ICP Electronics Australia Pty Ltd





Tiny Serial-to-Ethernet Device Server

tDS-700/tDS-2200 Series

Tiny Serial-to-Ethernet Device Server





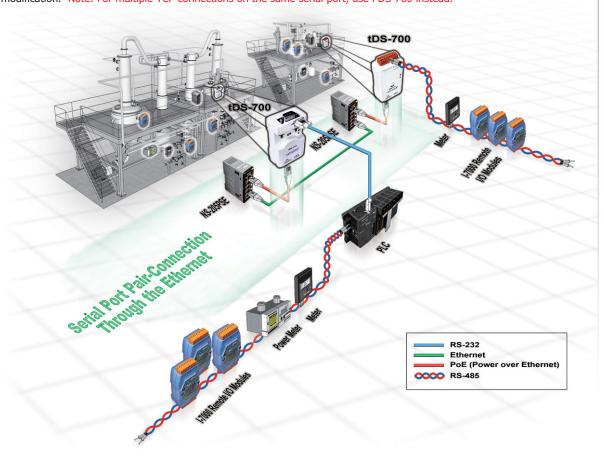
Features >>>>

- Incorporates any RS-232/422/485 serial device in Ethernet
- Application Modes: Virtual COM, TCP Server, TCP Client
- Virtual COM for 32/64-bit Windows XP/7/10/2012/2016
- Data Packing Modes: Length, Delimiter, timeout, Chartimeout.
- 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) Tiny form-factor and low power consumption

- Contains a 32-bit MCU that efficiently handles network traffic
- tDS-700/tDSM-712: 10/100 Base-TX Ethernet, RJ-45 × 1
- tDS-2200: 2-port Ethernet Switch (LAN Bypass for Daisy-
- Redundant power inputs: PoE and DC jack
- Allows automatic RS-485 direction control
- Power or Signal isolation for i versions
- ±4 kV ESD protection
- tDSM-712 is the tDS-712 with Metal Case
- Male DB-9 or terminal block connector for easy wiring
- RoHS compliant & no Halogen

Introduction

The tDS-700/tDS-2200 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/tDS-2200 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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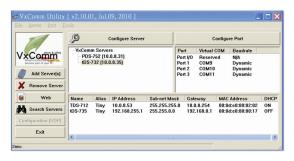
The VxComm Driver/Utility supports the most popular operating system in the world, including 32-bit and 64-bit Windows XP/7/10/2012/2016. The virtual COM works transparently and is protocol independent, enabling perfect integration with your current central computer. The utility provides an easy configuration interface that can be used to quickly create and map virtual COM ports to one or several tDS-700/tDS-2200 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/tDS-2200 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/tDS-2200 meets the demands of virtually any network-enabled application.

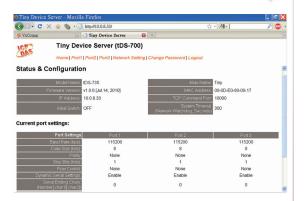
The tDS-2200 series has a built-in two-port Ethernet switch to implement daisy-chain topology. The cabling is much easier and total costs of cable and switch are significantly reduced. LAN Bypass feature guarantees the Ethernet communication if tDS-2200 loses its power.

The tDS-700/tDS-2200 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/tDS-2200 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/tDS-2200 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/tDS-2200 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/tDS-2200 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/tDS-2200 will also accept power input from a DC adapter. The tDS-700/tDS-2200 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-712 is equipped with a male DB-9 connector, while other models are equipped with a removable terminal block connector to allow easy wiring, and also supports automatic RS-485 direction control when sending and receiving data.

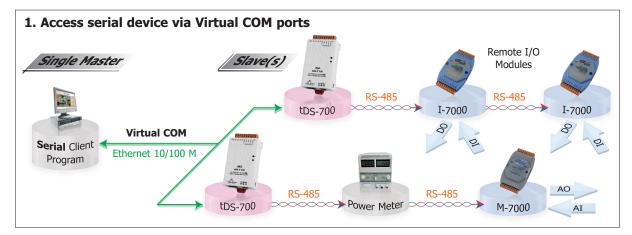


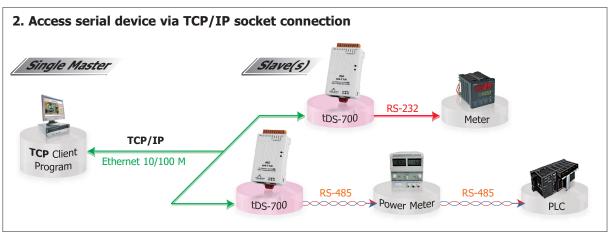
Comparison Table	tDS-700 Series	PDS-700 Series	
Ethernet	10/100 M, PoE	10/100 M	
Programmable	-	Yes	
Virtual COM	Yes	Yes	
Virtual I/O	_	Yes	
DHCP	Yes	Yes	
Web Configuration	Yes	Yes	
UDP Search	Yes	Yes	
Multi-client	_	Yes	
Remarks	Cost-effective	-	

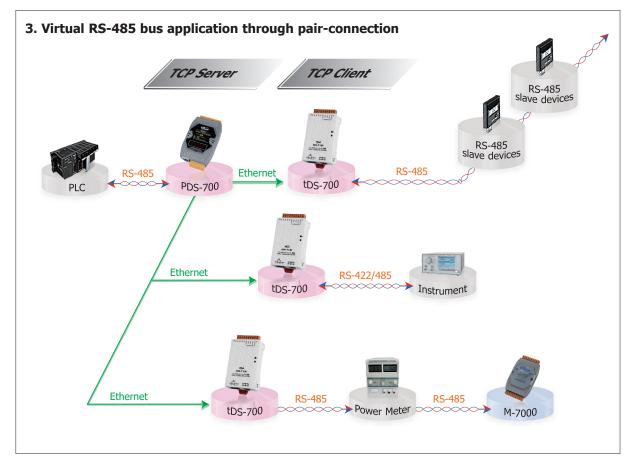
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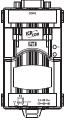
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System Specifications

Models		tDS-712 tDS-712i tDSM-712 tDS-2212	tDS-722 tDS-722i	tDS-732 tDS-732i	tDS-715 tDS-715i tDS-2215	tDS-725 tDS-725i tDS-2225	tDS-735 tDS-735i tDS-2235	tDS-718 tDS-718i tDS-2218	tDS-718i-D	tDS-724 tDS-724i	tDS-734 tDS-734i
System											
CPU		32-bit MCU									
Communication	on Interface										
Ethernet	700 Series	10/100 Base-	ΓX, 8-pin RJ-4	5 x 1, (Auto-	negotiating,	Auto-MDI/MI	DIX, LED indic	ator)			
Luieniei	2200 Series	2-Port 10/100	Base-TX Ethe	ernet Switch	with LAN Byp	oass, RJ-45 x	2 (Auto-nego	tiating, Auto-	MDI/MDIX, LEI	O indicator)	
PoE		IEEE 802.3af,	Class 1								
COM Port		1 × RS-232	2 × RS-232	3 × RS-232	1 × RS-422/ RS-485	2 × RS-485	3 × RS-485	1 × RS-232	or RS-422/485	1 × RS-485 2 × RS-232	
Self-Tuner			-		Yes, autom	atic RS-485 d	lirection contr	ol			
Power Isola	tion	1000 VDC for	tDS-722i/	732i /718i-	D only						
Signal Isola	tion	3000 VDC for	tDS-712i/	715i/ 725i/	735i/ 718	i /724i /734	i only				
ESD Protectio	n	+/-4 kV									
COM Port Cap	ability (16C55	50 or compatible UART)									
Baud Rate		115200 bps M	lax.								
Data Bit		5, 6, 7, 8									
Parity		None, Odd, E	ven, Mark, Sp	ace							
Stop Bit		1, 2									
Power											
Power Input		IEEE 802.3af, Class 1 for PoE +12 ~ 48 Vpc for DC Jack									
Power Consur	nption	0.07 A @ 24 \	/DC								
Mechanical											
Connector 700 Series 2200 Series		Male DB-9 x 1 10-pin Removable Terminal Block x 1 10-pin Removable Terminal Block x 1 10-pin Removable Terminal Block x 1									
		5-pin Removable Terminal Block x 3									
Dimensions	700 Series	52 mm x 95 mm x 27 mm (tDS-712: 52 mm x 90 mm x 27 mm) (tDSM-712: 75 mm x 83 mm x 24 mm)									
(W x H x D)	2200 Series	90mm x 110mm x 33mm (without connectors)									
Installation		DIN-Rail mounting									
Case		Metal for tDSI	ሳ-712; Plastic	for others.							
Environment											
Operating Ter	nperature	-25 °C ∼ +75	°C								
Storage Temp	erature	-30 °C ~ +80	°C								
Humidity		10 ~ 90% RH	, non-conden	sing							

Pin Assignments



tDS-712/tDS-712i/tDSM-712								
	09	N/A						
	80	CTS1						
	07	RTS1						
COM1	06	N/A						
(Male	05	GND						
DB-9)	04	N/A						
	03	TxD1						
	02	RxD1						
	01	N/A						



	tDS-718i-D									
_	Termina	No.	RS-232	RS-422	RS-485					
		09	N/A	N/A	N/A					
0 2		80	CTS	N/A	N/A					
	COM1	07	RTS	N/A	N/A					
\ 		06	N/A	N/A	N/A					
	(Male	05	GND	GND	GND					
	DB-9)	04	N/A	RxD-	N/A					
		03	TxD	RxD+	N/A					
		02	RxD	TxD+	Data+					
		01	N/A	TxD-	Data-					

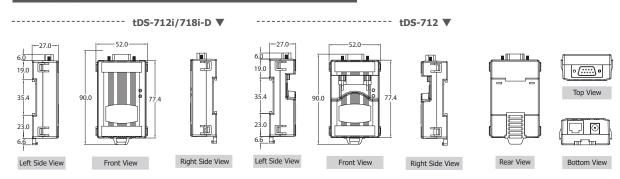
	10	F.G.		10	F.G.		10	F.G.		10	F.G.
	09	CTS2		09	GND		09	GND		09	N/A
COM2	08	RTS2	COM3	08	RxD3	COM3	08	D3-	RS-232	08	GND
	07	RxD2		07	TxD3		07	D3+		07	RxD1
	06	TxD2		06	GND		06	GND		06	TxD1
	05	GND	COM2	05	RxD2	COM2	05	D2-		05	GND
	04	CTS1		04 TxD2	TxD2		04	D2+	DC 405/	04	RxD1-
COM1	03	RTS1		03	GND		03	GND	RS-485/ RS-422	03	RxD1+
	02	RxD1	COM1 02	RxD1	COM1	02	D1-	113 122	02	TxD1-/D1-	
	01	TxD1		01	TxD1		01	D1+		01	TxD1+/D1+
+D0	-71	5/+DC_715i	+D	C_72	5/+DC-725i	+D	C_72	1/+DC-724i	+D9	2-734	/+DC_734i
tD9		5/tDS-715i	tD	_	5/tDS-725i	tD		1/tDS-724i	tD5		/tDS-734i
tD9	5-71! 10	5/tDS-715i F.G.	tD	S-725 10	5/tDS-725i F.G.	tD	S-72 ⁴ 10	1/tDS-724i F.G.	tDS	5-734 10	F.G.
tDS			tD	_		tD			tDS		
tDS	10	F.G.	tD	10	F.G.	tD	10	F.G.	tDS	10	F.G.
tDS	10 09	F.G. N/A	tD	10 09	F.G. N/A	tD	10 09	F.G. N/A		10 09	F.G. GND
tDS	10 09 08	F.G. N/A N/A	tD	10 09 08	F.G. N/A N/A	tD COM2	10 09 08	F.G. N/A CTS2		10 09 08	F.G. GND RxD3
tDS	10 09 08 07	F.G. N/A N/A N/A	tD COM2	10 09 08 07	F.G. N/A N/A N/A		10 09 08 07	F.G. N/A CTS2 RTS2		10 09 08 07	F.G. GND RxD3 TxD3
	10 09 08 07 06	F.G. N/A N/A N/A N/A		10 09 08 07 06	F.G. N/A N/A N/A GND		10 09 08 07 06	F.G. N/A CTS2 RTS2 GND	COM3	10 09 08 07 06	F.G. GND RxD3 TxD3 GND
RS-485/	10 09 08 07 06 05	F.G. N/A N/A N/A N/A GND		10 09 08 07 06 05	F.G. N/A N/A N/A GND D2-		10 09 08 07 06 05	F.G. N/A CTS2 RTS2 GND RxD2	COM3	10 09 08 07 06 05	F.G. GND RxD3 TxD3 GND RxD2
	10 09 08 07 06 05 04	F.G. N/A N/A N/A N/A GND RxD1-		10 09 08 07 06 05 04	F.G. N/A N/A N/A GND D2- D2+		10 09 08 07 06 05 04	F.G. N/A CTS2 RTS2 GND RxD2 TxD2	COM3	10 09 08 07 06 05 04	F.G. GND RxD3 TxD3 GND RxD2 TxD2



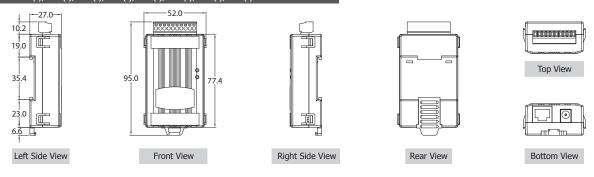


Dimensions (Unit: mm)

tDS-712/712i/718i-D



tDS-715(i)/718(i)/722(i)/725(i)/732(i)/735(i)/724(i)/734(i)



Ordering Information

Note: ▶ **Available soon**

Non-Isolated	Isolated	2-port Ethernet Switch	Serial Device Server: Includes one CA-002 cable.
tDS-712 CR	tDS-712i CR	▶tDS-2212	Tiny Device Server with PoE and 1 RS-232 Port (RoHS)
tDS-722 CR	tDS-722i CR	-	Tiny Device Server with PoE and 2 RS-232 Ports (RoHS)
tDS-732 CR	tDS-732i CR	-	Tiny Device Server with PoE and 3 RS-232 Ports (RoHS)
tDS-715 CR	tDS-715i CR	▶tDS-2215	Tiny Device Server with PoE and 1 RS-422/485 Port (RoHS)
tDS-725 CR	tDS-725i CR	▶tDS-2225	Tiny Device Server with PoE and 2 RS-485 Ports (RoHS)
tDS-735 CR	tDS-735i CR	▶tDS-2235	Tiny Device Server with PoE and 3 RS-485 Ports (RoHS)
tDS-718 CR	tDS-718i CR tDS-718i-D CR	▶tDS-2218	Tiny Device Server with PoE and 1 RS-232/422/485 Port (RoHS) (10-pin Terminal Block Conntecor for tDS-718/718i, Male DB-9 Conntecor for tDS-718i-D)
tDS-724 CR	tDS-724i CR	-	Tiny Device Server with PoE, 1 RS-485 and 1 RS-232 Ports (RoHS)
tDS-734 CR	tDS-734i CR	-	Tiny Device Server with PoE, 1 RS-485 and 2 RS-232 Ports (RoHS)
tDSM-712 CR	-	-	Tiny Device Server with PoE and 1 RS-232 Port (Metal case, RoHS)

Accessories

(A-002	DC connector to 2-wire power cable, 0.3 M
CA-0915	Male DB-9 to Female DB-9 Cable, 1.5 m
CA-0910F	Female DB-9 to Female DB-9 Cable, 1.0 m
CA-0910N	DB-9 Female-Female 3-wire Null Modem Cable, 1M
CA-PC09F	DB-9 Female Connector with Plastic Cover
FRA05-S12-SU CR	12V/0.58A (max.) Power Supply (RoHS, for tDS/tGW-700)
DIN-KA52F CR	24V/1.04A, 25 W Power Supply with DIN-Rail Mounting (RoHS, for NS-205 and NS-205PSE-24V)
DIN-KA52F-48 CR	48V/0.52A, 25 W Power Supply with DIN-Rail Mounting (RoHS, for NS-205PSE)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
NS-205PSE-24V CR	Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch; 24 VDC Input (RoHS)