

tDS-735-UL Series

Tiny Serial-to-Ethernet Device Server with PoE

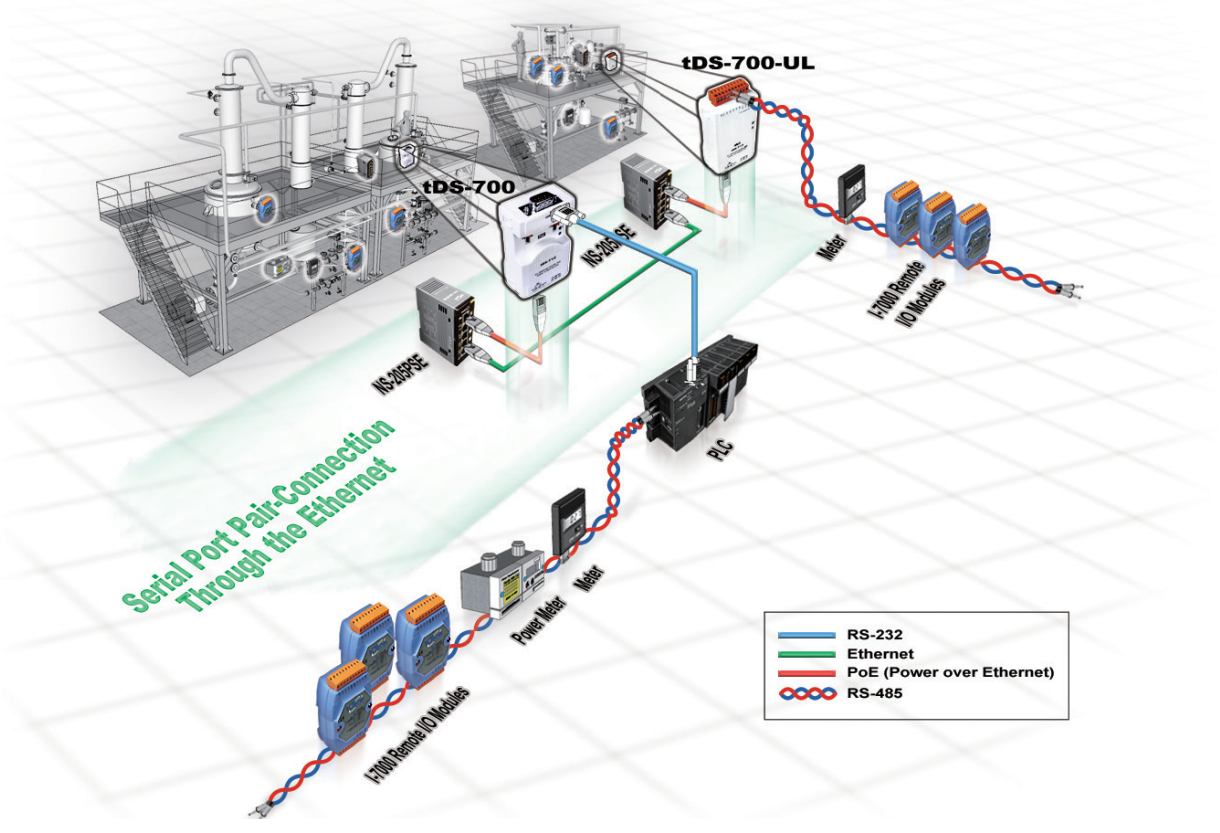
Features

- Incorporates any RS-485 serial device in Ethernet
- Application Modes: Virtual COM, TCP Server, TCP Client
- VxComm Utility supports 32/64-bit Windows 7/8/10/11/2012/2016
- Max. connections : 1 socket per serial port is suggested
- Supports pair-connection (serial-bridge, serial-tunnel) applications
- Supports UDP responder for device discovery (UDP Search)
- Tiny Web server for serial and network configuration (HTTP)
- Allows automatic RS-485 direction control

Introduction

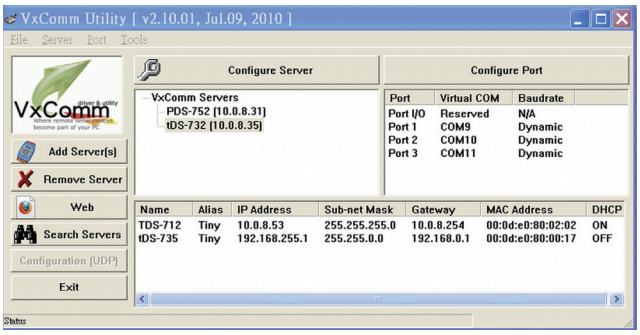
The tDS-700-UL is a series of Serial-to-Ethernet device servers designed to add Ethernet and Internet connectivity to any RS-232 and RS-422/485 device, and to eliminate the cable length limitation of legacy serial communication. By using the VxComm Driver/Utility, the built-in COM port of the tDS-700-UL 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.

Note: For multiple TCP connections on the same serial port, use PDS-700 instead.



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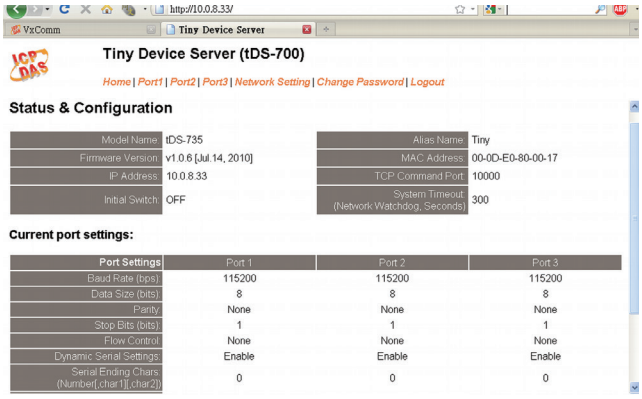
The VxComm Driver/Utility supports the most popular operating system in the world, including 32/64-bit Windows 7/8/10/11/2012/2016. **The virtual COM works transparently and is protocol independent, enabling perfect integration with your current central computer.** The utility provides an easy configuration interface that can be used to quickly create and map virtual COM ports Tto one or several tDS-700-UL 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.



The tDS-700-UL device servers can be used to create a pair-connection application (as well as serial-bridge or serialtunnel), and can then route data over TCP/IP between two serial devices, which is useful when connecting mainframe computers, servers or other serial devices that do not themselves have Ethernet capability. By virtue of its protocol independence and flexibility, the tDS-700-UL meets the demands of virtually any network-enabled application.

The tDS-700-UL features a powerful 32-bit MCU to enable efficient handling of network traffic. It also has a built-in web server that provides an intuitive web management interface to allow users to modify the settings of the module, including DHCP/Static IP, gateway/mask and serial ports.

Based on an amazing tiny form-factor, the tDS-700-UL achieves the maximum space savings that allows it to be easily installed anywhere, even directly attached to a serial device or embedded into a machine.



The tDS-700-UL series also contains a built-in CPU watchdog, which automatically resets the CPU if the builtin firmware is operating abnormally, or if there is no communication between the tDS-700-UL and the host for a predefined period of time (system timeout). This is an important feature that ensures the tDS operates continuously, even in harsh environments.



The tDS-700-UL 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 the NS-205PSE. If there is no PoE switch on site, the tDS-700 will also accept power input from a DC adapter. The tDS-700-UL 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.

The tDS-700-UL series modules have obtained UL certification, meeting strict safety standards including fire resistance, electric shock protection, and durability quirements. This ensures stability and safety across various usage environments, providing consumers with reliable quality assurance. The UTA version uses conformal coating technology that offers excellent resistance to moisture and salt spray, making it particularly suitable for coastal and high-humidity environments.

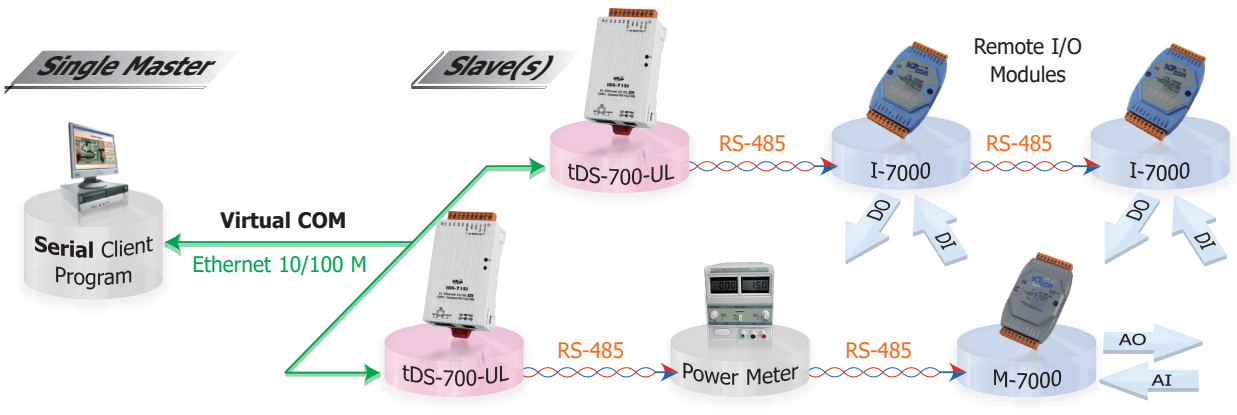
Applications

- Factory Automation
- Home Automation
- Building Automation
- Remote Diagnosis and Management

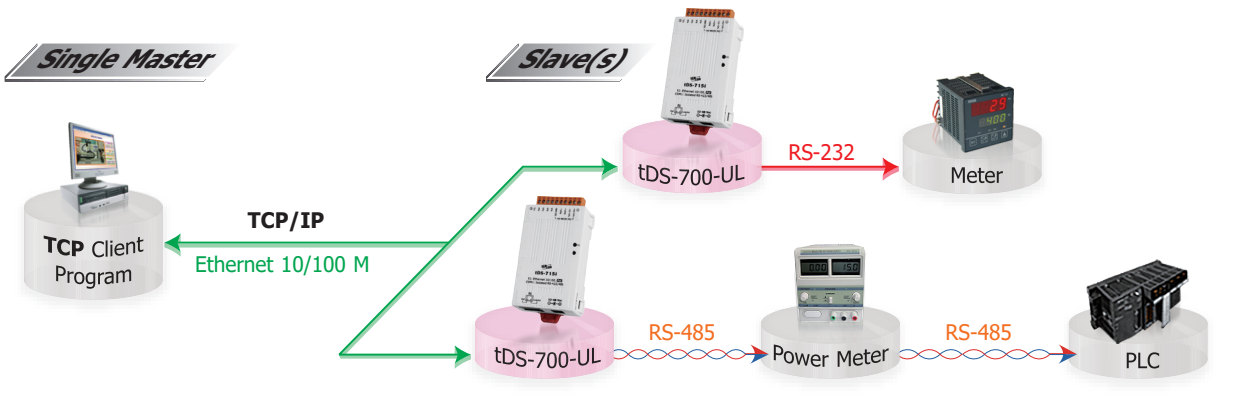


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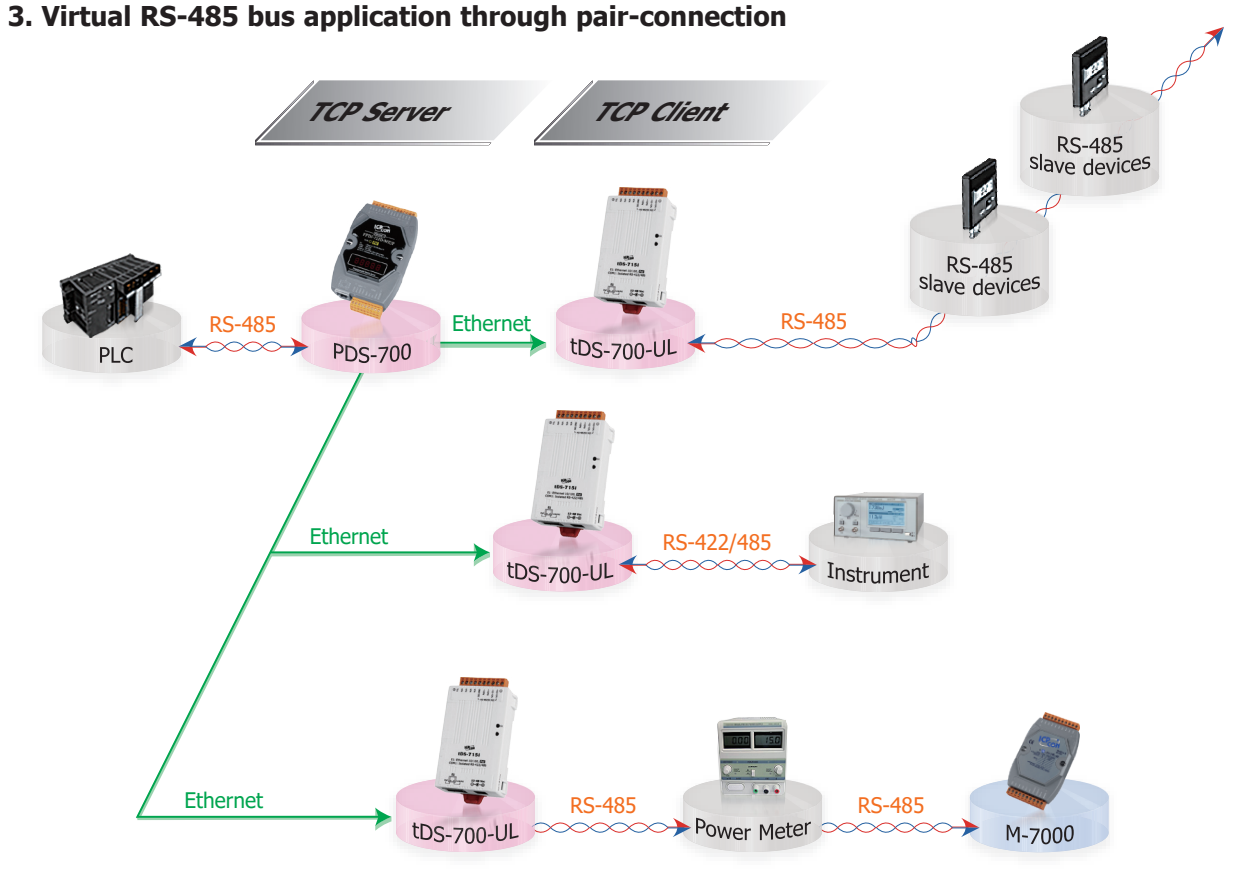
1. Access serial device via Virtual COM ports



2. Access serial device via TCP/IP socket connection



3. Virtual RS-485 bus application through pair-connection



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Specifications

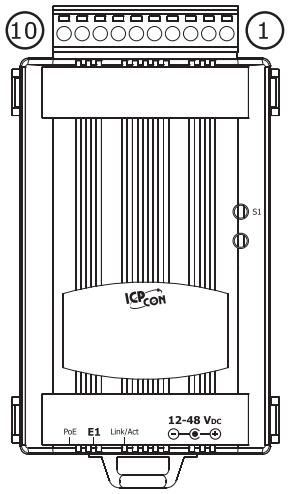
Models	tDS-735-UL , tDS-735-UL-UTA , tDS-735i-UL & tDS-735i-UL-UTA
Communication Interface	
Ethernet	10/100 Base-TX, 8-pin RJ-45 x 1, (Auto-negotiating, Auto-MDI/MDIX, LED indicator)
PoE	IEEE 802.3af, Class 1
COM Port Capability (16C550 or compatible UART)	
Ports	tDS-735-UL & tDS-735-UL-UTA: 3 x RS-485 (non-isolation) tDS-735i-UL & tDS-735i-UL-UTA: 3 x RS-485 (3000VDC Signal Isolation)
Baud Rate	115200 bps Max.
Parity	None, Odd, Even, Mark, Space
Data Bit	5, 6, 7, 8
Stop Bit	1, 2
Power	
Power Input	IEEE 802.3af, Class 1 for PoE; +12 ~ 48 VDC for DC Jack
Power Consumption	0.07 A @ 24 VDC
Mechanical	
Connector	10-pin Removable Terminal Block x 1
Dimensions (W x L x H)	52 mm x 27 mm x 95 mm
Installation	DIN-Rail mounting
Case	Plastic
Environment	
Operating Temperature	tDS-735-UL & tDS-735i-UL: -25 ~ +70 °C tDS-735-UL-UTA & tDS-735i-UL-UTA: -40 ~ +70 °C
Storage Temperature	-30 °C ~ +80 °C
Humidity	10 ~ 90% RH, non-condensing

Note: COM1 = TCP Port 10001, COM2 = TCP Port 10002, COM3 = TCP Port 10003

The UTA version has a conformal coated PCB for added protection against moisture, dust, and corrosion, making it ideal for coastal, marine, or high-humidity environments. Even with a waterproof enclosure, the coated version offers extra reliability.

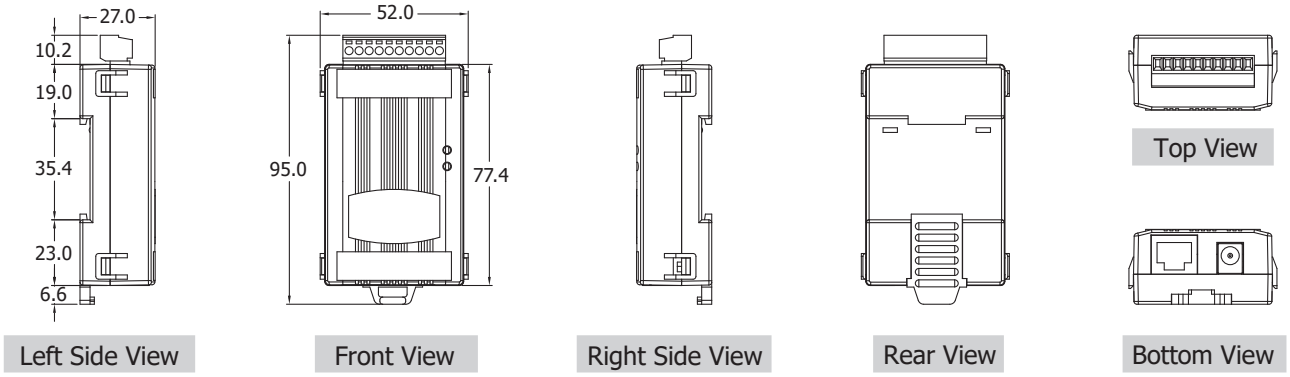
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Apparances



	10	F.G.
COM3	09	GND
	08	D3-
	07	D3+
COM2	06	GND
	05	D2-
	04	D2+
COM1	03	GND
	02	D1-
	01	D1+

Dimensions (Units: mm)



Ordering Information

	Includes DC connector to 2-wire power cable, 0.3 M (CA-002-UL)
tDS-735-UL CR	Tiny (3x RS-485) Serial-to-Ethernet Device Server with PoE (RoHS)
tDS-735-UL-UTA CR	Tiny (3x RS-485) Serial-to-Ethernet Device Server with PoE (RoHS) (-40 °C Operating Temperature)
tDS-735i-UL CR	Tiny (3x Isolated RS-485) Serial-to-Ethernet Device Server with PoE (RoHS)
tDS-735i-UL-UTA CR	Tiny (3x Isolated RS-485) Serial-to-Ethernet Device Server with PoE (RoHS) (-40 °C Operating Temperature)

Accessories

UP0061D-12PA58G CR

Wall mount power supply; Input range 90-240VAC; Output 12 VDC/0.5 A, 6 W; two pins USA plug (RoHS)



NS-205PSE CR

Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch (RoHS)



NS-205PSE-24V CR

Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch; 24 VDC Input (RoHS)



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