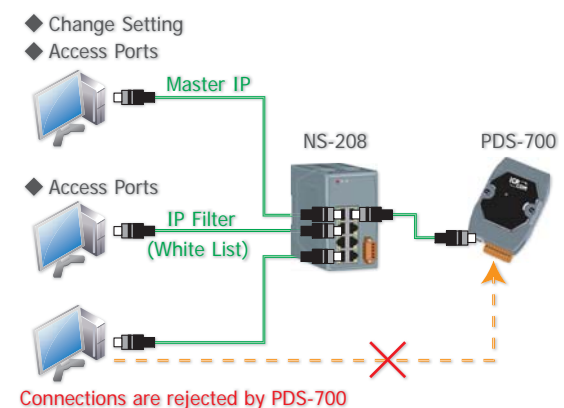
The PDS also contains a built-in web server that enables users to conveniently configure the PDS. A web browser, like IE or Firefox, can be used to connect to the PDS to modify the configuration, such as: IP address, subnet mask, gateway, DHCP client, UDP search, Web Server, Telnet Server, TCP ACK delay, Watchdog timeout, Master IP, Filter IP, COM port baud rate, data format and transfer mode, etc.



Master IP and Filter IP (White List)







The PDS can use a master IP setting that allows a client to configure the PDS and COM ports. This prevents the configuration of the PDS and COM ports from being changed by other clients.

The IP filter setting limits which client PCs are able to access the PDS module via specific IP addresses. Connections from other clients will be rejected by the PDS.





• Selection Guide




Comparison Table of Device Server and Modbus Gateway

Features	iDS	PPDS	PDS	DS	tDS	tGW
Picture						
PoE	Yes	Yes	–	–	Yes	Yes
Programmable	Yes	Yes	Yes	–	–	–
Virtual COM	Yes	Yes	Yes	Yes	Yes	–
Modbus Gateway	–	Yes	–	–	–	Yes
Multi-client	Yes	Yes	Yes	Yes	–	Yes
SNMP	Yes	–	–	–	–	–
Application Mode	Virtual COM TCP Server TCP Client UDP Pair Connection RFC2217 Telnet Modem Emulator	Virtual COM TCP Server TCP Client Pair Connection Modbus TCP Slave	Virtual COM TCP Server TCP Client Pair Connection	Virtual COM TCP Server TCP Client Pair Connection	Virtual COM TCP Server TCP Client Pair Connection	Modbus TCP Master Modbus TCP Slave Modbus UDP Master Modbus UDP Slave Pair Connection
Remarks	Intelligent	Professional	Powerful	Isolation for DS-715	Cost-effective, Entry-level	Cost-effective, Entry-level





iDS Series – Intelligent Device Server

Series	Ethernet	Virtual COM	Virtual I/O	Programmable	Modbus	Casing
 iDS-700	10/100 M, PoE	Yes	–	Yes	Yes	Plastic
 iDS-700M						Metal




PPDS Series – Programmable Device Server and Modbus Gateway with PoE

Series	Ethernet	Virtual COM	Virtual I/O	Programmable	Modbus	Casing
 PPDS-700-MTCP	10/100 M, PoE	Yes	Yes	Yes	Yes	Plastic
 PPDSM-700-MTCP						Metal
 PPDS-700-IP67			–		–	IP67 Waterproof Plastic

PDS Series – Programmable Device Server

Series	Ethernet	Virtual COM	Virtual I/O	Programmable	Modbus	Casing
 PDS-700	10/100 M	Yes	Yes	Yes	–	Plastic
 PDSM-700						Metal
 PDS-220Fx	100 Base-FX, Fiber		–			–
 PDS-5000-MTCP	10/100 M Ethernet Switch	–	–	Yes	Plastic	

DS, tDS & tGW Series – Non-Programmable Device Server and Modbus Gateway

Series	Ethernet	Virtual COM	Virtual I/O	Multi-client	Modbus	Casing	Remarks
 DS-700	10/100 M	Yes	–	Yes	–	Plastic	Isolation for DS-715
 tDS-700	10/100 M, PoE			–			–
 tGW-700		–	Yes	Yes			Cost-effective

2.1 Intelligent Serial-to-Ethernet Device Servers

iDS-700 Series *Available soon*

Intelligent Serial-to-Ethernet Device Servers



iDS-718-D

iDS-745M-T



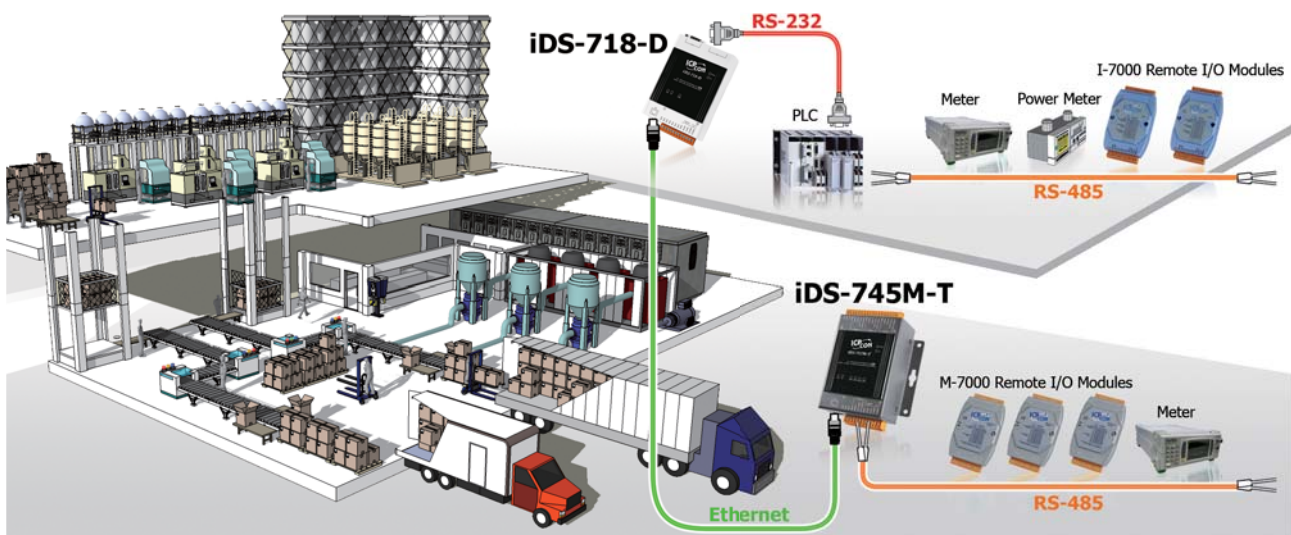
Features ▶▶▶▶▶

- Incorporate Serial Devices in an Ethernet network
- Virtual COM for 32-bit and 64-bit Windows XP/2003/Vista/7
- High-performance 720 MHz ARM-based Processor
- 256 MB DDR3 memory for data transmission and buffering
- Zero Data Loss
- UDP Support
- RFC2217 support
- Modem Emulator
- Open, Flexible and Scalable Platform
- SNMP Management Protocol

Introduction

The iDS-700 Series is a new generation Device Server from ICP DAS and is equipped with a powerful CPU module running on the open operating system, various connectivity (Ethernet, micro SD and serial port) and communication interfaces. Compared with the previous generation PDS, not only the CPU performance is higher but also more features are improved such as 256 MB flash, 256 MB DDR3 memory, unique 64-bit hardware serial number, and real-time clock, etc. These make the iDS-700 becoming one of the most powerful system.

This device server is designed to add Ethernet and Internet connectivity to any RS-232 and RS-422/485 device, and to eliminate the cable length limitation of legacy serial communication, coupled with a large built-in RAM buffer, allows for fast transmission and prevents congestion of serial data on the network. Built-in powerful 720 MHz ARM-based processor offers excellent performance at low power consumption. The preloaded high-performance operating system is open, flexible, scalable and allows user to easily add or remove application/service from configuration mechanism.



Power over Ethernet

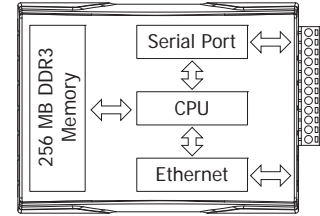
iDS-700 offers true IEEE 802.3af-compliant (classification, Class 1) Power over Ethernet (PoE) functionality using a standard category 5 Ethernet cable to receive power from a PoE switch such as NS-205PSE. If there is no PoE switch on site, it will also accept power input from a DC adapter. The iDS-700 is designed for ultra-low power consumption, reducing hidden costs from increasing fuel and electricity prices, especially when you have a huge amount of device servers installed. Reducing the amount of electricity consumed by choosing energy-efficient equipment can have a positive impact on maintaining a green environment.

Virtual COM

The VxComm Driver/Utility supports the most popular operating system in the world, including 32-bit and 64-bit Windows7/ Vista/2008/2003/XP/Linux. The virtual COM works transparently and is protocol independent, enabling perfect integration with your current central computer. The utility provides an easy configuration interface that can be used to quickly create and map virtual COM ports to one or several iDS-700 modules. In addition, the utility contains a built-in terminal program, so users can send/receive command/data via the terminal program for easy testing.

Zero Data Loss & Reliable Communication

iDS-700 is built-in with 256MB high-performance DDR3 Memory. Each Ethernet connection will have a size configurable memory for buffering data that is transmitted over the iDS-700 before its peer is ready to process the data. The memory can improve the efficiency and reliability of Ethernet communication, it holds transmitted/received data when the network traffic is congested or device is busy in order to prevent data loss.



SNMP Management Protocol Support

SNMP (Simple Network Management Protocol) is a set of communications protocols for network management. It is an open network communication protocol and for years it has become the de facto standard in industry. The protocol is used mostly between network management systems and network devices. Currently, there is a various variety of network management software tools which allow network administrators to display and historically record SNMP variables. ICP DAS SNMP Technique seamlessly integrates monitoring and analyzing of network management systems and industrial control system. The iDS-700 expose serial port status on the SNMP managed systems as variables, which describe the iDS-700 system status. These variables can then be queried or set by managing software tools.

64-bit Hardware Serial Number

The 64-bit hardware serial number is unique and individual. Every serial number of the iDS-700 is different. Users can add a checking mechanism to their project to prevent software from pirating.

Software

Protocols	ICMP, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, SSH, FTP, SFTP, DNS, SNMP v1/V2c/V3, HTTP, SMTP, ARP
Configuration Method	Web, Serial Console, Telnet/SSH Console, eSearch Utility for Windows
Virtual COM for Windows	Windows 2000, Windows XP/2003/Vista/2008/7/8 x86/x64, 2012 x64, XP Embedded
Virtual COM for Linux	Linux kernel 2.4.x, 2.6.x, 3.x
Management	SNMP v1, v2c, v3 and MIB-II
Operation Modes	Virtual COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Terminal, Reverse Telnet, TCP Modem, Modbus Gateway
Authentication Method	Local, RAIDUS, TACACS+

Ordering Information

iDS-718-D CR	Intelligent Device Server with 1 RS-232/422/485 (RoHS, DB9)
iDS-718M-D CR	Intelligent Device Server with 1 RS-232/422/485 (Metal Case,RoHS, DB9)
iDS-718i-D CR	Intelligent Device Server with 1 RS-232/422/485 (Isolated, RoHS, DB9)
iDS-718iM-D CR	Intelligent Device Server with 1 RS-232/422/485 (Isolated, Metal Case,RoHS, DB9)
iDS-728-T CR	Intelligent Device Server with 2 RS-232/422/485 (RoHS,Terminal block)
iDS-728M-T CR	Intelligent Device Server with 2 RS-232/422/485 (Metal Case,RoHS,Terminal block)
iDS-742-T CR	Intelligent Device Server with 4 RS-232 (RoHS,Terminal block)
iDS-742M-T CR	Intelligent Device Server with 4 RS-232 (Metal Case,RoHS, Terminal block)
iDS-745-T CR	Intelligent Device Server with 4 RS-422/485 (RoHS,Terminal block)
iDS-745M-T CR	Intelligent Device Server with 4 RS-422/485 (Metal Case,RoHS,Terminal block)

2.2 Palm-size Programmable Serial-to-Ethernet Device Server

PDS-720(D)

PPDS-720(D)-MTCP

Programmable Device Server with 1 RS-232, 1 RS-422/485 and 1 Fiber ports



PPDS-720D-MTCP PDS-720



PDS-782-25/D6

PDS-782D-25/D6

Programmable Device Server with 7 RS-232 ports and 1 RS-485 port



PDS(M)-700(D) Series

PPDS(M)-700(D)-MTCP Series

Programmable Device Server with 1 RS-232 port and 1 RS-485 port



PPDS-700D-MTCP series PDSM-700D series



Features ▶▶▶▶▶

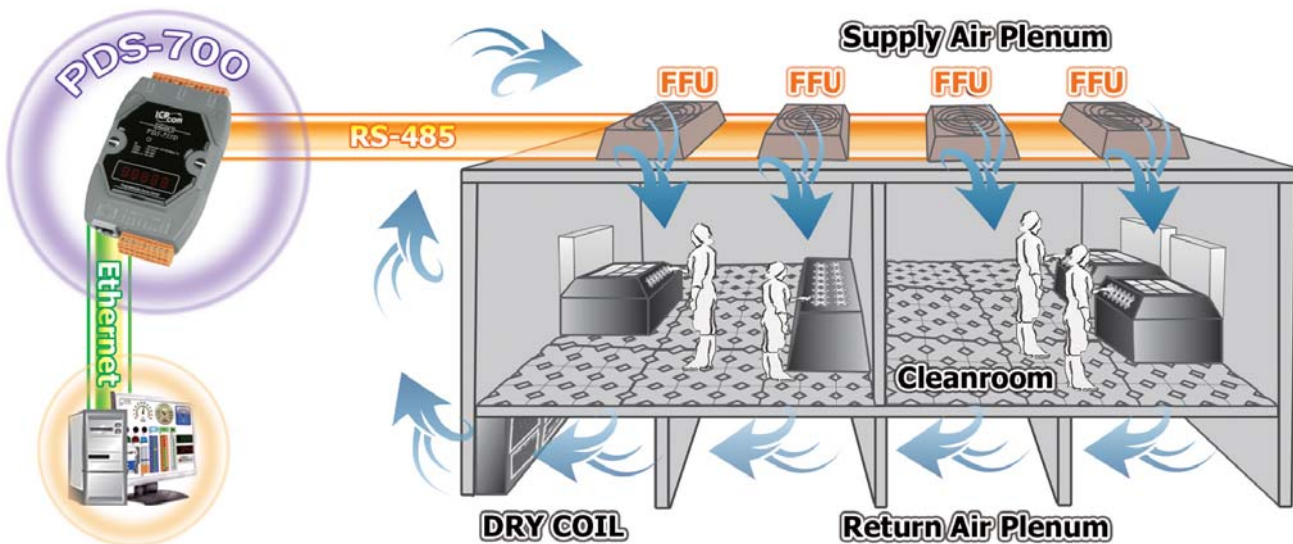
- Incorporates serial devices in an Ethernet network
- Operation Modes: Virtual COM, TCP Server, TCP Client
- Virtual COM for 32/64-bit Windows XP/2003/2012/Vista/7/8
- Supports Modbus TCP to RTU/ASCII Gateway (for MTCP versions)
- Powerful programmable device server with lib and sample programs
- Built-in high performance MiniOS7 from ICP DAS
- Built-in watchdog timer suitable for use in harsh environments
- Built-in Self-Tuner on RS-485 Ports (automatic direction control)
- Supports +/- 4 kV ESD protection on serial ports
- Power reverse polarity protection and low power consumption
- 10/100 Base-TX Ethernet, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Supports PoE (Power over Ethernet, for PPDS versions)
- Built-in 7-Segment 5-digit LED display (for D versions)
- Supports D/I, latched D/I and counter functions (for models with DIO)
- Supports Virtual I/O technology (for models with DIO)
- Supports IP filter (White List) for security control
- Supports multi-client and data sharing function
- Palm-size form factor with multiple serial ports and DIN-Rail mounting
- RoHS Compliant & no Halogen
- OEM/ODM service is available

Selection Guide

Model Name	RS-232	RS-485	RS-422/ RS-485	DI/DO	Ethernet	COM1	COM2	COM3	COM4	COM5	COM6	COM7	COM8
PDS-720(D) PPDS-720(D)-MTCP	1	1	-	-	10/100 M	5 Wire RS-232	2 Wire RS-485	-	-	-	-	-	-
PDS(M)-721(D) PPDS(M)-721(D)-MTCP	1	1	-	6/7	10/100 M	5 Wire RS-232	2 Wire RS-485	-	-	-	-	-	-
PDS(M)-732(D) PPDS(M)-732(D)-MTCP	2	1	-	4/4	10/100 M	5 Wire RS-232	2 Wire RS-485	5 Wire RS-232	-	-	-	-	-
PDS(M)-734(D) PPDS(M)-734(D)-MTCP	1	1	1	4/4	10/100 M	5 Wire RS-232	2 Wire RS-485	RS-422/ RS-485	-	-	-	-	-
PDS(M)-742(D) PPDS(M)-742(D)-MTCP	3	1	-	-	10/100 M	5 Wire RS-232	2 Wire RS-485	5 Wire RS-232	9 Wire RS-232	-	-	-	-
PDS(M)-743(D) PPDS(M)-743(D)-MTCP	3	1	-	4/4	10/100 M	5 Wire RS-232	2 Wire RS-485	3 Wire RS-232	3 Wire RS-232	-	-	-	-
PDS(M)-752(D) PPDS(M)-752(D)-MTCP	4	1	-	-	10/100 M	5 Wire RS-232	2 Wire RS-485	5 Wire RS-232	5 Wire RS-232	5 Wire RS-232	-	-	-
PDS(M)-755(D) PPDS(M)-755(D)-MTCP	1	4	-	-	10/100 M	5 Wire RS-232	2 Wire RS-485	2 Wire RS-485	2 Wire RS-485	2 Wire RS-485	-	-	-
PDS(M)-762(D) PPDS(M)-762(D)-MTCP	5	1	-	1/2	10/100 M	5 Wire RS-232	2 Wire RS-485	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	-	-
PDS(M)-782(D) PPDS(M)-782(D)-MTCP	7	1	-	-	10/100 M	5 Wire RS-232	2 Wire RS-485	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232
PDS-782(D)-25/D6	7	1	-	-	10/100 M	5 Wire RS-232	2 Wire RS-485	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232	3 Wire RS-232

Note:

1. The D version modules have a built-in 7-Seg. LED Display.
2. The M version modules use metal case.
3. The PPDS-700-MTCP series modules support PoE (Power over Ethernet) and Modbus Gateway.



2.3 Palm-size Serial-to-Ethernet Device Server

DS-712

Serial-to-Ethernet Device Server with 1 RS-232 port

DS-715

Serial-to-Ethernet Device Server with 1 RS-422/RS-485 port



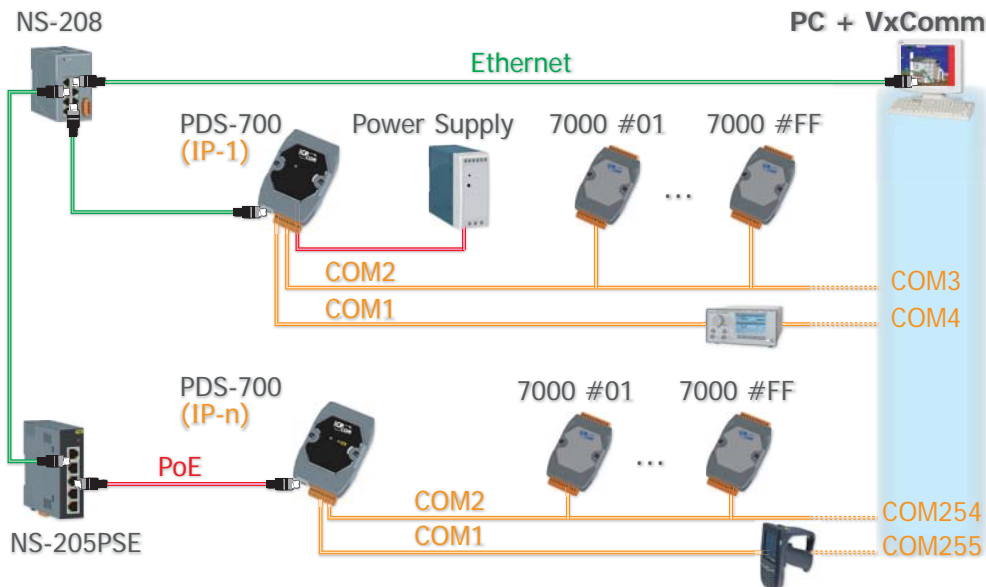
Features ▶▶▶▶▶

- Incorporate Serial Devices in an Ethernet network
- Operation Modes: Virtual COM, TCP Server, TCP Client
- Virtual COM for 32/64-bit Windows XP/2003/2012/Vista/7/8
- Watchdog Timer suitable for use in harsh environments
- 10/100 Base-TX, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Built-in High Performance MiniOS7 from ICP DAS
- High Performance Device Server
- Power Reverse Polarity Protection
- RoHS Compliant & no Halogen
- Serial Port +/-4 kV ESD Protection Circuit
- Low power consumption
- Palm-Size with DIN-Rail Mounting
- Male DB-9 Connector

Introduction

The DS-700 is a series of Serial-to-Ethernet Device Servers that are designed for linking RS-232/422/485 devices to an Ethernet network. By using the VxComm Driver/Utility, the built-in COM port of the DS-700 series can be virtualized to a standard PC COM port in Windows. By virtue of its protocol independence, a small size and flexibility, the DS-700 series meets the demands of virtually any network-enabled application.

The DS-712 is equipped with a male DB-9 connector and supports a 5 Wire RS-232 port, while the DS-715 is equipped with a removable terminal block connector and supports a 4 Wire RS-422 port or a 2 Wire RS-485 port with 2000 V_{rms} isolation.



Ordering Information

DS-712 CR	Device Server with 1 RS-232 port (RoHS)
DS-715 CR	Device Server with 1 Isolated RS-422/RS-485 port (RoHS)

2.4 IP67 Programmable Serial-to-Ethernet Device Server

PPDS-741-IP67 *Available soon*

PPDS-742-IP67 *New*

PPDS-743-IP67 *Available soon*

Programmable Device Server with 4 RS-232 or RS-485 ports, PoE and IP67 Casing



Features ▶▶▶▶▶

- Incorporate Serial Devices in an Ethernet network
- Virtual COM for 32-bit and 64-bit Windows XP/2003/Vista/7
- Watchdog Timer suitable for use in harsh environments
- 10/100 Base-TX, RJ-45 Port (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Built-in High Performance MiniOS7 from ICP DAS
- Self-Tuner ASIC Controller on the RS-485 Port
- Powerful Programmable Device Server
- Rugged RJ-45 Connector for anti-vibration and shock
- Plastic Casing with IP67 Waterproof
- Power Reverse Polarity Protection
- RoHS Compliant & no Halogen
- Serial Port +/-4 kV ESD Protection Circuit
- Low power consumption
- Supports PoE (IEEE 802.3af, Class 1)
- ODM Service is available

Introduction

The PPDS-700-IP67 series is a family of Programmable Device Servers, also known as "Serial-to-Ethernet gateway", that are designed for linking RS-232/422/485 devices to an Ethernet network. The user-friendly VxComm Driver/Utility allows users to easily turn the built-in COM ports of the PPDS-700-IP67 series into standard COM ports on a PC. By virtue of its protocol independence, a small-core OS and high flexibility, the PPDS-700-IP67 series is able to meet the demands of every network-enabled application.

The PPDS-700-IP67 series includes a powerful and reliable Xserver programming structure that allows you to design your robust Ethernet applications in one day. The built-in, high-performance MiniOS7 boots the PPDS-700-IP67 up in just one second and gives you fastest responses.

The PPDS-700-IP67 is a special design for the toughest applications. It can be directly mounted to any machine or convenient flat surface. The rugged packaging and IP67 connectors are rated to protect against water, oil, dust, vibration, and much more.

The PPDS-700-IP67 supports PoE (Power over Ethernet) function that allows power and data to be carried over a single Ethernet cable, so a device can operate solely from the power it receives through the data cable. This innovation allows greater flexibility in office design, higher efficiency in systems design, and faster turnaround time in set-up and implementation. When there is no PoE switch on site, the PPDS-700-IP67 accepts power input from a +12 V_{DC} ~ +48 V_{DC} adapter.

When using PoE devices such as the PPDS-700-MTCP, PPDS-700-IP67 and PET-7000 (Ethernet I/O module with PoE), you can select the ICP DAS "PoE" switch – "NS-205PSE" – as the power source. The NS-205PSE automatically detects whether the connected devices are PoE devices or not. This mechanism ensures that the NS-205PSE will work with both PoE and non-PoE devices simultaneously.

As a power source for PoE devices, the NS-205PSE requires a power input ranging from +46 V_{DC} ~ +55 V_{DC}.

Ordering Information

PPDS-741-IP67 CR	Programmable Device Server with 1 RS-232 port, 3 RS-485 ports, PoE and IP67 Casing (RoHS)
PPDS-742-IP67 CR	Programmable Device Server with 2 RS-232 ports, 2 RS-485 ports, PoE and IP67 Casing (RoHS)
PPDS-743-IP67 CR	Programmable Device Server with 3 RS-232 ports, 1 RS-485 port, PoE and IP67 Casing (RoHS)

PAC Products

Panel Products

Remote I/O Module and Unit

Industrial Communication

Wireless Solution

Motion Automation

Energy Management Solution

DAQ Card

Accessories

2.5 Programmable Serial-to-Fiber Device Server

PDS-220Fx

Programmable Device Server with 1 RS-232, 1 RS-422/485 and 1 Fiber ports



Features ▶▶▶▶▶

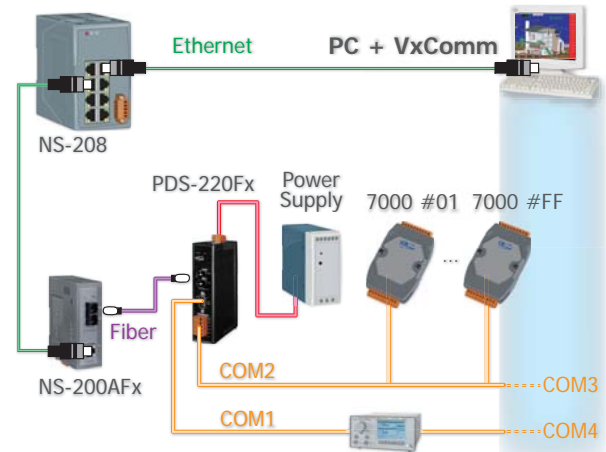
- Adds optical fiber connectivity to serial devices
- Virtual COM for 32-bit and 64-bit Windows XP/2003/Vista/7
- Watchdog Timer suitable for use in harsh environments
- Serial Port +/-4 kV ESD Protection Circuit
- RoHS Compliant & no Halogen
- 100 Base-FX (SC/ST connector)
- Low power consumption
- "Virtual COM" extends PC COM ports
- Powerful Programmable Device Server
- Power Reverse Polarity Protection
- Self-tuner ASIC Controller on the RS-485 port
- Built-in high performance MiniOS7 from ICP DAS
- ODM Service is available

Introduction

The PDS-220Fx series is a family of Programmable Device Servers, also known as "Serial-to-Fiber gateway", that are designed for adding optical fiber connectivity to RS-232/422/485 devices.

The fiber-optic communications permits transmission over longer distances than other forms of communications because of the signals travel along them with less loss and no crosstalk. It has following important features:

- **Immunity to electromagnetic interference (EMI) — Motors, relays, welders and other industrial equipment generate a tremendous amount of electrical noise that can cause major problems with copper cabling.**
- **High electrical resistance, making it safe to use near high voltage equipment or between areas with different earth potentials.**
- **No sparks — important in flammable or explosive gas environments.**
- **Not electromagnetically radiating, and difficult to tap without disrupting the signal — important in high-security environments.**



Because of these reasons, optical fibers have largely replaced copper wire communications in core networks in the developed world. The user-friendly VxComm Driver/Utility allows users to easily turn the built-in COM ports of the PDS-220Fx series into standard COM ports on a PC. By virtue of its protocol independence, a small-core OS and high flexibility, the PDS-220Fx series is able to meet the demands of every network-enabled application.

The PDS-220Fx series includes a powerful and reliable Xserver programming structure that allows you to design your robust Ethernet applications in one day. The built-in, high-performance MiniOS7 boots the PDS-220Fx up in just one second and gives you fastest responses.

The PDS-220Fx is equipped with 1 RS-232 port and 1 RS-422/485 port. The removable onboard terminal block connector is designed for easy and robust wiring in industrial situations.

Ordering Information

PDS-220FT CR	Programmable Device Server with 1 RS-232, 1 RS-422/485 and 1 Multi-mode ST Fiber Port (RoHS)
PDS-220FC CR	Programmable Device Server with 1 RS-232, 1 RS-422/485 and 1 Multi-mode SC Fiber Port (RoHS)
PDS-220FCS CR	Programmable Device Server with 1 RS-232, 1 RS-422/485 and 1 Single-mode SC Fiber Port (RoHS)
PDS-220FCS-60 CR	Programmable Device Server with 1 RS-232, 1 RS-422/485 and 1 Single-mode SC Fiber Port (RoHS)

2.6 Tiny Serial-to-Ethernet Device Server & Modbus Gateway

PAC Products

Panel Products

Remote I/O
Module and Unit

Industrial
Communication

Wireless
Solution

Motion
Automation

Energy
Management
Solution

DAQ Card

Accessories

tDS-700 Series

Tiny Serial-to-Ethernet Device Server



tDS-712 tDS-700 series

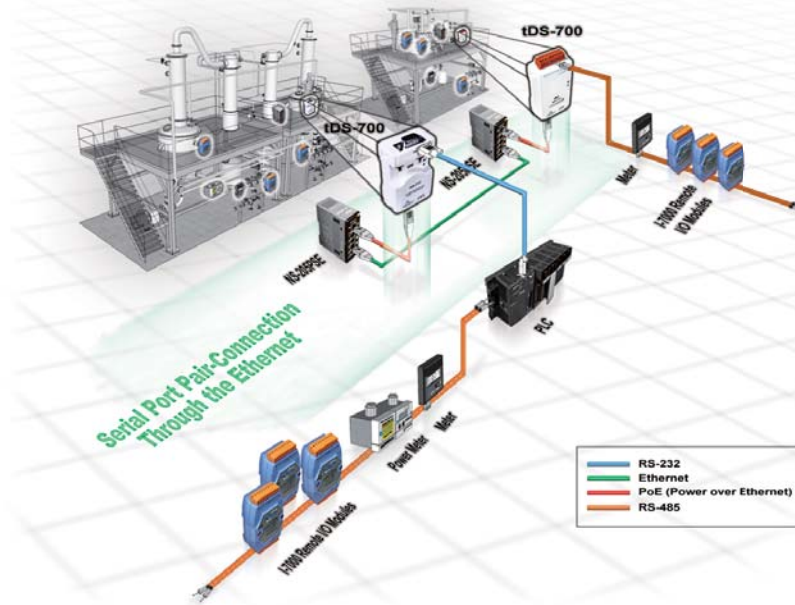


Features ▶▶▶▶▶

- Incorporates any RS-232/422/485 serial device in Ethernet
- Contains a 32-bit MCU that efficiently handles network traffic
- Operation Modes: Virtual COM, TCP Server, TCP Client
- Virtual COM for 32/64-bit Windows XP/2003/2012/Vista/7/8
- Data Packing Modes: Length, Delimiter, timeout, Char-timeout
- Supports pair-connection (serial-bridge, serial-tunnel) applications
- Supports UDP responder for device discovery (UDP Search)
- Static IP or DHCP network configuration
- Easy firmware update via the Ethernet (BOOTP, TFTP)
- Tiny Web server for serial and network configuration (HTTP)
- 10/100 Base-TX Ethernet, RJ-45 x 1 (Auto-negotiating, auto MDI/MDIX, LED Indicators)
- Redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC jack
- Allows automatic RS-485 direction control
- Male DB-9 or terminal block connector for easy wiring
- Tiny form-factor and low power consumption
- RoHS compliant & no Halogen
- Cost-effective device servers

Introduction

The tDS-700 is a series of Serial-to-Ethernet device servers designed to add Ethernet and Internet connectivity to any RS-232 and RS-422/485 device, and to eliminate the cable length limitation of legacy serial communication. By using the VxComm Driver/Utility, the built-in COM port of the tDS-700 series can be virtualized to a standard PC COM port in Windows. Therefore, users can transparently access or monitor serial devices over the Internet/Ethernet without software modification.



Ordering Information

tDS-700 Series	
tDS-712 CR	Tiny Device Server with PoE and 1 RS-232 Port (RoHS)
tDS-715i CR New	Tiny Device Server with PoE and 1 Isolated RS-422/485 Port (RoHS)
tDS-722 CR	Tiny Device Server with PoE and 2 RS-232 Ports (RoHS)
tDS-732 CR	Tiny Device Server with PoE and 3 RS-232 Ports (RoHS)
tDS-715 CR	Tiny Device Server with PoE and 1 RS-422/485 Port (RoHS)
tDS-725 CR	Tiny Device Server with PoE and 2 RS-485 Ports (RoHS)
tDS-735 CR	Tiny Device Server with PoE and 3 RS-485 Ports (RoHS)
tDS-718 CR	Tiny Device Server with PoE and 1 RS-232/422/485 Port (RoHS)
tDS-724 CR	Tiny Device Server with PoE, 1 RS-485 and 1 RS-232 Ports (RoHS)
tDS-734 CR	Tiny Device Server with PoE, 1 RS-485 and 2 RS-232 Ports (RoHS)

Includes: One CA-002 cable.

tGW-700 Series

Tiny Modbus/TCP to RTU/ASCII Gateway



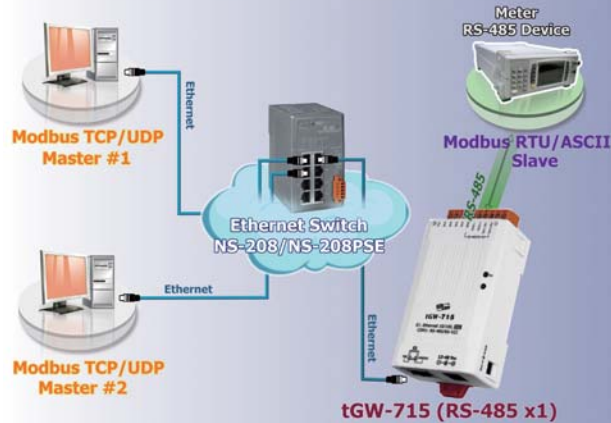
Features ▶▶▶▶▶

- Supports Modbus TCP/UDP master and slave
- Supports Modbus RTU/ASCII master and slave
- Max. TCP connections (masters) per serial port: 32 (tGW-71x), 16 (tGW-72x) or 10 (tGW-73x)
- Read-cache ensures faster Modbus TCP/UDP response
- Supports UDP responder for device discovery (UDP Search)
- Static IP or DHCP network configuration
- Easy firmware update via the Ethernet (BOOTP, TFTP)
- Tiny Web server for serial and network configuration (HTTP)
- Contains a 32-bit MCU that efficiently handles network traffic
- 10/100 Base-TX Ethernet, RJ-45 x 1 (Auto-negotiating, auto MDI/MDIX, LED Indicators)
- Includes redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC jack
- Allows automatic RS-485 direction control
- Male DB-9 or terminal block connector for easy wiring
- Tiny form-factor and low power consumption
- RoHS compliant & no Halogen
- Cost-effective Modbus Gateway

Introduction

The tGW-700 module is a Modbus gateway that enables a Modbus TCP/UDP host to communicate with serial Modbus RTU/ASCII devices through an Ethernet network, and eliminates the cable length limitation of legacy serial communication devices. The module can be used to create a pair-connection application, and can then route data over TCP/IP between two serial Modbus RTU/ASCII devices, which is useful when connecting mainframe computers, servers or other serial devices that use Modbus RTU/ASCII protocols and do not themselves have Ethernet capability.

Modbus TCP/UDP Master to Modbus RTU/ASCII Slave



Modbus RTU/ASCII Master to Modbus TCP/UDP Slave



Ordering Information

tGW-700 Series	
tGW-712 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 1 RS-232 Port (RoHS)
tGW-715i CR New	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 1 Isolated RS-422/485 Port (RoHS)
tGW-722 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 2 RS-232 Ports (RoHS)
tGW-732 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 3 RS-232 Ports (RoHS)
tGW-715 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 1 RS-422/485 (RoHS)
tGW-725 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 2 RS-485 Ports (RoHS)
tGW-735 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 3 RS-485 Ports (RoHS)
tGW-718 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE and 1 RS-232/422/485 Port (RoHS)
tGW-724 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE, 1 RS-485 and 1 RS-232 Ports (RoHS)
tGW-734 CR	Tiny Modbus/TCP to RTU/ASCII Gateway with PoE, 1 RS-485 and 2 RS-232 Ports (RoHS)

Includes: One CA-002 cable.

tSH-700 Series NEW

Tiny Serial Port Sharer



tSH-700 series



Features ▶▶▶▶▶

- Supports baud rate conversion application
- Supports two masters sharing one slave port
- Read-cache ensures faster response
- Redundant power inputs: PoE and DC jack
- Tiny form-factor and low power consumption
- Supports Modbus RTU/ASCII protocol conversion
- Raw data mode for most query-response protocols
- Built-in web server for easy configuration (HTTP)
- Allows automatic RS-485 direction control

Introduction

The tSH-700 module provides a number of functions, including "Baud Rate Conversion", "Modbus RTU/ASCII Conversion" and "Two Masters Share One Slave". The built-in web server provides easy configuration interface, and no console commands are required.

• Baud Rate Conversion:

This function allows a single master device to communicate with slave devices using different baud rates and data formats. Most query-response protocols (half-duplex), e.g. DCON, are supported in the raw data mode. Full-duplex communication should also work when the data size is smaller than the built-in 512 bytes buffer on each serial port.

• Modbus RTU/ASCII Conversion:

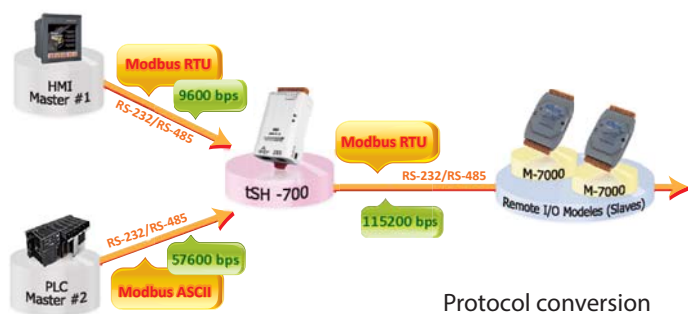
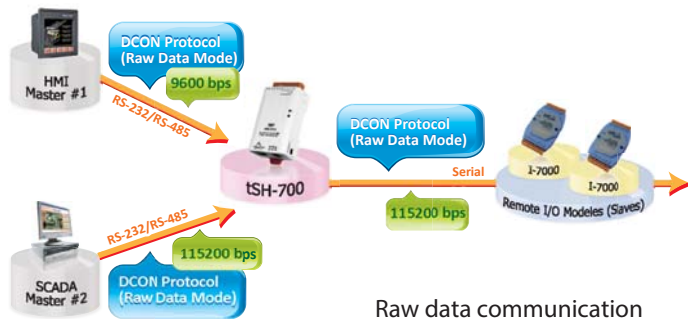
This function allows a single Modbus RTU/ASCII master device to communicate with Modbus RTU/ASCII slave devices using different protocols, baud rates and data formats.

• Two Masters Share One Slave:

This function allows two master devices connected to different serial ports to share slave devices. The queries from the masters are queued in the tSH-700 module and then processed one-by-one. Modbus mode can be used to convert the Modbus RTU/ASCII protocols, while raw data mode can be used for DCON or other query-response protocols. Different baud rates and data formats can also be used on the different serial ports.

• Read-Cache Function:

The built-in read-cache function is used to store previous requests and responses of the Modbus messages in the memory buffer of the tSH-700 module. When other HMI/SCADA master controllers requiring the same information from the same slave RTU device, the cached response is returned immediately. This feature dramatically reduces the loading on the slave serial port communication, ensures faster responses to the master, and improves the stability of the entire system.



Ordering Information

Serial Port Sharer: Includes one CA-002 cable.	
tSH-722 CR New	Tiny Serial Port Sharer with PoE and 2 RS-232 Ports (RoHS)
tSH-732 CR New	Tiny Serial Port Sharer with PoE and 3 RS-232 Ports (RoHS)
tSH-725 CR New	Tiny Serial Port Sharer with PoE and 2 RS-485 Ports (RoHS)
tSH-735 CR New	Tiny Serial Port Sharer with PoE and 3 RS-485 Ports (RoHS)
tSH-724 CR New	Tiny Serial Port Sharer with PoE, 1 RS-485 and 1 RS-232 Ports (RoHS)
tSH-734 CR New	Tiny Serial Port Sharer with PoE, 1 RS-485 and 2 RS-232 Ports (RoHS)

PAC Products

Panel Products

Remote I/O Module and Unit

Industrial Communication

Wireless Solution

Motion Automation

Energy Management Solution

DAQ Card

Accessories

2.7 Programmable Serial Device Server with LAN Switch

PDS-5105D-MTCP

Programmable Device Server with 10 RS-485 Ports, 2-port LAN Switch and LED Display



Features ▶▶▶▶▶

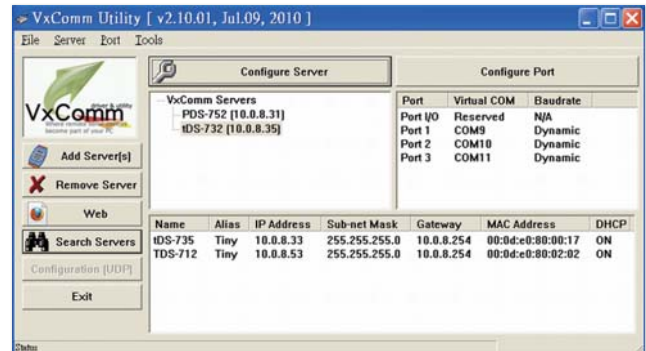
- Integrates any RS-485 serial device in an Ethernet Network
- Virtual COM extends the PC COM ports
- Virtual COM supports 32-bit and 64-bit Windows XP/2003/Vista/7
- Provides 10 RS-485 ports with Self-Tuner (Auto-direction control)
- ±2 kV ESD protection on serial ports
- RoHS compliant & no halogen
- 2-port 10/100 Base-TX Ethernet Switch with LAN Bypass
- Powerful programmable device server
- Watchdog timer suitable for use in harsh environments
- Power reverse polarity protection
- Built-in high performance MiniOS7 from ICP DAS
- ODM service is available
- Low power consumption

Introduction

The PDS-5105D-MTCP is a Programmable Device Server, also known as a "Serial-to-Ethernet gateway" that is designed to allow Ethernet connectivity to be added to RS-232/485 devices.

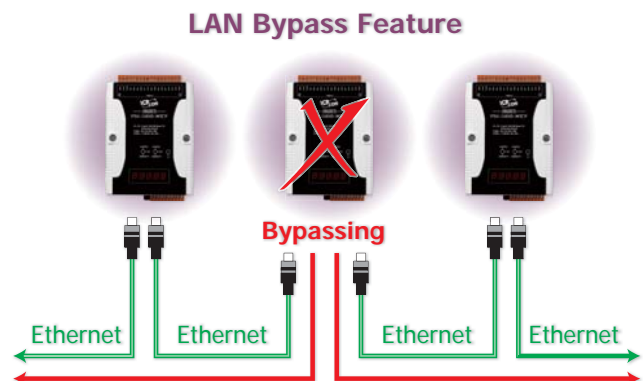
The user-friendly VxComm Driver/Utility allows users to easily turn the built-in COM ports of the PDS-5105D-MTCP series into standard COM ports on a PC. By virtue of its protocol independence, specialized OS and high flexibility, the PDS-5105D-MTCP series is able to meet the demands of any network-enabled application.

The PDS-5105D-MTCP series includes a powerful and reliable Xserver programming structure that allows you to quickly develop custom robust Ethernet applications. The built-in, high-performance MiniOS7 boots the PDS-5105D-MTCP up in just one second and gives you the fastest response.



2-port Ethernet Switch with LAN Bypass

The PDS-5105D-MTCP is equipped with a 2-port 10/100Base-Tx Ethernet switch that simplifies network wiring by cascading Ethernet devices. Furthermore, the module features a LAN Bypass function allowing network traffic to be continued between two network segments (Ethernet port1 and port2). In cases where the module is offline due to software, hardware or power failure, the LAN Bypass function will be automatically activated, and the essential communications on the network can continue operating without interruption.



Ordering Information

PDS-5105D-MTCP CR	Programmable Device Server with 10 RS-485 Ports, 2-port LAN Switch and LED Display. (RoHS)
--------------------------	--

2.8 Programmable Modbus to Ethernet Gateway

μPAC-7186EX(D)-MTCP

Modbus/RTU to Modbus/TCP Gateway



μPAC-7186EX-MTCP

μPAC-7186EXD-MTCP



Features

- Incorporate Serial Devices in an Ethernet network
- Supports Modbus/TCP and Modbus/RTU
- "Virtual COM" extends PC COM ports
- 10/100 Base-TX (Auto-negotiating, auto MDI/MDI-X, LED indicator)
- Self-Tuner ASIC Controller on the RS-485 Port
- 5-digit LED Display (for versions with a display)
- Built-in High Performance MiniOS7 from ICP DAS
- Virtual COM for 32-bit and 64-bit Windows XP/2003/Vista/7
- Programmable Internet/Ethernet Controller
- Watchdog Timer suitable for use in harsh environments
- Power Reverse Polarity Protection Circuit
- RS-485 Port ESD Protection Circuit
- RoHS Compliant & no Halogen
- Low power consumption

Introduction

The Modbus communications protocol has become the de facto industry standard, and is now the most commonly available means of connecting industrial electronic devices.

Modbus allows for communication between many devices connected to the same network, for example a system that measures temperature and humidity and communicates the results to a computer. Modbus is often used to connect a supervisory computer with a remote terminal unit (RTU) in supervisory control and data acquisition (SCADA) systems.

The μPAC-7186EX(D)-MTCP uses a default firmware to become a single Modbus/TCP to multiple Modbus/RTU converter. You can simply use the Modbus Utility to configure the device and then set the connection between the SCADA or HMI software and the μPAC-7186EX(D)-MTCP.

The μPAC-7186EX(D)-MTCP can also link to legacy serial devices that don't support Modbus/RTU. To use this function, you need to install the VxComm driver on the host PCs and create virtual COM ports for the remote serial ports on the μPAC-7186EX(D)-MTCP. You can then directly access the remote serial devices via the virtual COM ports.

Using the Modbus SDK, users can develop their own custom Modbus firmware, allowing extra functions and integration of serial devices. In this way, the μPAC-7186EX(D)-MTCP becomes a powerful controller.

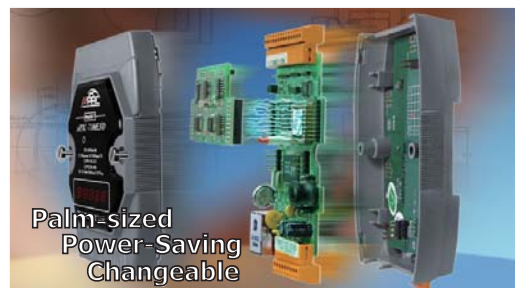
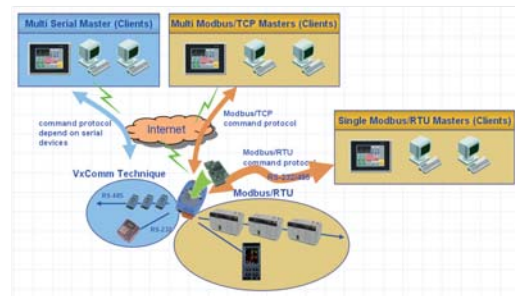
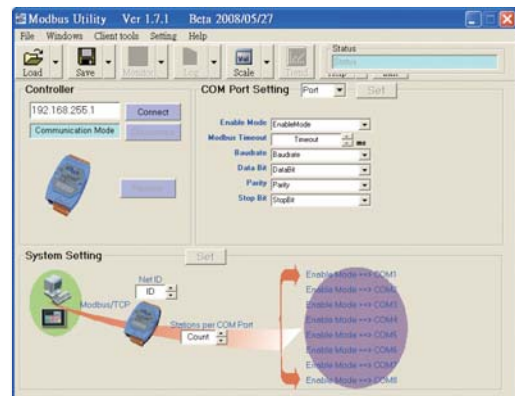
The μPAC-7186EX(D)-MTCP contains a built-in operating system, the MiniOS7, which offers a stable and high performance environment that is similar to DOS. The MiniOS7 can boot up the μPAC-7186EX(D)-MTCP within just one second, with the added benefit of no virus problems and a small footprint. Furthermore, the μPAC-7186EX(D)-MTCP is designed for low power consumption, maintenance elimination (no hard disk and no fan), and is constructed from fire-retardant materials (UL94-V0 level) with a robust case.

I/O Expansion Bus and Expansion Board

The μPAC-7186EX(D)-MTCP supports a single I/O expansion bus for plugging with a X-board. ICP DAS provides many optional X-boards for the μPAC-7186EX(D)-MTCP, which offers various I/O functions, such as D/I, D/O, A/D, D/A, Timer/Counter, UART, flash memory, battery backup SRAM and AsicKey... etc.

Ordering Information

μPAC-7186EX-MTCP CR	μPAC-7186EX with Default Modbus/TCP Firmware (RoHS)
μPAC-7186EXD-MTCP CR	μPAC-7186EXD with Default Modbus/TCP Firmware (RoHS)



PAC Products

Panel Products

Remote I/O Module and Unit

Industrial Communication

Wireless Solution

Motion Automation

Energy Management Solution

DAQ Card

Accessories

2.9 Modbus Data Concentrator, MDC-700 series

MDC-711

Modbus data concentrator with 1x Ethernet and 1 x RS-232, 1 x RS-485

MDC-714

Modbus data concentrator with 1x Ethernet and 1 x RS-232, 4 x RS-485



Features ▶▶▶▶▶

- Modbus Data Concentrator
- Config.CSV to Ease Hard Work of Editing a lot of Definition
- Great Capability of Shared Memory
- Web Sever to Ease the Operating and Show Clear Information

Introduction

MDC-700 series is a Modbus Data Concentrator that has ability to perform up to 200 Modbus/RTU commands to read/write from/to Modbus slave devices via RS-232/485 and allows up to 8 Modbus/TCP masters to get the polled data via the Ethernet.

MDC-700 series provide a built-in web server to ease the configuring and provide clear information for the performed results of each Modbus/RTU command on the RS-232/485.

Modbus Data Concentrator

The MDC performs the pre-defined Modbus/RTU commands to read/write data from/to the Modbus/RTU slave devices via the RS-232/485. It mirrors the data of the slave devices to its own shared memory. And it accepts up to 8 Modbus/TCP masters to directly read/write data form/to the shared memory instead of polling each Modbus/RTU slave device one by one.

This way not only makes the data on the RS-232/485 sharable to multiple Modbus/TCP master but also shorten the time to read/write data from/to multiple Modbus/RTU slave devices.

Great Capability of Shared Memory

The MDC can perform up to 200 polling definitions. And the internal shared memory has four tables to store the polled AI, AO, DI and DO data. Each table can store up to 4000 registers.

Config.CSV to Ease Hard Work of Editing a lot of Definition

The Modbus polling definition is defined in a Config.CSV file. Editing/checking a lot of polling definitions is a hard work and may have chance to make a mistake. A CSV format file can ease the work by using Excel. Furthermore, the built-in web server allows users import/export the Config.CSV via a simple mouse-click action.

#	TCPPort	ModbusID	ModuleInfo	ComPortNo	BaudRate	DataBit	Parity	StopBit	TimeOut	PollDelay	Mode	UseComPort	SlaveModbusID	FunctionCo	RegStartAddr	RegCount
1	*	502	1	1	115200	8	0	1	50	20	Master	2	1	1	0	4
2	*		this is my data concentrator	2	115200	8	0	1	50	20	Master	2	2	2	0	4
3	*			3	9600	8	0	1	100	20	Master	2	3	3	0	4
4	*			4	9600	8	0	1	100	20	Master	2	4	4	0	4
5	*			5	9600	8	0	1	100	20	Master	2	4	4	4	8

Web Sever to Ease the Operating and Show Clear Information

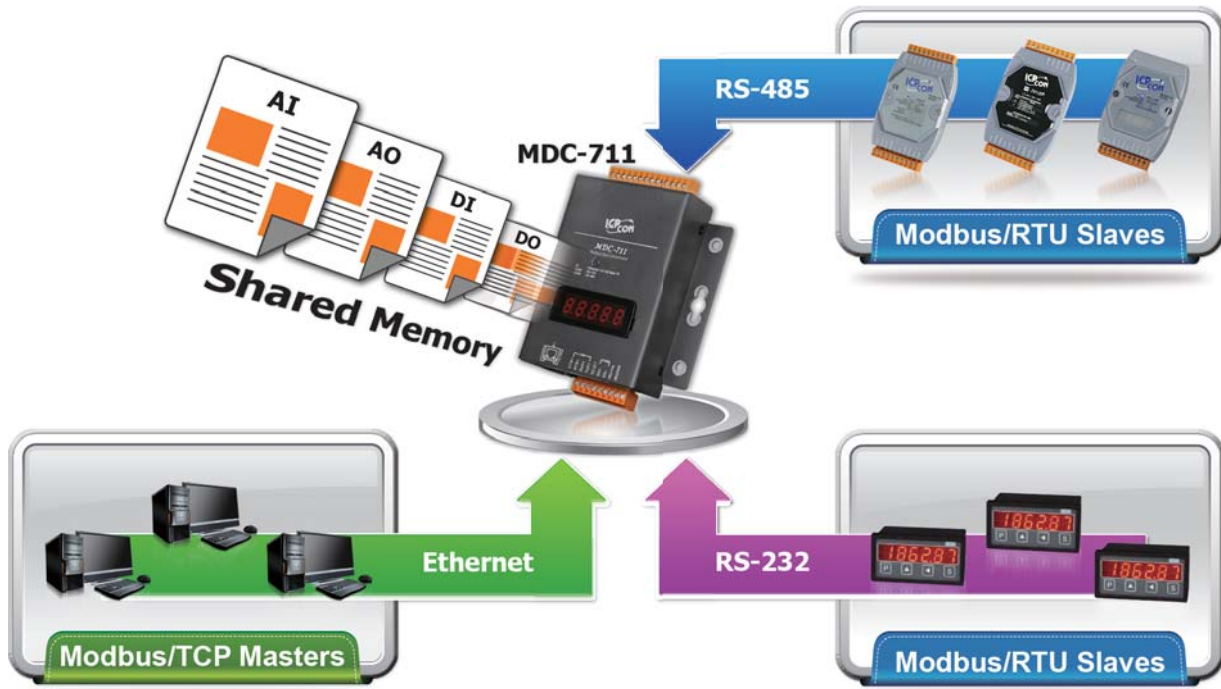
The IP address, configuration file, Config.CSV can be simply configured via the Web server. And the performed results of all Modbus polling definition are shown on the web page. It is very easy to debug which Modbus/RTU device has communication problem. And the MDC firmware will skip the abnormal Modbus polling definition for a while to smoothly perform the whole polling without distribution.

Communication status between host PC and MDC-711: **GOOD**

Polling Definition

- COM1
 - Def. #001 - ID [01], Register [00000:00007] ⇒ Local Register [00000:00007] **GOOD**
 - Def. #002 - ID [01], Register [10000:10007] ⇒ Local Register [10000:10007] **GOOD**
- COM2
 - Def. #003 - ID [01], Register [00000:00003] ⇒ Local Register [00008:00011] **GOOD**
 - Def. #004 - ID [02], Register [10000:10003] ⇒ Local Register [10008:10011] **GOOD**
 - Def. #005 - ID [03], Register [40000:40003] ⇒ Local Register [40000:40003] **GOOD**
 - Def. #006 - ID [04], Register [30000:30003] ⇒ Local Register [30000:30003] **GOOD**

Applications



System Specifications

Model Name	MDC-711	MDC-714
Ethernet		
Port	x1, 10/100 Base-TX	
Protocol	Modbus/TCP Slave	
Max. connection	8	
COM port		
RS-232	x1, (TXD, RXD, RTS, CTS, GND)	
RS-485	x1, (Data+, Data-)	x4, (Data+, Data-)
Baudrate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	
Data Format	N81, E81, O81	
Protocol	Modbus/RTU Master	
Max. Node	32 nodes for each RS-485 port	
Polling Definition	200 definitions for all RS-232/485 ports	
Shared Memory	4000 registers for each of AI, AO, DI and DO data	
System		
5-Digit 7 Segment LED Display	Yes, to display IP address	
System LED Indicator	Yes, to display hear beat	
Mechanical		
Dimension (W x H x D)	102 mm x 125 mm x 28 mm	
Installation	Wall Mount	
Power		
Required Supply Voltage	+10 VDC ~ +30 VDC (non-regulated)	
Power Consumption	2.5 W	
Environment		
Operating Temperature	-25°C ~ +75°C	
Storage Temperature	-40°C ~ +80°C	
Humidity	5 ~ 95% RH, non-condensing	

Ordering Information

MDC-711 CR	Modbus data concentrator with 1x Ethernet and 1 x RS-232, 1 x RS-485 (RoHS)
MDC-714 CR	Modbus data concentrator with 1x Ethernet and 1 x RS-232, 4 x RS-485 (RoHS)

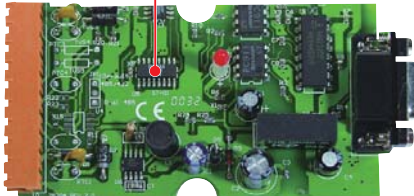
3. Converter/Repeater/Hub/Splitter



ICP DAS Self-Tuner ASIC Features:

- Multiple Baud Rate
- Multiple Data Format
- Automatic RS-485 Direction Control

Self-Tuner Chip

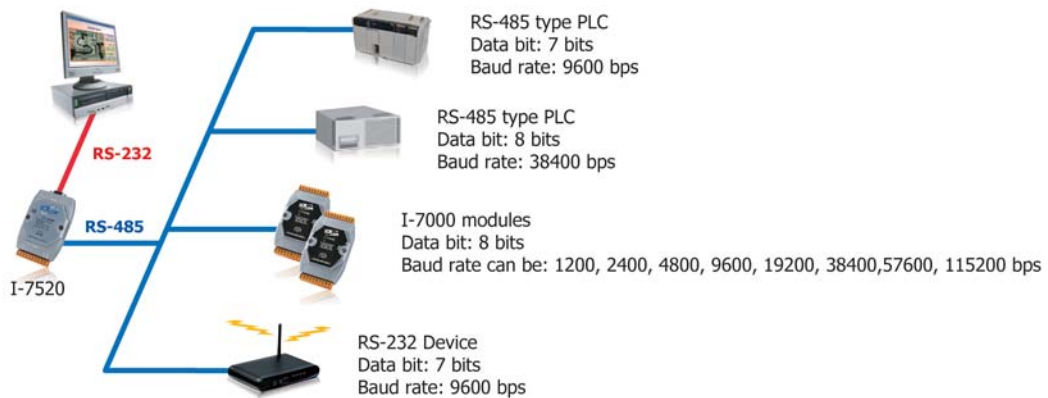


▲ I-7520

"Self-Tuner"

A conventional RS-232 to RS-485 converter uses the DIP switch to select the baud rate and data format for the whole RS-485 network. All modules, devices and equipments in the network should be configured to the same baud rate and data format. Unfortunately most real world applications can't be implemented in such a simple way. The Self-Tuner is an innovative chip designed to solve this problem. Every converter contains a Self-Tuner chip. The chip automatically tunes the baud rate and data format to the whole network. Therefore the I-7520 can connect to modules, devices and equipments with different baud rates and data formats in a network.

Furthermore, the RS-485 is a 2 Wire half-duplex network. To transmit and receive data via the twisted pair wire, a transmission direction control for the RS-485 is needed. In conventional designs, software has to switch a hardware handshaking signal such as RTS (Request To Send) to control the transmission direction. The Self-Tuner chip automatically detects and controls the direction of the transmission of the RS-485 network. So the application program does not have to care about the direction control.



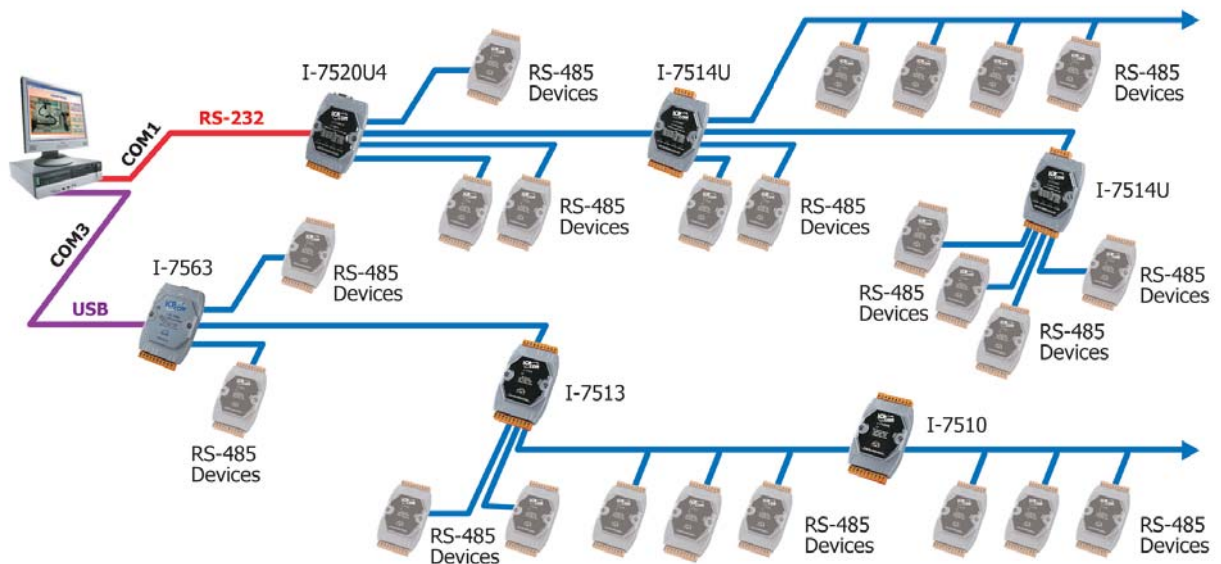
▲ I-7520U4

▲ I-7514U

High Quality Isolated RS-485 Repeater/Hub/Splitter

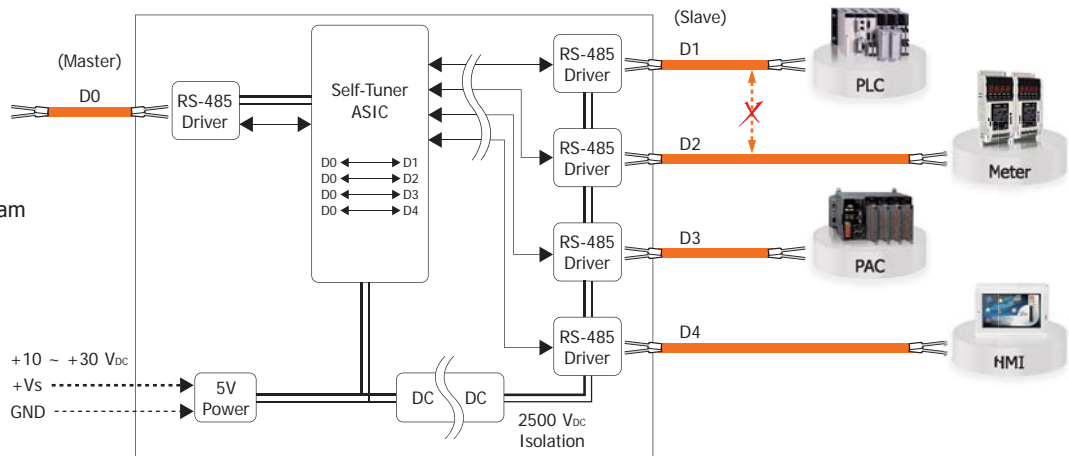
The maximum effective distance of RS-485 without repeater is 1200 meters (4000 feet) at baud rates up to 9.6 Kbps and up to 32 (256) nodes can be connected. With the professional design, the repeater I-7510 solves the problem of signal weakening and extends the maximum effective distance by 1200 m and connects 32 (256) nodes more. And it has optical isolation design for lightning and surge protection. If the RS-485 topology is too complex to make the communicating well, a RS-485 hub or splitter is recommended.

I-7520U4 and I-7514U are multichannel RS-485 repeater/hub/splitter. Each channel is independent and has optical isolation, short circuit and open circuit protection. Thus when one channel fails, it will not affect another channel of the hub. The features make it perfect to star type or mixed type topology in complex and large scale RS-485 network.



The following block diagram shows how I-7514U was designed as independent channel. Data coming from the master input will be transmitted to all four RS-485 slave channels. But data coming from the slave channels will be returned to the master input only. Thus reduces the possibility of interference between each RS-485 slave loop and makes the RS-485 networks more robust and reliable.

► I-7514U Block Diagram



RS-232/422/485 Converter/Repeater

Model Name	tM-7520U	I-7520	I-7520R	I-7520A	I-7520AR	I-7551	tM-7510U	I-7510	I-7510A	I-7510AR
Pictures										
Function	Converter						Repeater			
Interface	RS-232 to RS-485			RS-232 to RS-422/485		RS-232 to RS-232	RS-485	RS-485	RS-422/485	
Isolation	2500 Vdc RS-232 side	3000 Vdc RS-232 side	3000 Vdc RS-485 side	3000 Vdc RS-232 side	3000 Vdc RS-422/485 side	3000 Vdc 3 ways	2500 Vdc	3000 Vdc		3000 Vdc 3 ways
Operating Temperature	-25 ~ +75°C									

USB to RS-232/422/485 Converter

Model Name	I-7560U	I-7561U	tM-7561
Pictures			
Function	Converter	Converter	Converter
Interface	USB to RS-232	USB to RS-232/422/485	USB to RS-485
Isolation	-	2500 Vdc	2500 Vdc
Operating Temperature	-25 ~ +75°C		

USB RS-232/485 to RS-485 Hub

Model Name	I-7563U	I-7513	I-7520U4	I-7514U
Pictures				
Function	3-CH Hub/Splitter	3-CH Hub/Splitter/Repeater	4-CH Hub/Splitter	4-CH Hub/Splitter/Repeater
Interface	USB to 3-CH RS-485	RS-485 to 3-CH RS-485	RS-232 to 4-CH RS-485	RS-485 to 4-CH RS-485
Isolation	2500 Vdc	3000 Vdc 3 ways	2500 Vdc RS-232 side	2500 Vdc CH1-CH4 side
Operating Temperature	-25 ~ +75°C			

4. Ethernet Switch

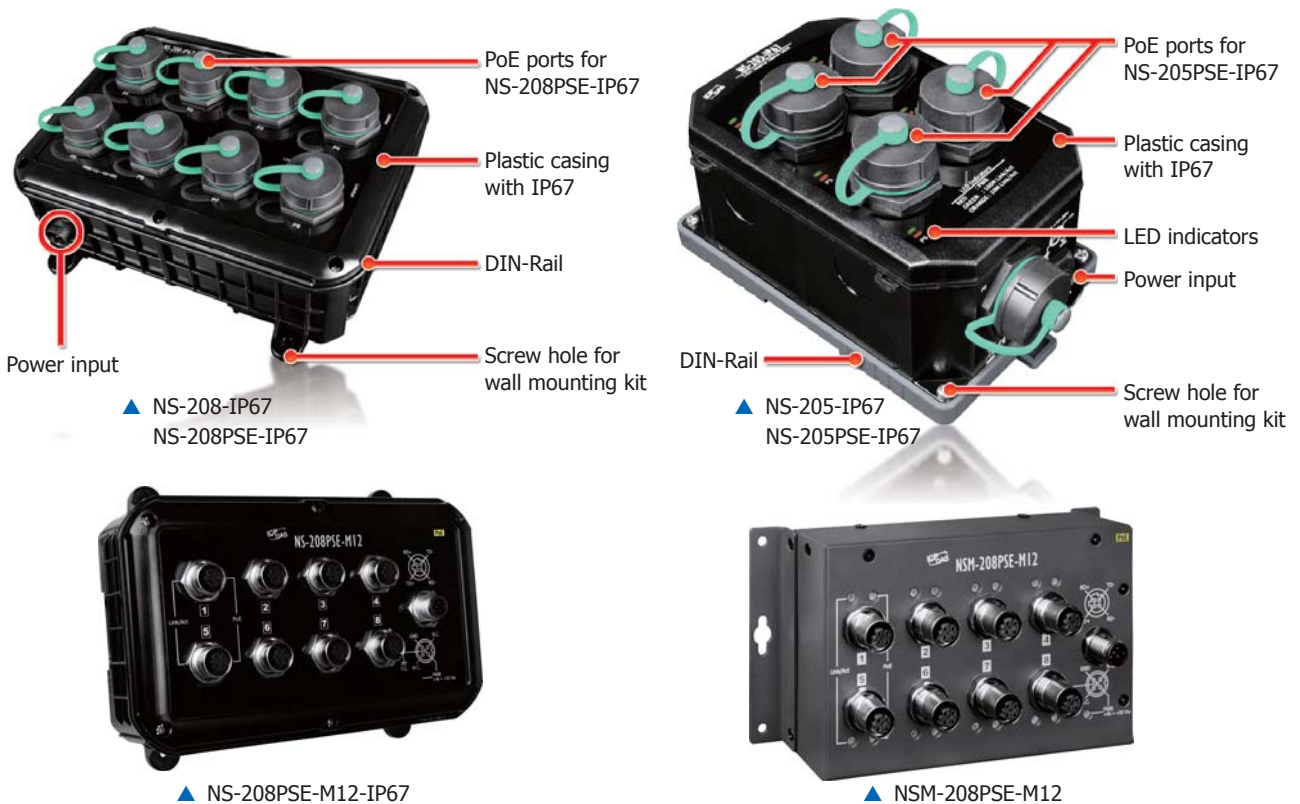
Unmanaged Ethernet Switch

Model Name	Speed	Port	Power Input	Housing
NS-105A	10/100 M	5	+12 ~ 53 VDC	Plastic
NS-205-IP67	10/100 M		+10 ~ 30 VDC, isolated	Plastic with IP67
NS-205AG	10/100/1000 M	8	+12 ~ 48 VDC	Plastic
NS-208AG/NSM-208AG	10/100M/1000 M		+12 ~ 48 VDC	Plastic/Metal
NS-208A/NSM-208A	10/100 M		+12 ~ 48 VDC	Plastic/Metal
NS-208-IP67			+12 ~ 53 VDC	Plastic with IP67
NSM-208-M12			+12 ~ 53 VDC	Metal with M12 connector
NSM-208-M12-IP67	+12 ~ 53 VDC		Plastic with M12 connector and IP67	
NSM-216	10/100 M		16	+12 ~ 48 VDC
NSM-316G	10/100/1000 M	+12 ~ 48 VDC		Metal

Unmanaged PoE Ethernet Switch

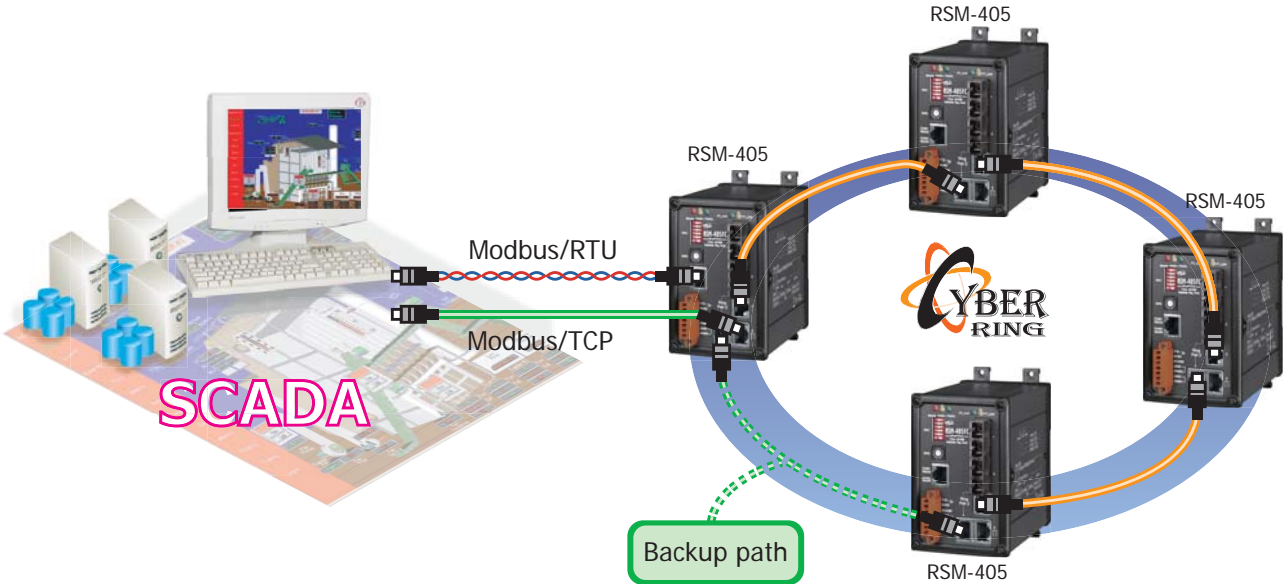
Model Name	Speed	Port	PoE Type (IEEE 802.3at)	Power Input	Housing
NS-105PSE	10/100 M	5	PSE x4	+46 ~ 55 VDC	Plastic
NS-205PSE-IP67	10/100 M			+46 ~ 53 VDC	Plastic with IP67
NSM-205GP	10/100/1000 M			+18 ~ 55 VDC	Metal
NS-208PSE/NSM-208PSE	10/100 M	8	PSE x8	+46 ~ 55 VDC	Plastic/Metal
NSM-208PSE-24V				+18 ~ 55 VDC	Metal
NSM-208PSE-M12				+46 ~ 53 VDC	Metal
NS-208PSE-M12-IP67				+46 ~ 53 VDC	Plastic with M12 connector and IP67
NS-208PSE-IP67				+46 ~ 53 VDC	Plastic with IP67

Appearance



Real-time Redundant Ring Switch

The Real-time Redundant Ring Switch offers fault-tolerant industrial Ethernet with ring network topology. The built-in ICP DAS proprietary Cyber-Ring technology detects and recovers from a fiber or copper link failure within approximately 20 ms – for the majority of applications a seamless process. Modbus/TCP, Modbus/RTU and OPC supported, SCADA application can monitor status of Ethernet and fiber port with Modbus or OPC protocol. And, the relay output facility can deliver warning signal while dual power or network link fails.



Features ▶▶▶▶▶

- 20 ms (typical) to detect and recover from a Ethernet link failure.
- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Redundant Power Inputs with power failure alarm by relay out
- 3.2 Gbps high performance memory bandwidth
- 1 Mbit Frame buffer memory
- 1024/2048 MAC addresses
- Supports operating temperatures from -40°C ~ +75°C
- DIN-Rail mount for industrial use

Real-time Redundant Ring Ethernet/Fiber Port Switch

Model Name	Ethernet		Fiber Port		Power Input	Housing
	Speed	Port	Speed	Port		
RS-405/RSM-405	10/100 Mbps	5	-	-	+10 ~ 30 Vdc	Plastic/Metal
RS-408/RSM-408	10/100 Mbps	8	-	-	+10 ~ 30 Vdc	Plastic/Metal
RS-405F/RSM-405F Series	10/100 Mbps	3	100 Mbps	2	+10 ~ 30 Vdc	Plastic/Metal
RSM-405-R	10/100 Mbps	5	-	-	+10 ~ 30 Vdc	Metal



Model Name	Ethernet		Fiber Port				Power Input	Housing
	Speed	Port	Mode	Connector	Speed	Port		
MSM-508	10/100 Mbps	8	-	-	-	-	+12 ~ 48 VDC	Metal
MSM-508F Series	10/100 Mbps	6	-	-	100 Mbps	2	+12 ~ 48 VDC	Metal
FSM-510G-2F	10/100/1000 Mbps	8	SFP cage	LC	100/1000 Mbps	2	+12 ~ 48 VDC	Metal
FSM-510G-4F	10/100/1000 Mbps	6	SFP cage	LC	100/1000 Mbps	4	+12 ~ 48 VDC	Metal
FSM-6228G-DC	10/100/1000 Mbps	24	SFP cage	LC	100/1000 Mbps	4	+12 ~ 48 VDC	Metal
FSM-6228G-AC	10/100/1000 Mbps	24	SFP cage	LC	100/1000 Mbps	4	100 ~ 240 VAC	Metal

8-port Industrial Ethernet Layer 2 Managed Switch

MSM-508



The MSM-508 is an 8-port Industrial Ethernet (10/100 Base-TX) Layer 2 Managed Switch. MSM-508 supports 10/100M auto negotiation feature and auto MDI/MDI-X function.

- 3.2 Gbps high performance memory bandwidth
- Redundant Power Inputs +12 VDC ~ +48 VDC
- Each port supports both 10/100 Mbps speed auto negotiation
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Operating temperature range: -40°C ~ +75°C
- Store-and-forward architecture
- Frame buffer memory: 1 Mbit
- Supports 2K MAC Addresses
- Power failure alarm by relay output

8-port Industrial Ethernet Layer 2 Managed Switch with 2-Fiber Port

MSM-508F Series



The MSM-508F series is an 8-port Industrial Ethernet Layer 2 Managed Switch with 2-Fiber Port that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference.

- 3.2 Gbps high performance memory bandwidth
- Redundant Power Inputs +12 VDC ~ +48 VDC
- Each port supports both 10/100 Mbps speed auto negotiation
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Operating temperature range: -30°C ~ +75°C
- Store-and-forward architecture
- Frame buffer memory: 1 Mbit
- Supports 2K MAC Addresses
- Power failure alarm by relay output

NEW

6-Port 10/100/1000 Base-T + 4 SFP Port L2 Managed Switch 8-Port 10/100/1000 Base-T + 2 SFP Port L2 Managed Switch

FSM-510G Series



FSM-510G-4F is a L2 Managed Switch that meets all IEEE 802.3ab/u/x/z Gigabit, Gigabit Ethernet and Ethernet specifications. It provides 6 gigabit Ethernet ports (10/100/1000 Mbps TP) 4 SFP ports.

The switch can be managed through RS-232 serial port via direct connection, or through Ethernet port using Telnet or Web-Based management unit, associated with SNMP agent. With the SNMP agent, the network administrator can logon the switch to monitor, configure and control each port activity in a friendly way. The overall network management is enhanced and the network efficiency is also improved to accommodate high bandwidth applications. In addition, the switch features comprehensive and useful function such as DHCP Option 82, QoS (Quality of Service), Spanning Tree, VLAN, Port Trunking, Bandwidth Control, Port Security, SNMP/RMON

- Network redundant Ring fail-over protection (< 20 ms)
- Multicasting support IGMP v1/v2, proxy & snooping
- L2+ features provide better manageability, security, QoS, and performance
- IEEE 802.3ab 1000BASE-T Gigabit Ethernet
- Multicast/Broadcast/Flooding Storm Control

NEW

24-port Ethernet + 4 SFP Layer 2 Gigabit Managed Switch

FSM-6228G-AC FSM-6228G-DC

FSM-6228G is a L2 Managed Switch that meets all IEEE 802.3ab/u/x/z Gigabit, Gigabit Ethernet and Ethernet specifications. It provides 24 gigabit Ethernet ports (10/100/1000 Mbps TP) 4 SFP ports.



The switch can be managed through RS-232 serial port via direct connection, or through Ethernet port using Telnet or Web-Based management unit, associated with SNMP agent. With the SNMP agent, the network administrator can logon the switch to monitor, configure and control each port activity in a friendly way. The overall network management is enhanced and the network efficiency is also improved to accommodate high bandwidth applications. In addition, the switch features comprehensive and useful function such as QoS (Quality of Service), Spanning Tree, VLAN, Port Trunking, Bandwidth Control, Port Security, SNMP/RMON.

- Network redundant Ring fail-over protection (< 20 ms)
- IEEE 802.3ab 1000BASE-T Gigabit Ethernet
- Multicasting support IGMP v1/v2/v3, proxy & snooping
- Multicast/Broadcast/Flooding Storm Control
- L2+ features provide better manageability, security, QoS, and performance

<i>Accessories</i>		
	SFP-1G85M-SX	Multi-mode 850 nm, 0.5 km SFP module
	SFP-1G13M-SX2	Multi-mode 1310 nm, 2 km SFP module
	SFP-1G13S-LX	Single-mode 1310 nm, 10 km SFP module
	SFP-1G13S-LX20	Single-mode 1310 nm, 20 km SFP module
	SFP-1G13S-LHX	Single-mode 1310 nm, 40 km SFP module
	SFP-1G15S-XD	Single-mode 1550 nm, 60 km SFP module

PoE Splitter/Injector

A PoE splitter makes the exact invert operation: by the means of a PoE splitter, the power and the data received on the Ethernet cable are split. The power can then be used to power any other electrical device present in the application.

A PoE injector enables the powering of a PoE compatible device over Ethernet in spite of a non PoE capable Ethernet Switch. The PoE injector, placed between the Ethernet switch and the PoE powered device, merges both data (Ethernet Port) and voltage (power connector) on the Ethernet cable.

Model Name	Speed	Input	Output	Housing
NS-200PS	10/100/1000 Mbps	PoE	Ethernet + 24 VDC	Plastic
tNS-200IN	10/100 Mbps	Ethernet + 48 VDC	PoE	Plastic
tNS-200IN-24V	10/100 Mbps	Ethernet + 24 VDC	PoE	Plastic



Industrial Media Converters & WDM Media Converter

A Media Converter is a simple and low-cost networking device which allows connect two dissimilar media types such as an Ethernet cable with fiber optic, even though transmission speed are different. It is a perfect add-on to an Ethernet switch when combining copper and fiber within the Ethernet Network. Multiple cabling types such as coax, twisted pair, multi-mode and single-mode fiber optics are supported.



Model Name	Fiber Port		Ethernet		Operation temperature	Power Input	Housing
	Speed	Port	Speed	Port			
NS-200F series	100 M	1	10/100 M	1	0 ~ +70°C	+10 ~ 30 VDC	Plastic
NS-200WDM	100 M	1	10/100 M	1	0 ~ +70°C	+12 ~ 48 VDC	Plastic
NS-200AF series	100 M	1	10/100 M	1	-30 ~ +75°C	+12 ~ 48 VDC	Plastic
NSM-200G-SFP NSM-200SX/SX2/LX	1000 M	1	10/100/1000 M	1	-30 ~ +75°C	+12 ~ 48 VDC	Metal

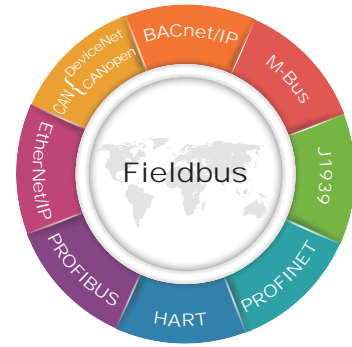
Unmanaged Ethernet Switch with Fiber Ports

An unmanaged industrial Ethernet switch with fiber port(s) provides both Ethernet switch functionality (up to 8 RJ45 ports) and media converter (up to 2 fiber ports) for safe and fast local and long distance (max 60 km) transmissions. Each switch is plug and play, can be installed on DIN-Rail, and supports wide operating temperature range.



Model Name	Fiber Port		Ethernet			Power Input	Housing
	Speed	Port	Speed	Port	PSE (IEEE 802.3af)		
NS-205AF Series NSM-205AF Series	100 M	1	10/100 M	4	-	+12 ~ 48 VDC	Plastic/Metal
NS-205PF Series NSM-205PF Series	100 M	1	10/100 M	4	4	+12 ~ 48 VDC	Plastic/Metal
NS-206AF Series NSM-206AF Series	100 M	1	10/100 M	4	-	+12 ~ 48 VDC	Plastic/Metal
NS-209F Series NSM-209F Series	100 M	1	10/100 M	8	-	+12 ~ 48 VDC	Plastic/Metal

5. Fieldbus Solution



• Selection Guide

Model Name		Description
5.1	EtherNet/IP Gateways 	GW-7472 Ethernet/IP Adapter to Modbus TCP/RTU Master Gateway
		GW-7473 Modbus TCP/RTU Slave to EtherNet/IP Scanner Gateway
5.2	BACnet/IP Gateway 	GW-5492 BACnet/IP to Modbus RTU Gateway
		GW-5493 BACnet/IP to Modbus TCP Gateway
5.3	CAN Bus Repeater/Bridge/Switch 	I-7531 Isolated CAN Bus Repeater
		I-7532 Isolated Two-channel CAN Bus Bridge
		I-2534 4-Port CAN Bus Switch
		I-5534-M 4-Port CAN Bus Switch with Metal Casing
5.4	USB to CAN Converter 	I-7565 1-Port Cost Effective USB to CAN Converter
		I-7565-H1 1-Port High Performance USB to CAN Converter
		I-7565-H2 2-Port High Performance USB to CAN Converter
		I-7565-CPM Intelligent USB to CANopen Converter
		I-7565-DNM Intelligent USB to DeviceNet Converter
5.5	CAN to Fiber Converter/Bridge 	I-2532 CAN to Multi-mode Fiber Converter
		I-2533 CAN to Multi-mode Bridge
		I-2533CS CAN to Single-mode Fiber Bridge
		I-2533CS-60 CAN to Single-mode Fiber Bridge
5.6	Ethernet/Wi-Fi to CAN Converter 	I-7540D-MTCP Modbus TCP to CAN Converter
		I-7540D Ethernet to CAN Converter
		I-7540D-WF Wi-Fi to CAN Converter
5.7	Uart to CAN converter 	I-7530-FT RS-232 to Fault-Tolerance CAN Converter
		I-7530 RS-232 to CAN Converter
		I-7530A RS-232/422/485 to CAN Converter
		I-7530A-MR Modbus RTU to CAN Converter
5.8	CANopen Gateway 	I-7231D CANopen Slave to DCON Master Gateway
		I-7232D CANopen Slave to Modbus RTU Master Gateway
		GW-7433D Modbus TCP/RTU Slave to CANopen Master Gateway
5.9	DeviceNet Gateway 	I-7241D DeviceNet Slave to DCON Master Gateway
		I-7242D DeviceNet Slave to Modbus RTU Master Gateway
		GW-7243D DeviceNet Slave to Modbus TCP/RTU Master Gateway
		GW-7434D Modbus TCP/RTU Slave to DeviceNet Master Gateway
5.10	J1939 Gateway 	GW-7228 Modbus RTU Slave to J1939 Gateway
		GW-7238D Modbus TCP/RTU Slave to J1939 Gateway

- PAC Products
- Panel Products
- Remote I/O Module and Unit
- Industrial Communication
- Wireless Solution
- Motion Automation
- Energy Management Solution
- DAQ Card
- Accessories

Model Name		Description
5.11	PC-based CAN Bus Boards 	PEX-CAN200i 2-Port PCI Express CAN Communication Board
		PISO-CAN100U 1-Port Universal PCI CAN Communication Board
		PISO-CAN200U 2-Port Universal PCI CAN Communication Board
		PISO-CAN400U 4-Port Universal PCI CAN Communication Board
		PISO-CAN800U 8-Port Universal PCI CAN Communication Board
		PCM-CAN100 1-Port PCI-104 CAN Communication Module
		PCM-CAN200 2-Port PCI-104 CAN Communication Module
		PCM-CAN200P 2-Port PCI-104 + CAN Communication Module
		PISO-CM100U 1-Port Universal PCI CAN Board with Built-in Programmable CPU
		PCM-CM100 1-Port PCI-104 CAN Board with Built-in Programmable CPU
		PISO-DNM100U 1-Port Universal PCI CAN Board with Built-in DeviceNet Master Firmware
		PISO-DNS100U 1-Port Universal PCI CAN Board with Built-in DeviceNet Slave Firmware
		PISO-CPM100U 1-Port Universal PCI CAN Board with Built-in CANopen Master Firmware
		PCM-CPM100 1-Port PCI-104 CAN Board with Built-in Programmable CPU
5.12	Palm-size Programmable CAN Controller 	I-7188XBD-CAN 1-Port programmable CAN controller with RS-232/485
		uPAC-7186EXD-CAN 1-Port programmable CAN controller with Ethernet and RS-232/485
		uPAC-5001D-CAN1 1-Port programmable CAN controller with Ethernet and RS-232/485
		uPAC-5001D-CAN2 2-Port programmable CAN controller with Ethernet and RS-232/485
5.13	PAC-based CAN Modules 	I-8120W 1-Port Intelligent CAN Bus Communication Module
		I-87120 1-Port Programmable CAN Bus Communication Module
		I-8123W 1-Port High Performance CANopen Master Module
		I-87123 1-Port High Performance CANopen Master Module
		I-8124W 1-Port High Performance DeviceNet Master Module
		I-87124 1-Port High Performance DeviceNet Master Module
5.14	PROFIBUS Converters & Repeaters 	I-7550 PROFIBUS to RS-232/422/485 Converter
		I-7550-E PROFIBUS to Ethernet Converter
		PROFI-2510 Isolated PROFIBUS Repeater
		PROFI-2541 PROFIBUS to Multi-mode Fiber (ST connector) Converter
		PROFI-2541-SC PROFIBUS to Multi-mode Fiber (SC connector) Converter
		PROFI-2542-SC PROFIBUS to Single-mode Fiber (SC connector) Converter
		GW-7552 PROFIBUS DP Slave to Modbus RTU Gateway
		GW-7553 PROFIBUS DP Slave to Modbus TCP/RTU Gateway
		GW-7553-CPM PROFIBUS DP Slave to CANopen Master Gateway
		GW-7557 PROFIBUS DP Slave to HART Master Gateway
5.15	PROFINET Converter PROFINET Gateway 	I-7580 PROFINET to RS-232/422/485 Converter
		GW-7662 PROFINET to Modbus RTU Gateway
		GW-7663 PROFINET to Modbus TCP/RTU Gateway
5.16	HART Converter  HART Gateway 	I-7547 Ethernet to HART Converter
		I-7567 USB to HART Converter
		I-7570 RS-232/422/485 to HART Converter
		HRT-227CS Fiber to HART Converter
		HRT-228-A4 HART-to-Analog Converter and Loop Monitor
		HRT-710 Modbus RTU/ASCII Slave to HART Master Gateway
		HRT-711 Modbus TCP Slave to HART Master Gateway
5.17	M-Bus 	I-7590 RS-232/422/485 to M-Bus converter
		GW-7838 Modbus RTU/TCP to M-Bus Gateway

5.1 EtherNet/IP Gateways

NEW

EtherNet/IP Adapter to Modbus TCP/RTU Master Gateway

GW-7472



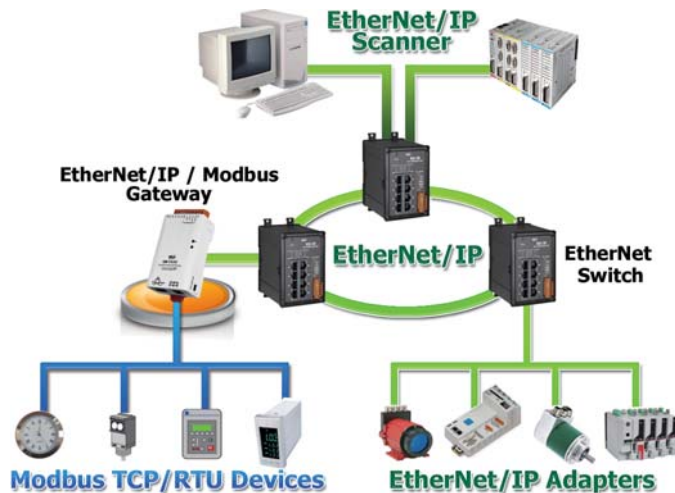
The GW-7472 (EtherNet/IP adapter to Modbus TCP/RTU Gateway) is helpful for data-exchanging between the Modbus RTU Network, Modbus TCP Network, and the EtherNet/IP Network. It reads the register data from the Modbus RTU slaves as well as Modbus TCP servers and publishes these data to the input register data of the EtherNet/IP scanner. The output data transmitted by the EtherNet/IP scanner are updated to the register data of Modbus TCP/RTU slaves via the GW-7472. In order to save the installation space, the GW-7472 is offered in an amazing tiny form-factor that makes it easy to install in anywhere, even directly attached to a serial device or embedded into a machine.

General Features:

- 10/100 Base-TX Ethernet, RJ-45 x 1
- Automatically RS-485 direction control
- Redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC jack
- Tiny form-factor and low power consumption

EtherNet/IP Features:

- Ethernet Protocol: EtherNet/IP adapter
- Maximum number of connections for Explicit Messages: 6
- Maximum number of connections for Implicit Messages: 1
- Supported I/O connection methods:
 - ★ Transport and trigger: Exclusive-Owner, Cyclic
 - ★ Originator to Target Type: POINT2POINT
 - ★ Target to Originator Type: POINT2POINT, MULTICAST
- EtherNet/IP Input/Output command data size: maximum 500 bytes



Modbus Features:

- Modbus Protocol: Modbus TCP/RTU master protocols
- Maximum support 30 Modbus RTU commands
- Maximum support 10 Modbus TCP servers
- Maximum support 8 Modbus commands for each one Modbus TCP server
- Modbus Input/Output command data size: maximum 500 bytes
- Supported Modbus Function Code 01, 02, 03, 04, 05, 06, 15, and 16

NEW

Modbus TCP/RTU Slave to EtherNet/IP Scanner EtherNet/IP

GW-7473



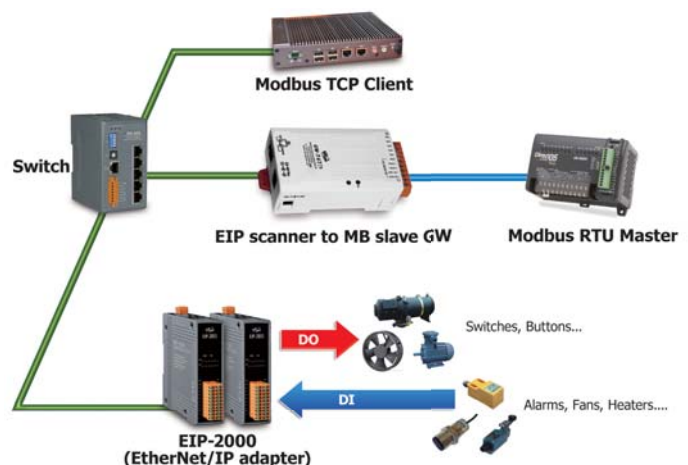
The GW-7473 (Modbus TCP/RTU Slave to EtherNet/IP Scanner Gateway) is helpful for data-exchanging between Modbus Master and EtherNet/IP adapter. It reads the register data from the EtherNet/IP adapter and publishes these data to the input register data of the Modbus TCP client as well as Modbus RTU Master. The output data transmitted by the Modbus TCP/RTU Master are updated to the register data of EtherNet/IP adapter. In order to save the installation space, the GW-7473 is also offered in an amazing tiny form-factor that makes it easy to install in anywhere, even directly attached to a serial device or embedded into a machine.

General Features:

- 10/100 Base-TX Ethernet, RJ-45 x1
- Automatically RS-485 direction control
- Redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC jack Tiny form-factor and low power consumption

EtherNet/IP Features:

- Ethernet Protocol: EtherNet/IP Scanner
- Scanner Class Functionality
 - ★ Class 1 (connected) I/O Server and Client
 - ★ Class 3 (connected) Message Server and Client
- Supported Objects according to CIP Standard
 - ★ Assembly Object
 - ★ Connection Manager Object
 - ★ Ethernet Link Object
 - ★ Message Router Object
 - ★ TCP/IP Interface Object



Modbus Features:

- Modbus Protocol: Modbus TCP Server/RTU Slave protocols
- Maximum support 15 Modbus TCP clients
- Supported Modbus Function Code 01, 02, 03, 04, 05, 06, 15, and 16

5.2 BACnet Gateways

NEW

BACnet/IP Server to Modbus RTU Master Gateway

GW-5492 GW-5493



GW-5492 and GW-5493 is a fully configurable universal BACnet/IP to Modbus RTU/TCP gateway. The GW-549x includes BACnet/IP Server and Modbus RTU Master (GW-5492) or TCP Client (GW-5493) which is used to make Modbus devices accessible on a BACnet network. BACnet (Building Automation and Control Networking) protocol has been designed specifically to meet the communication needs of building automation and control systems for applications such as heating, ventilating. The GW-549x contains a large number of BACnet objects gives you flexibility in mapping Modbus registers to any combination of BACnet objects. Multiple BIBBs are supported. All the data transfer is configurable using a standard Web browser.

Features

- Read/Write Standard Modbus RTU Register via BACnet/IP
- No Programming Required
- Modbus register mapping configured via web interface
- Fully compliant with BACnet/IP server
- Fully user configurable Modbus RTU slave
- Quickly and cost effectively integrate networks

BACnet Support

Object	Binary Input, Binary Output, Binary Value, Analog Input, Analog Output, Analog Value, Multi-State Input, Multi-State Output, Multi-State Value, Device
BIBB	DS-RP-B, DS-RPM-B, DS-WP-B, DS-WPM-B, DS-COV-B, DM-DDB-B, DM-DOB-B, DM-DCC-B, DM-TS-B, DM-UTC-B, DM-RD-B

Modbus Support

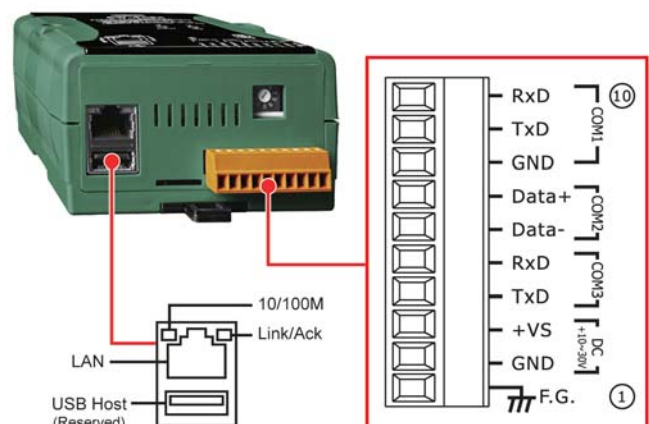
Code	Type	Description
01	Read Coil Status	Read the ON/OFF status of discrete outputs in the slave
02	Read Input Status	Read the ON/OFF status of discrete inputs in the slave
03	Read Holding Registers	Read the binary contents of holding registers in the slave
04	Read Input Registers	Read the binary contents of input registers in the slave
05	Force Single Coil	Write a single output to either ON or OFF in the slave
06	Preset Single Register	Write an integer value into a single register in the slave
15	Force Multi Coils	Write each coil in the sequence of coils to either ON or OFF in the slave
16	Preset Multi Registers	Write a block of contiguous registers in the slave

Utility Features







- Configured via standard Web browser
- Provide Modbus and BACnet configuration interface
- Update firmware remotely
- Easily mapping Modbus Register to BACnet object

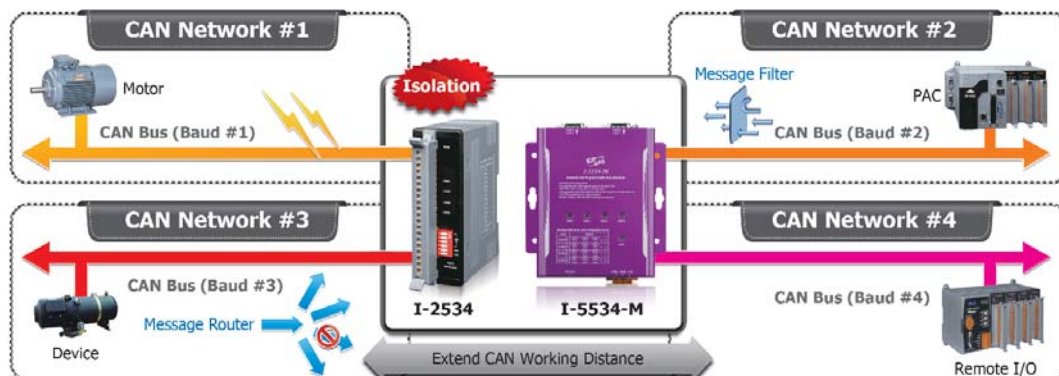
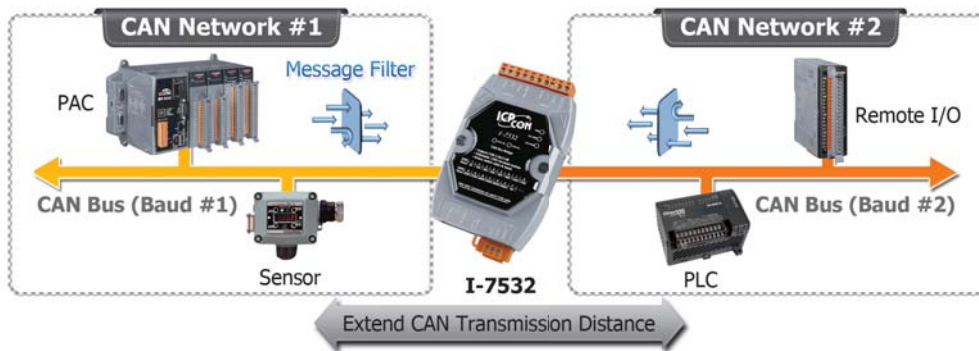
Pin Assignments



5.3 CAN Bus Repeater/Bridge/Switch

The CAN Bus Repeater/Bridge/Switch is used to enhance the signal quality, extend the communication distance, isolate CAN Bus network. ICP DAS provides following products.






Model Name	I-7531	I-7532	I-2534	I-5534-M
	Isolated CAN Bus Repeater	Isolated Two-channel CAN Bus Bridge	4-Port CAN Bus Switch	4-Port CAN Bus Switch with Metal Casing
Pictures			NEW 	
CAN Interface				
Transceiver	NXP 82C250		NXP TJA1042	
Channel number	2		4	
Connector	3-pin screwed terminal block (CAN_GND, CAN_L, CAN_H)	4-pin screwed terminal block (CAN_GND, CAN_L, CAN_SHLD, CAN_H)	9-pin male D-Sub with CAN_GND, CAN_SHLD, CAN_H, CAN_L	
Transmission speed (bps)	5 k ~ 800 k with auto baud rate detection	5 k ~ 1 M selected by rotary switch or utility tool		
Transmission Distance (m)	Depends on the CAN baud rate	Duplicates the transmission distance depended on the CAN baud rate		
Propagation Delay	Max. 200 ns (shortens the transmission distance by ~ 40 m)	Depends on the CAN baud rate (Max. 134 us @ 1 Mbps)	Depends on the CAN baud rate (Max. 440 us @ 1 Mbps)	
Terminator Resistor	Jumper for 120 Ω terminator resistor		DIP switch for the 120 Ω terminator resistor	Jumper for 120 Ω terminator resistor
Isolation	3000 VDC for DC-to-DC, 2500 Vrms for photo-couple			
Specification	ISO 11898-2, CAN 2.0A and CAN 2.0B			







5.4 USB to CAN Converters



The I-7565 series is the USB to CAN converter with a maximum of two independent CAN channels that supports CAN protocols 2.0A and 2.0B. It becomes very convenient and easy to access and control the CAN devices via the USB port of the PC.

Model Name	I-7565	I-7565-H1	I-7565-H2	I-7565-CPM	I-7565-DNM
Pictures	1-Port Cost Effective USB to CAN Converter 	1-Port High Performance USB to CAN Converter 	2-Port High Performance USB to CAN Converter 	Intelligent USB to CANopen Converter 	Intelligent USB to DeviceNet Converter 
USB Interface					
Connector	USB Type B				
Compatibility	USB 1.1 and 2.0 standard				
Compatibility					
Channel	1	1	2	1	1
Transceiver	Philips 82C250	NXP TJA1042		NXP 82C250	NXP 82C250
Connector	9-pin male D-Sub		10-pin terminal block	9-pin male D-Sub	
Baud Rate	10 k, 20 k, 50 k, 100 k, 125 k, 250 k, 500 k, 800 k, 1M				125 k, 250 k, 500 k
Isolation	3000 Vrms			3000 Vdc	
Terminator Resistor	Selectable 120 Ω terminator resistor by a jumper				
Protocol	CAN 2.0A/2.0B			CIA 301 V4.02	DeviceNet Volume I ver2.0, Volume II ver2.0
Receive Buffer	1000 data frames	256 data frames	128 data frames for each CAN port	1000 data frames	256 data frames
Max. Data Flow	250 fps	3000 fps	1500 fps for each CAN port	-	-

5.5 CAN to Fiber Converter/Bridge

Model Name	I-2532	I-2533	I-2533CS	I-2533CS-60
Pictures	CAN to Multi-mode Fiber Converter 	CAN to Multi-mode Fiber Bridge 	CAN to Single-mode Fiber Bridge 	CAN to Single-mode Fiber Bridge 
CAN Interface				
Connector	8-pin screwed terminal block (CAN_GND, CAN_L, CAN_H, N/A for others)	Screwed terminal block (CAN_GND, CAN_L, CAN_H)		
Baud Rate (bps)	10 k ~ 500 k	10 k ~ 1 M		
Transmission Distance (m)	Depends on baud rate	Duplicates the transmission distance depended on baud rate		
Propagation Delay	CAN to fiber or fiber to CAN: 125 ns Max. (125ns delay shortens bus line length by ~ 25 m)	CAN to fiber or fiber to CAN: depends on the CAN baud rate (Max. 120 us @ 1 Mbps)		
Terminator Resistor	DIP switch for the 120 Ω terminator resistor			
Isolation	3000 VDC for DC-to-DC, 2500 Vrms for photo-couple			
Specification	ISO 11898-2, CAN 2.0A and CAN 2.0B			
Fiber Interface				
Connector	ST (Multi-mode)		SC (Single-mode)	
Wave Length	850 nm		1300 or 1310 nm	
Fiber Cable	Multi-mode 50 / 125 μm, 62.5 / 125 μm, 100 / 140 μm (62.5 / 125 μm is recommended)		Single-mode 8.3/125, 8.7/125, 9/125 or 10/125 μm	
Transmission Distance (m)	Max. 1.4 km, depend on the CAN baud rate	Max. 2 km (no matter what CAN baud rate it is)	30 km	60 km
UART Interface				
COM 1	RS-232 (for configuration)			
COM 1 Connector	3-pin screwed terminal block (RxD, TxD, GND)		9-pin female D-Sub	
Transmission speed (bps)	115200			
Data bit	8			
Stop bit	1			
Parity	None			

5.6 Ethernet/Wi-Fi to CAN Converters

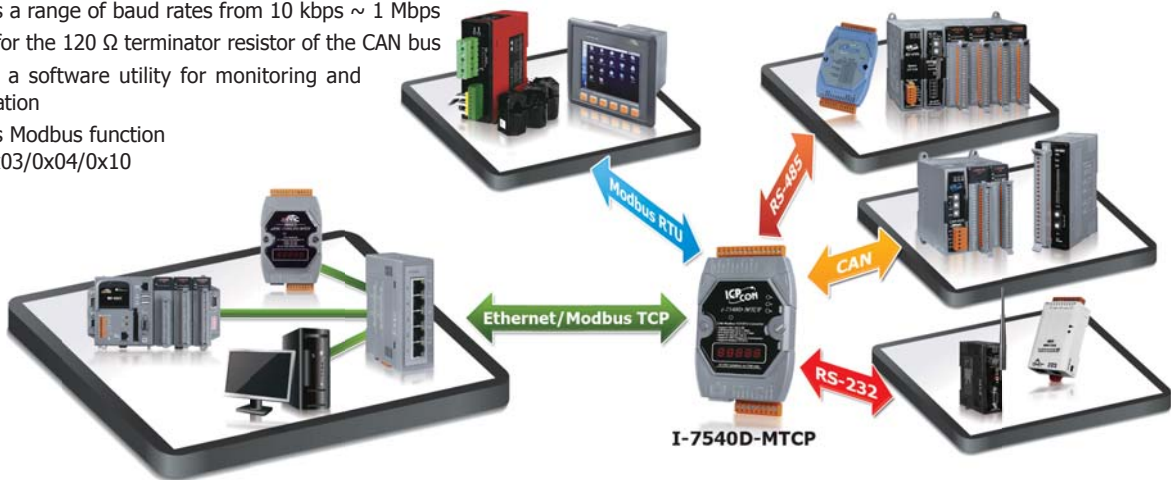
Modbus TCP to CAN Converter

I-7540D-MTCP



Inheriting to the most of all features of the I-7540D, the I-7540D-MTCP enables CAN networks to be combined with the Internet/Ethernet. It can be used to not only access the CAN network via the Ethernet, but can also realize Ethernet transparent transmission on the CAN network. In order to connect the PLCs, HMIs and SCADAs with the CAN devices more easily and conveniently, the I-7540D-MTCP supports the Modbus TCP and Modbus RTU communication interface. This module can act as a Modbus TCP server, and wait for the commands from the Modbus TCP client. When the controller is a Modbus RTU master, the I-7540D-MTCP is able to be the Modbus RTU slave, and transfer the Modbus RTU commands to the CAN messages. These features mean that users can setup their applications more flexibly and conveniently.

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Provides one channel each for CAN, RS-232, RS-485 and 10/100 Base-T Ethernet
- Supports a range of baud rates from 10 kbps ~ 1 Mbps
- Jumper for the 120 Ω terminator resistor of the CAN bus
- Includes a software utility for monitoring and configuration
- Supports Modbus function code: 0x03/0x04/0x10
- Built-in watchdog
- 2500 Vrms photocoupler isolation on the CAN side
- 1 kV galvanic isolation



Ethernet to CAN Converter

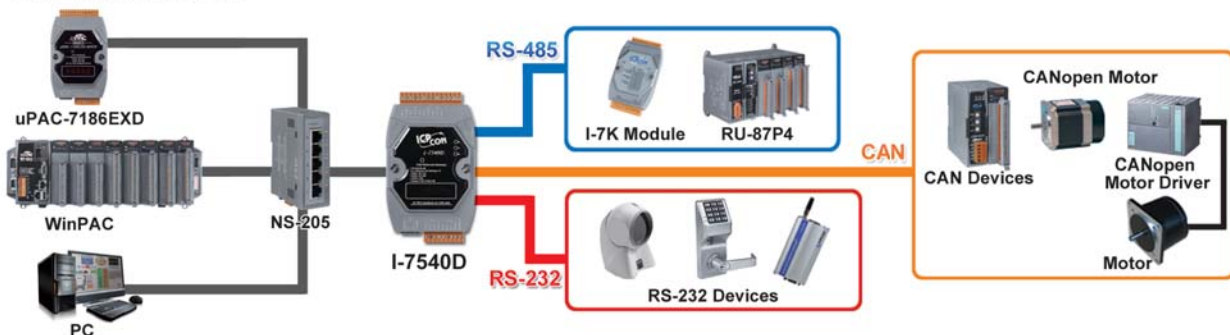
I-7540D



The I-7540D is a CAN to Ethernet converter, and is usually applied as an Ethernet to CAN/RS-232/485 Device Server. It supports socket access functions and virtual COM port technology which helps users to get the CAN, RS-232, RS-485 data via virtual COM port. The I-7540D also provides transparent mode, which enables CAN networks to be coupled together over the Internet/Ethernet, whereby remote monitoring and control is possible. By the features of tiny operating system, protocol independence, small casing and flexibility, it is able to widely fit various RS-232, RS-485 and CAN applications, which may be based on private RS-232 protocol, private CAN protocol, Modbus protocol, CANopen protocol, DeviceNet protocol or J1939 protocol.

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Supports a range of baud rates from 10 kbps ~ 1 Mbps
- 2500 Vrms photocoupler isolation on the CAN side
- Jumper for the 120 Ω terminator resistor of the CAN bus
- Built-in watchdog
- 10/100 Base-T Ethernet port
- 1 kV galvanic isolation
- Provide one channel each for CAN, RS-232, RS-485 and Ethernet
- Provides connections for a maximum of 25 Ethernet clients
- Supports the Virtual COM technology

General Application



NEW

Wi-Fi to CAN Converter

I-7540D-WF



The I-7540D-WF supports the wireless transmission of CAN data between a CAN network and a WLAN network according to the 802.11b/g standard. It provides CAN to WLAN converter functionality together with wireless transparent transmission on the CAN network. The I-7540D-WF is highly suitable for connecting mobile (e.g., vehicles or machines) or stationary CAN networks and is often used in short ranges up to 100 m. Using an appropriately configured router, CAN data can be determined to pass or filter from the CAN networks to the Ethernet. The wireless connection that is established between two I-7540D-WF units can be used instead of a cable, and enables the connection of CAN networks that would otherwise be difficult to link such as rotational machineries.

- IEEE 802.11 b/g compliant
- Wireless data transmission via WLAN
- Two different operation modes: infrastructure and ad-hoc
- Point to point or point to multi-point connection via wireless LAN
- Supports WEP, WPA and WPA2 encryption for wireless LAN
- Compatible with CAN specification 2.0 parts A and B
- Connects CAN networks via a WLAN bridge
- Communication efficiency (peak value): one-way is up to 700 fps (client->server, server->client), two-way 350 fps (client<=>server)
- Wireless transmission distance: up to 100 meters

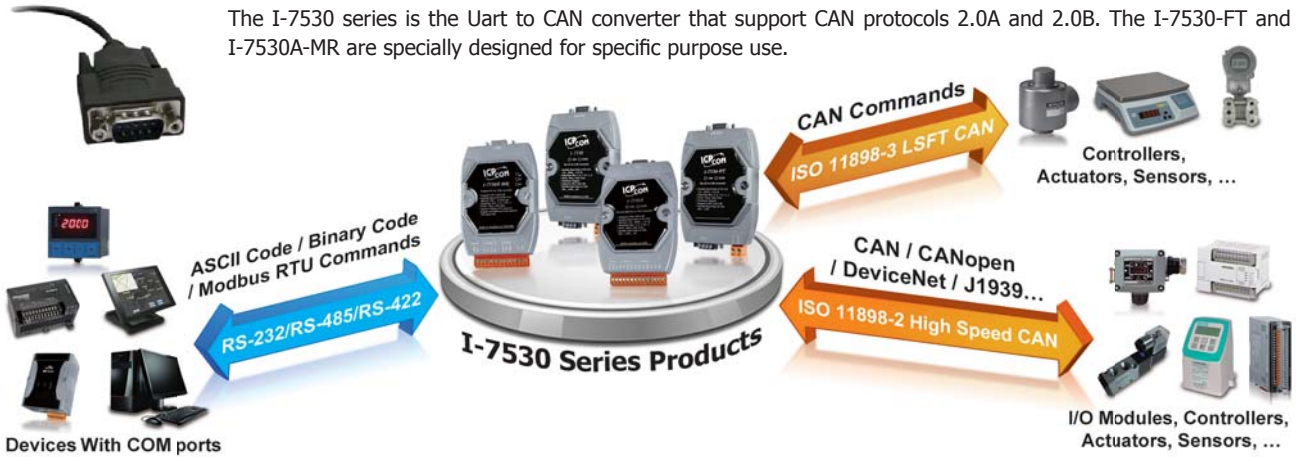


Ad hoc mode (AP is not necessary)



5.7 Uart to CAN Converters

The I-7530 series is the Uart to CAN converter that support CAN protocols 2.0A and 2.0B. The I-7530-FT and I-7530A-MR are specially designed for specific purpose use.



Model Name	I-7530-FT	I-7530	I-7530A	I-7530A-MR
	RS-232 to Fault-Tolerance CAN Converter	RS-232 to CAN Converter	RS-232/422/485 to CAN Converter	Modbus RTU to CAN Converter
Pictures				
CAN Interface				
Transceiver	AMIS 41682		NXP 82C250	
Connector			9-pin male D-sub	
Baud Rate	10 k, 20 k, 50 k, 125 k bps		10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k, 1M bps	
Protocol	ISO 11898-3 (low speed fault tolerance), CAN 2.0A and CAN 2.0B		ISO 11898-2, CAN 2.0A and CAN 2.0B	
Receiver Buffer			1000 data frames	
Isolation	-		3000 Vdc for DC-to-DC	
UART Interface				
Type	RS-232	RS-232	RS-232/422/485	RS-232/422/485
Protocol	-	-	-	Modbus RTU slave
Connector	9-pin female D-sub		14-pin terminal block	
Baud Rate	110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps			300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400 bps
Receiver Buffer	900 data frames			
System				
Power Consumption	1 W	1 W	1 W	1 W
Power Input	10 ~ 30 Vdc			
Dimensions (W x L x H)	72 mm x 118 mm x 33 mm			
Operating Temperature	-25 ~ +75°C			
Storage Temperature	-30 ~ +80°C			

Accessory



Optional CAN bus connector: CNT-CAN



Installation

5.8 CANopen Gateways

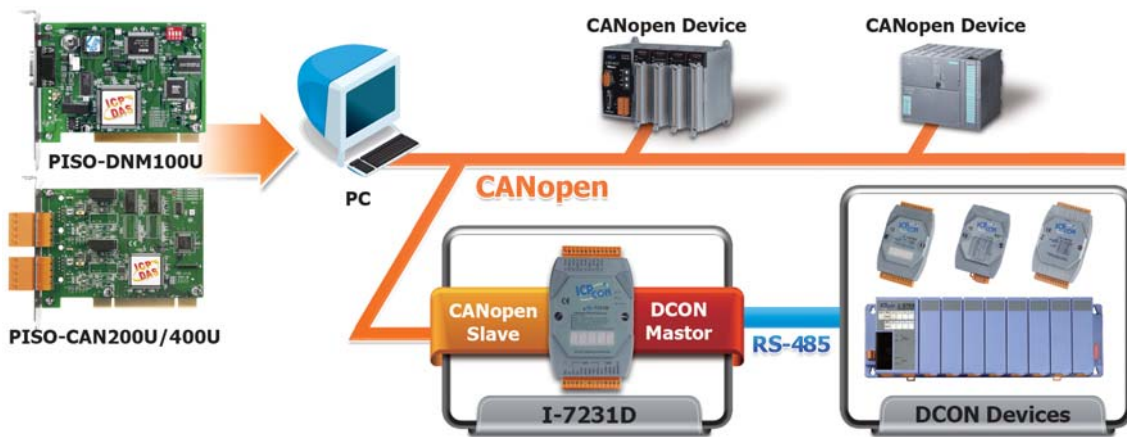
CANopen Slave to DCON Master Gateway

I-7231D



DCON protocol is a kind of application protocols to ICP DAS I/O modules, such as I-7000 series and I-87K series modules. By way of applying the I-7231D, the DCON I/O modules can be integrated to the CANopen network. From the view of CANopen applications, the I-7231D is a CANopen slave device. It can produce or consume the PDO messages, receive the SDO message with proper responses, and deal with the NMT messages from the NMT master. In the DCON network, it is a DCON master device which collects all of the I/O statuses of the I-7000 and I-87K series modules. The utility tool is given to configure the device parameters and build EDS file. Users can easily apply I-7k and I-87K I/O modules in any CANopen master interface via this EDS file.

- CANopen Version: DS-301 v4.02 , DSP-401 v2.1
- Error Control: Node Guarding protocol
- NMT: Slave
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO mapping
- No of SDOs: 1 server, 0 client
- Product EDS file dynamically by utility
- Support Max. 15 I-7000/I-87K I/O series modules



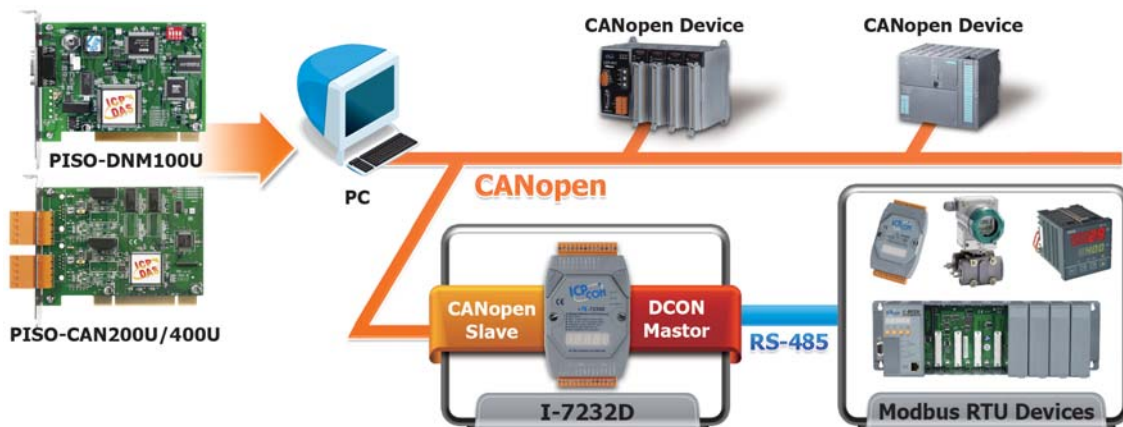
CANopen Slave to Modbus RTU Master Gateway

I-7232D



The I-7232D is a CANopen slave to Modbus RTU master gateway, and allows a CANopen master to have ability to access the Modbus slave devices. In the CANopen network, the I-7232D is a NMT slave, SDO server, PDO producer, and PDO consumer. From the view of the Modbus network, it is a Modbus RTU master which polling all the predefined data of the Modbus RTU slaves, and bypass the CANopen control commands to the Modbus slaves. The I-7232D follows the CANopen Spec CiA-301 v4.02 and CiA-401 v2.1, and supplies many features of CANopen protocols, such as dynamic PDO, EMCY object, error output value, SYNC cyclic and acyclic. Like the I-7231D, the EDS file is also provided by the utility tool. Users can easily apply the I-7232D in the standard CANopen master with the EDS file.

- CANopen Version: DS-301 v4.02 , DSP-401 v2.1
- Error Control: Node Guarding protocol
- NMT: Slave
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO mapping
- No of SDOs: 1 server, 0 client
- Product EDS file dynamically by utility
- Support Max. 10 Modbus RTU commands



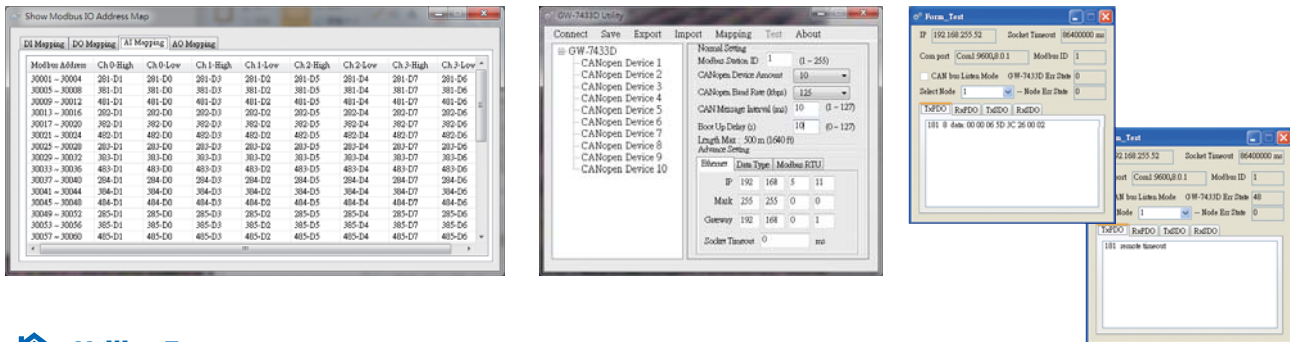
Modbus TCP/RTU Slave to CANopen Master Gateway

GW-7433D



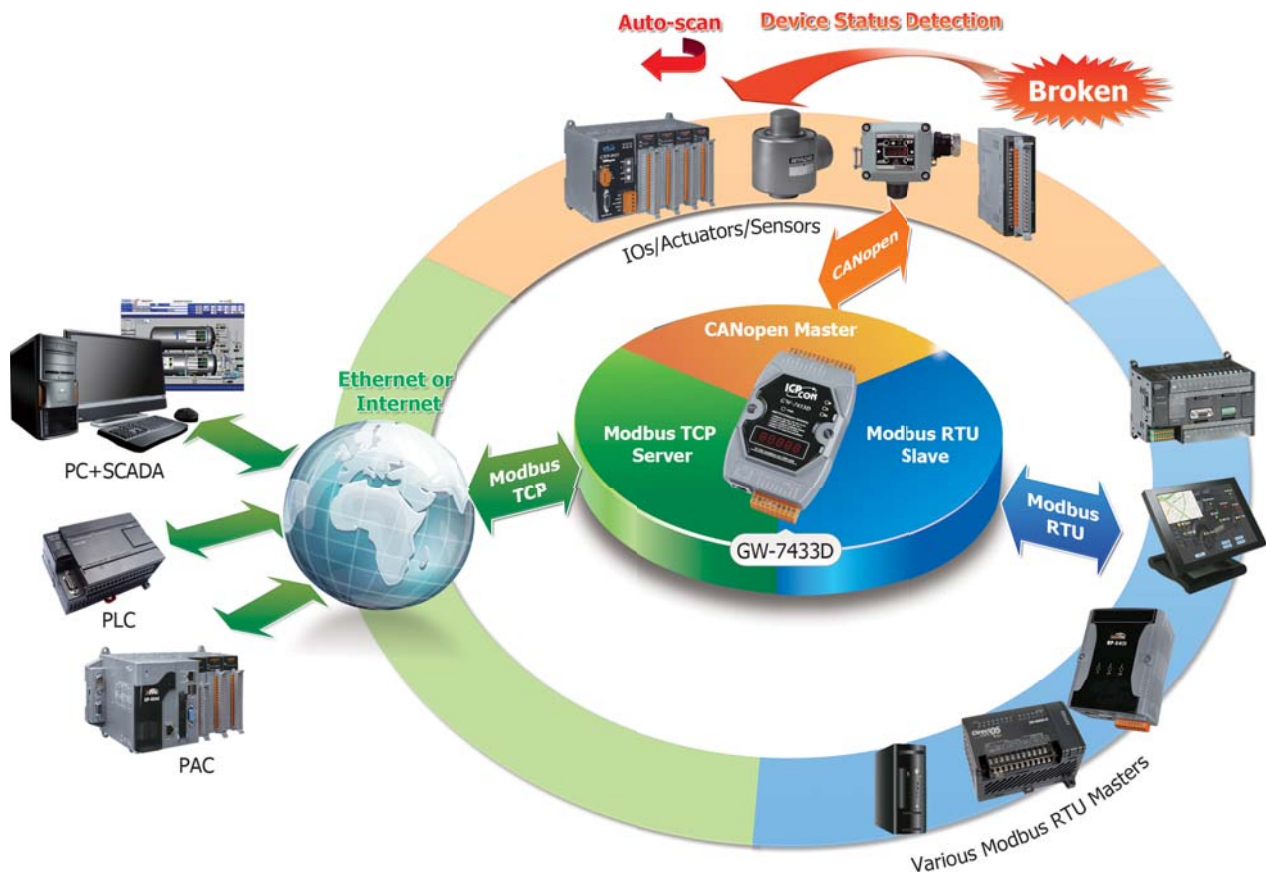
The GW-7433D is an economic Fieldbus solution that provides the communication transformation mechanisms between the Modbus protocol and the CANopen protocol. This module is able to collect the information of the CANopen slaves periodically, and returns these data to the Modbus TCP client or Modbus RTU master while receiving the Modbus commands. When the Modbus TCP client or Modbus RTU master needs to output data to the CANopen slaves, the GW-7433D transfers the received Modbus commands to the CANopen messages to handle the CANopen slaves. Both of the Modbus TCP server and the Modbus RTU slave functions can work on the GW-7433D simultaneously. The GW-7433D also offers the Modbus registers for recording the life statuses of the CANopen slaves. These features mean that users can set up their applications more reliably and flexibly.

- CANopen Version: DS-301 v4.02
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- NMT: Master
- PDO: Event-triggered, RTR
- Support Max. 50 TxPDOs, 50 RxPDOs, 15 SDOs to SDO server
- Allow 5 Modbus TCP masters to access GW-7433D simultaneously
- Configuration by utility via Ethernet



Utility Features

- User-friendly GUI for CANopen and Modbus configuration
- The CANopen EDS file production
- The Modbus TCP and CANopen network diagnosis while setting up the applications
- Automatic data mapping between the Modbus registers and CANopen objects
- Provides export/import the configuration file from/to the GW-7433D



5.9 DeviceNet Gateways

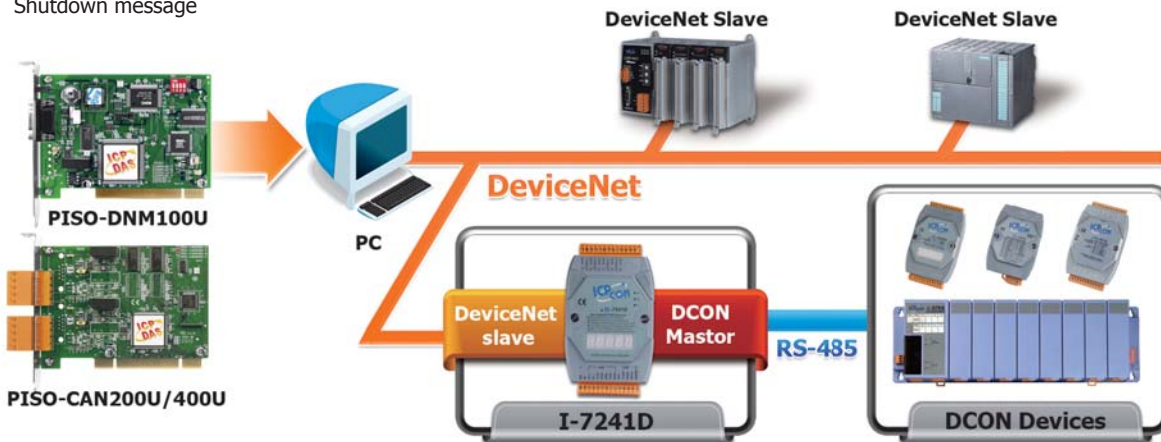
DeviceNet Slave to DCON Master Gateway

I-7241D



The I-7241D is the communication gateway between DeviceNet and DCON protocols. It is a DeviceNet slave device in the DeviceNet network, which functions as a "Group 2 Only Slave" device, and supports "Predefined Master/slave Connection Set". In the DCON network, the I-7241D is a DCON master and can access the data of the I-7000 or I-87k series modules. The utility software is given to configure the device parameters and build EDS file for the DeviceNet slave device. Through the I-7241D, the DeviceNet master can quickly integrate the I-7000 and I-87K series modules into the DeviceNet network.

- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group 2 Only Server)
- Support Offline Connection Set, Device Heartbeat message and Device Shutdown message
- I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
- Provide dynamic Assembly Objects mapping
- Support Max. 15 I-7000/I-87K I/O series modules



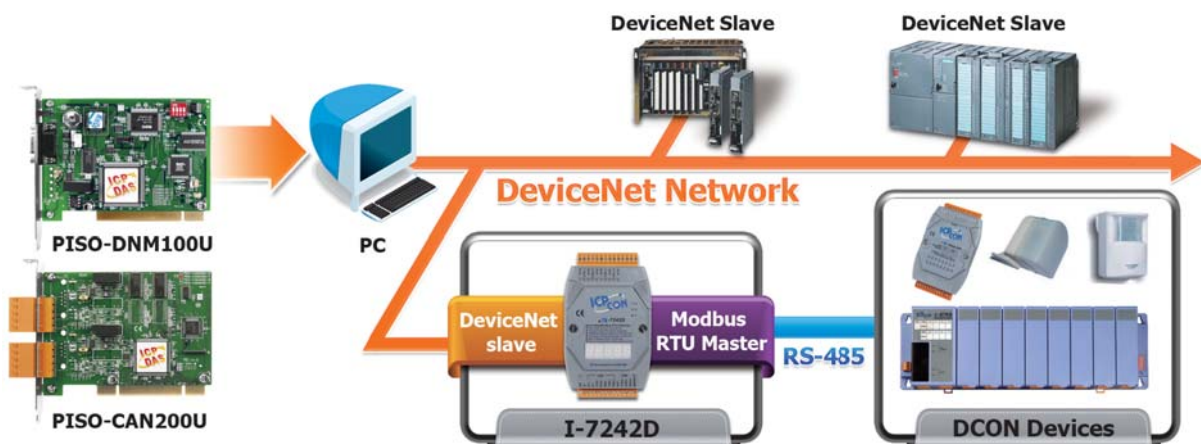
DeviceNet Slave to Modbus RTU Master Gateway

I-7242D



The I-7242D allows a master located on a DeviceNet network to enter into a dialogue with the slaves on a Modbus RTU network. It's a "Group 2 Only Slave" device in the DeviceNet network, and supports "Predefined Master/Slave Connection Set". From the view of the Modbus network, it is a Modbus RTU master which polling all the predefined data of the Modbus RTU slaves, and bypass the DeviceNet control commands to the Modbus slaves. This device is widely used in the application of building automation, remote data acquisition, environment control and monitoring, laboratory equipment & research, factory automation, etc. The I-7242D also has the utility tool which is used to configure the I-7242D's parameters and build the EDS file. Through the EDS file to the I-7241D, it is easy to apply the Modbus RTU devices in DeviceNet applications.

- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group 2 Only Server)
- I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
- Support Offline Connection Set, Device Heartbeat message and
- Provide dynamic Assembly Objects mapping
- Device Shutdown message
- Support Max. 10 Modbus RTU series modules



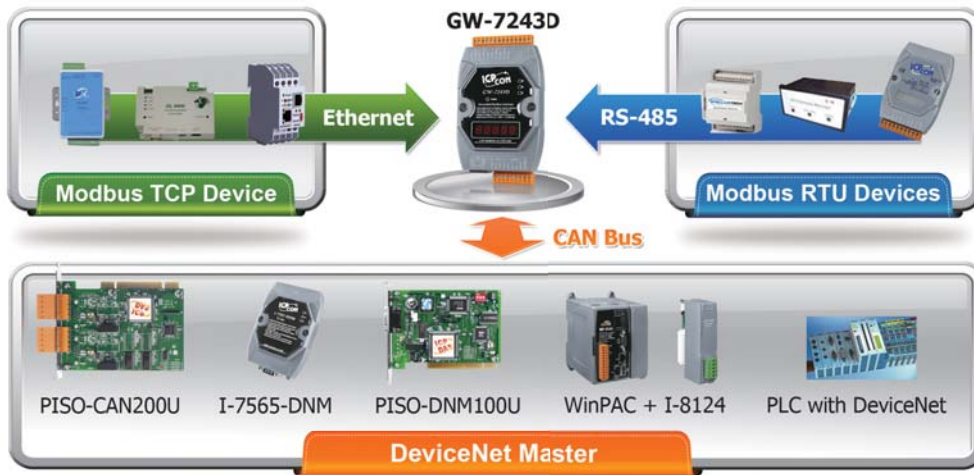
DeviceNet Slave to Modbus TCP/RTU/ASCII Master Gateway

GW-7243D



The GW-7243D offers the DeviceNet slave and Modbus master functions, and enables the DeviceNet master to access the Modbus slave devices. In the DeviceNet network, the module acts as a Group 2 Only Server device, and waits to build the connection with the DeviceNet master. In the Modbus network, the GW-7243D is a master device, and cyclically sends the commands to access the Modbus slave devices. Both the Modbus TCP client and Modbus RTU/ASCII master interfaces of the GW-7243D can work simultaneously. This feature means that users are able to integrate different kinds of Modbus slave devices together into the DeviceNet network no matter these devices provide Ethernet, RS-232 or RS-485 communication interfaces. In order to simplify the use of the GW-7243D, the GW-7243D Utility tool for configuration and EDS file production is given. This is helpful to build the applications easily and quickly.

- Group 2 Only Server DeviceNet subscriber
- Support Explicit and Poll Connection
- Maximum support 4 Modbus TCP devices
- Maximum support 5 Modbus TCP commands for each Modbus TCP device
- Maximum support 10 Modbus RTU/ASCII commands for each COM port
- Support Modbus function codes: 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x0F and 0x10



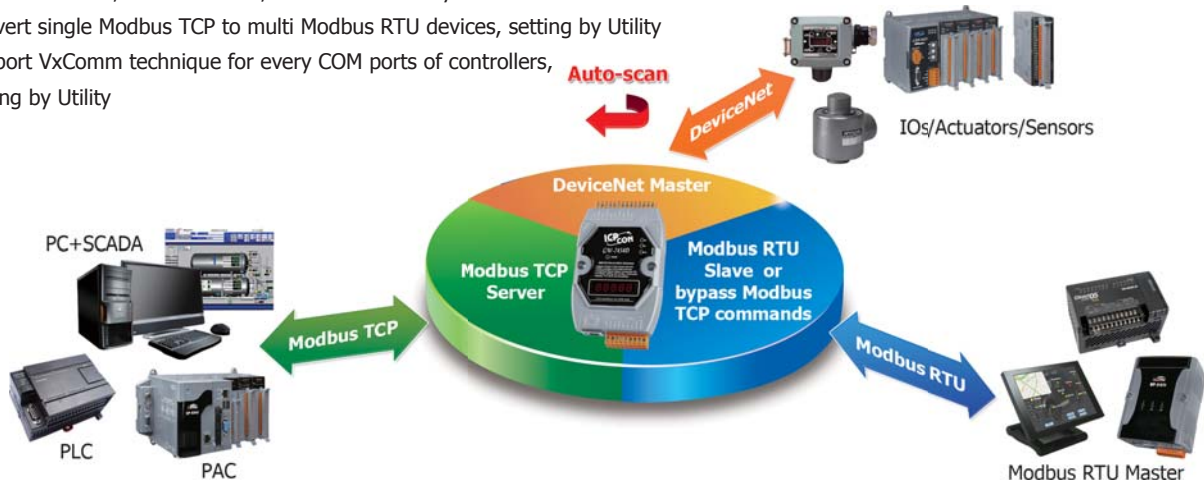
Modbus TCP/RTU/ASCII Slave to DeviceNet Master Gateway

GW-7434D



The GW-7434D is an economic solution that provides a communication protocol transformation between the DeviceNet protocol and the Modbus TCP protocol. This module solves the problem to connect an existing DeviceNet network to the Ethernet-based PLC, HMI or SCADA for setting up a control or monitoring system. Different to the GW-7243D, the GW-7434D offers the Predefined Master connection Set function and Group 2 only Server function as a DeviceNet master, and enables accessing the DeviceNet slaves automatically and cyclically. If the PLC, HMI or SCADA would like to access the DeviceNet slaves and simultaneously communicate with the Modbus slaves or COM-based devices connected with the RS-232 or RS-485 ports of the GW-7434D, the GW-7434D can be the Modbus TCP server or VxComm server to exchange the data with those devices.

- Support maximum DeviceNet devices up to 63
- Predefined Master/Slave Connection Set
- Support one Poll, one Bit-Strobe, one COS or one Cyclic IO connection for each DeviceNet device
- Convert single Modbus TCP to multi Modbus RTU devices, setting by Utility
- Support VxComm technique for every COM ports of controllers, setting by Utility



5.10 J1939 Gateways

J1939 is the vehicle bus standard used for communication and diagnostics among vehicle components, originally by the car and heavy duty truck industry in the United States. Because of the success of applying in vehicles, J1939 has become the accepted industry standard and the vehicle network technology of choice for off-highway machines in applications such as construction, material handling, and forestry machines. It is a higher-layer protocol based on Controller Area Network (CAN), which provides serial data communications between microprocessor systems (ECU) in any kind of heavy duty vehicles. The messages exchanged between these units can be data such as vehicle road speed, torque control message from the transmission to the engine, oil temperature, and so forth.

NEW

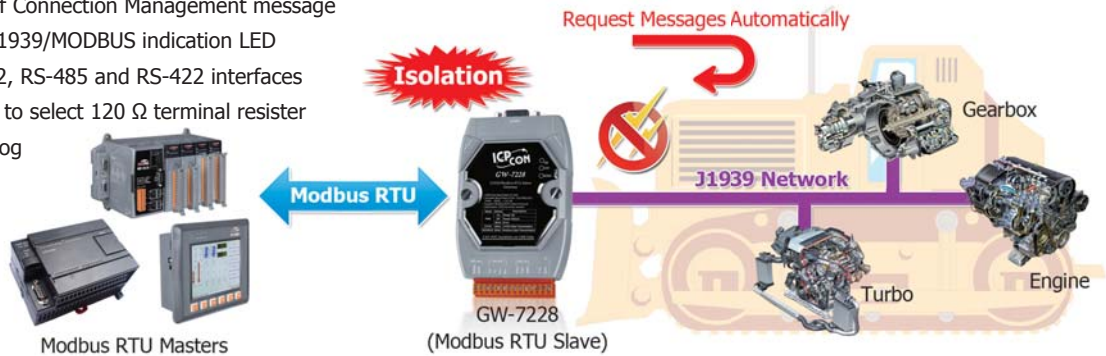
Modbus RTU Slave to J1939 Gateway

GW-7228



The GW-7228 enables the Modbus RTU master to exchange the data with the devices in the J1939 network. This module provides the Modbus slave functions on the RS-232, RS-422, and RS-485 ports so that the Modbus RTU master can easily control and monitor the J1939-based devices. If users use one of the communication ports for application, the other two ports can be used to monitor the Modbus communication situations between the Modbus master and the GW-7228. This feature is helpful for diagnosis while setting up an application system. For J1939 CAN networks, the GW-7228 supports PDU1, PDU2, broadcast and destination specific type of J1939 messages, and is widely applied in the Diesel power-train, in-vehicle networks for trucks and buses or where the Modbus RTU and J1939 protocols transformation is needed.

- Transmission and reception of all types of J1939 messages, including PDU1, PDU2, broadcast and destination specific
- Support Modbus RTU slave protocol with function codes 03, 04, 06 and 16
- Support BAM of Connection Management message
- Provide PWR/J1939/MODBUS indication LED
- Support RS-232, RS-485 and RS-422 interfaces
- Built-in jumper to select 120 Ω terminal resistor
- Built-in watchdog



Modbus TCP/RTU Slave to J1939 Gateway

GW-7238D



Similar to the GW-7228, the GW-7238D is a J1939 to Modbus master gateway. The main difference is that the GW-7238D has an Ethernet port as the Modbus TCP server, and allows connecting with up to 5 Modbus TCP clients. The GW-7238D also offers an RS-232 and RS-485 ports which are the Modbus RTU slaves and enable the Modbus RTU master to exchange the data with the devices in the J1939 network. Both the Modbus TCP server and the Modbus RTU slave functions of the GW-7238D can work simultaneously. This feature means that users can apply the GW-7238D in their applications more flexibly and more economically. For J1939 CAN networks, the GW-7238 supports PDU1, PDU2, broadcast and destination specific type of J1939 messages, and is widely applied in the various J1939-based applications.

- Transmission and reception of all types of J1939 messages, including PDU1, PDU2, broadcast and destination specific
- Support BAM of Connection Management message
- Provide PWR/J1939/MODBUS/ERR indication LEDs
- Support RS-232, RS-485 and Ethernet interfaces
- Support Modbus TCP server/RTU slave protocol with function code 03, 04, 06 and 16
- Built-in jumper to select 120 Ω terminal resistor
- Built-in watchdog
- Communication support both Modbus TCP/RTU to J1939 at the same time

