DPA301D00

DevicePort Advanced Mode
Ethernet enabled 1-port
RS-232/422/485 Port Replicator
(Screw Bolt Type)

Introduction

DPA301D00 allows users to expand 1 RS-232/422/485 port over Ethernet connection, and it works on any windows based desktop, thin client, laptop, All-in-one, and tablet PC computers. With SUNIX DPL2000Q High-Performance Ethernet-UART controller and exclusive I/O Redirection Technology, DevicePort creates physical COM ports that support real time data communication, Smart COM on/off-line deployment, and Ethernet-COM port hot-plug capability; user can expand RS-232/422/485 COM port easily without complex software configuration. SUNIX DevicePort improves solution deployment efficiency to achieve greater reliability in commercial and industrial automation applications.

Features

- Expands 1 independent RS-232/422/485 serial port over Ethernet networking
- Built-in SUNIX DevicePort DPL2000Q High-Performance Ethernet-UART controller
- SUNIX DevicePort proprietary Ethernet I/O Redirection Technology
  - Serial communication with real time data transmit and receive
  - Physical COM port accessible via Windows Device Manager
  - Up to 255 COM ports can be setup on a windows system simultaneously
- Accessing Legacy COM port by using existing software and application
- Flexible port configuration with DevicePort on/off-line Smart COM deployment
  - Keeps physical COM port in system when DevicePort under off-line mode
  - Serial signal staging until DevicePort recovery back to on-line mode
- Built-in single 10/100 Ethernet ports for Ethernet cascading capability
- Low power consumption design of 2.5W for meeting Green Environmental movement
- 15KV ESD protection for all serial signal lines meeting IEC-61000-4-2 standard
- CE, FCC, VCCI, C-Tick, BSMI and RoHS certified, with Microsoft WHQL approval

Ver1.0 Dec. 2015

Specifications

Serial Communication

Interface	RS-232/422/485	**Baud rate**	50bps ~921.6Kbps
Controller	SUNIX DPL2000Q	**Stop bit**	1, 1.5, 2
BUS	Ethernet	**Parity**	even, odd, none, mark, space
No. of Port	1-port	**Flow Control**	Xon/Xoff (software)
FIFO	1Kbyte Hardware / per port	**Connector**	DB9 Male
Signal	RS-232: DCD, TxD, RxD, RTS, CTS, DTR, DSR, GND, RI RS-422: TxD+, TxD-, RxD+, RxD-, GND RS-485: Data+, Data-, GND		
Protection	±15KV ESD IEC6000-4-2 Air Discharge ±8KV ESD IEC61000-4-2 Contact Discharge ±4KV ESD IEC61000-4-2 Level2 Line-to-Line		

Ethernet Communication

Number of Ports	1-port, Ethernet Switch Port
Speed	10/100 Mbps, auto MDI/MDIX
Connector	RJ45
Magnetic Isolation Protection	1.0K Built-in

Power Requirements

Input Voltage	5 VDC
Power Consumption	2.5W @ 5VDC
Connector	DC-Jack

Driver Support

Microsoft Client	XP (X86) / 7 / 8 / 8.1 / 10 (X86/X64)
Microsoft Server	2003 / 2008 / 2012R2 (X64)

Regulatory Approvals

Hardware EMC	● EUR: CE EN55022 Class B, EN55024 ● US: FCC Part 15 Class B ● TAIWAN: BSMI: CNS13438 ● AS/NZS: C-Tick: CISPR22 AS/NZS ● JAPAN: VCCI
Software Driver	Microsoft WHQL Windows ● Microsoft Client: XP (X86)/7/8/8.1 (X86/X64) ● Microsoft Server: 2003/2008/2012R2 (X64)

Environment

Operation Temperature	0 to 60°C (32 to 140°F)
Operation Humidity	5 to 95% RH (non-condensing)
Storage Temperature	-20 to 85°C (-4 to 185°F)

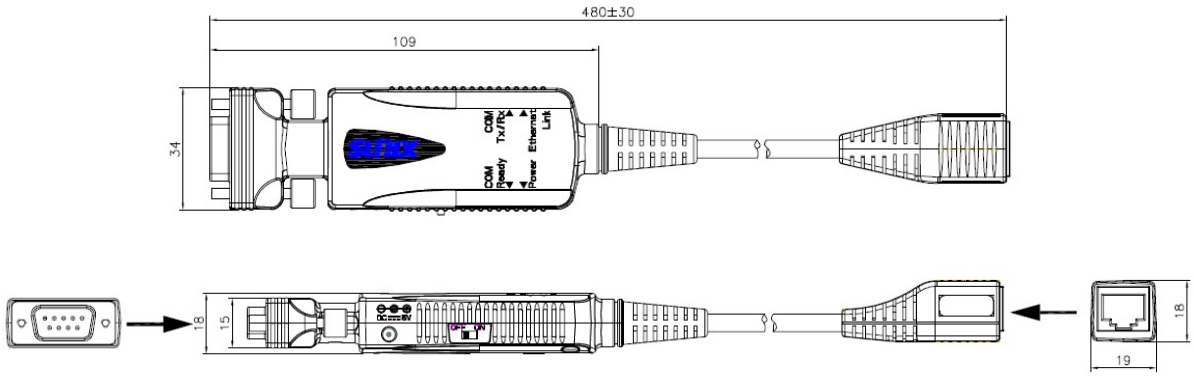
Ver1.0 Dec. 2015

Physical Characteristics

Housing	PC
Weight	67g
Power Cable Length	Power Jack to USB Type A Male Cable, ϕ3.5*ϕ1.35,120 cm
Lan Cable Length	315mm±30mm

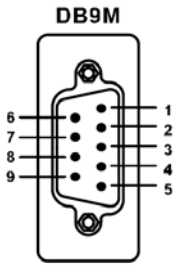
Dimensions

480 x 34 x 18 (cm), 18.9 x 1.3 x 0.7 (inch)



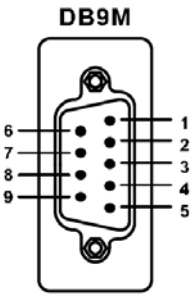
Pin Assignment

■ RS-232



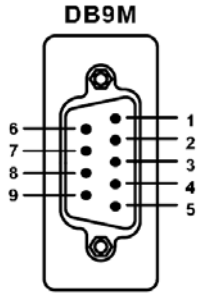
PIN	DB9M
DCD	1
RxD	2
TxD	3
DTR	4
GND	5
DSR	6
RTS	7
CTS	8
RI	9

■ RS-422



PIN	DB9M
TxD-	1
TxD+	2
RxD+	3
RxD-	4
GND	5

■ RS-485



PIN	DB9M
Data--	1
Data+	2
-	3
-	4
GND	5

Packing Contents

- DPA301D00 - Ethernet enabled 1-Port RS-232/422/485 Port Replicator (Screw Bolt Type)
- Power Jack to USB Type A Male Cable
- AC/DC Power Adapter 5VDC@1A
- Quick installation guide

Product Family

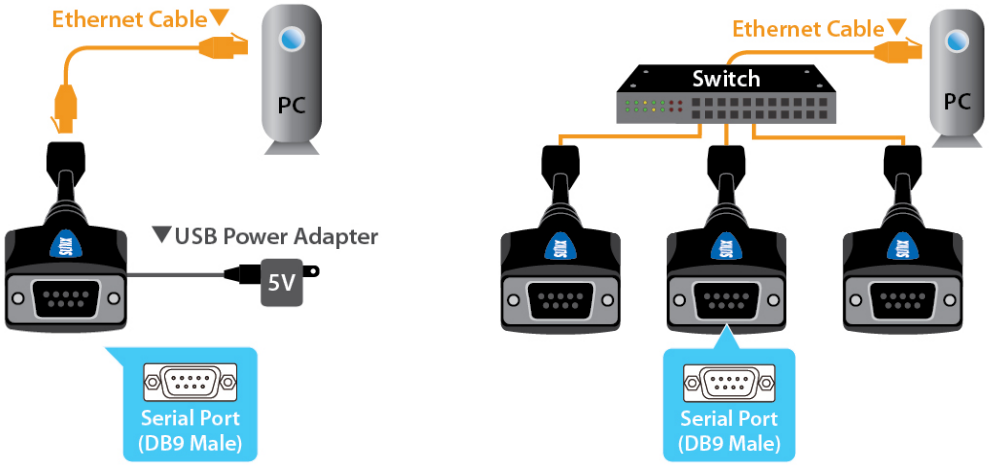
■ RS-232/422/485

Mode	Port	Connector	Baud Rate	ESD Protection	Surge Protection	Isolation Protection	Model
Standard	8	DB9M	921.6Kbp	±15KV		-	DPA308G00
	8	DB9M	921.6Kbp		2KV	1.5KV	DPA308GSI
	4	DB9M	921.6Kbp		-	-	DPA304G00
	4	DB9M	921.6Kbp		2KV	1.5KV	DPA304GSI
	2	DB9M	921.6Kbp		-	-	DPA302G00
	2	DB9M	921.6Kbp		2KV	1.5KV	DPA320GSI
	1	DB9M	115.2Kbp		-	-	DPA301D00
	1	DB9M	115.2Kbp		-	-	DPA301DZ0

Tech Fourm

1. Expand legacy I/O ports over Ethernet connection

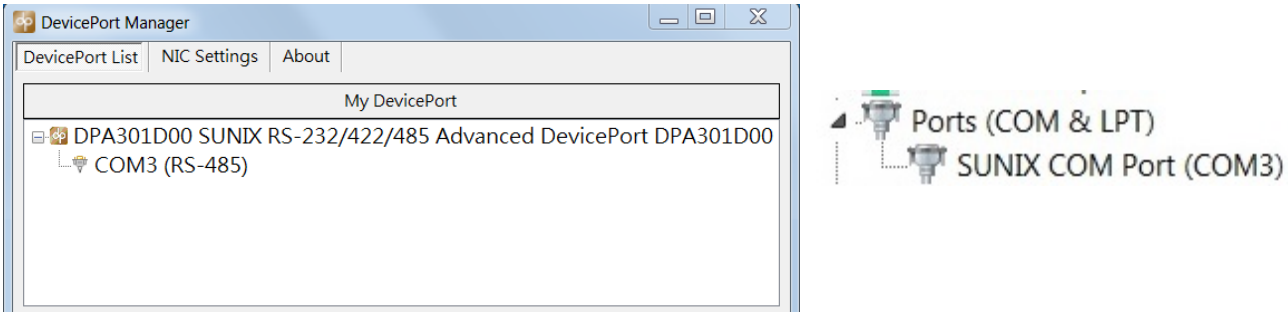
The growth and advances of small form factor PC continues to meet challenges and open up new opportunities. SUNIX DevicePort products are specifically developed to meet such requirements and to replace current add-on card solutions. Users can expand legacy I/O ports over Ethernet connection that improves solution deployment efficiency to achieve greater reliability in commercial and industrial automation applications.



DevicePort Advanced Mode supports both Direct-Link and Ethernet-Link connections

2. SUNIX DevicePort proprietary Ethernet I/O Redirection Technology

With Ethernet hot-plug and system auto-detect capability, user can expand RS-232/422/485 COM port easily without complex software configuration. Just simply plug in the RJ45 Ethernet cable between SUNIX DevicePort and PC Host, the computer system will create physical COM ports automatically with real time data transmit and receive communication. User can easily access the port by using existing software application, and TCP socket protocol re-compiling are not necessary.



DevicePort supports physical COM port mapping over Ethernet connection

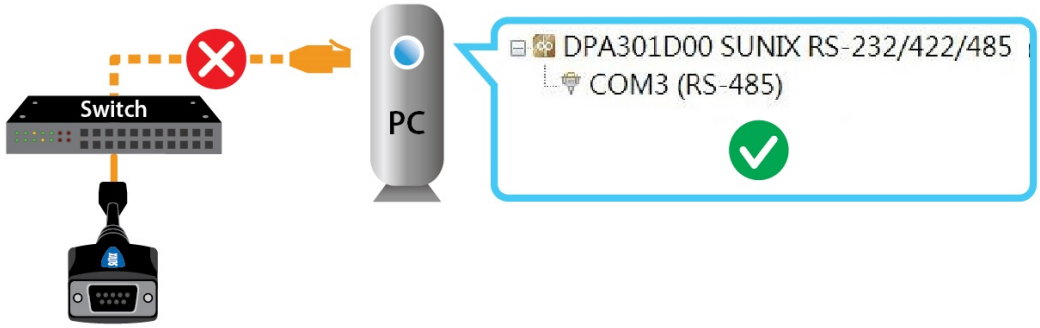
Note: Ethernet I/O Redirection Technology is SUNIX proprietary protocol for COM and digital I/O expansion over Category-5/6 Ethernet cable.

3. Smart COM Off-Line Deployment

SUNIX DevicePort Advanced mode supports off-line mapping feature that able to keep hardware COM port resources within the system device manager even when DevicePort being disconnected from the network. There are two major benefits on this Off-Line feature:

Ethernet Hot-Plug and Plug-N-Play capability - SUNIX DevicePort will create or remove physical COM ports automatically from the system resources. However, most application software does not allow hardware COM to drop when specific ports are opened. Under certain harsh network environment scenario, to prevent application software to crash, DevicePort off-line mapping feature will keep hardware COM port address within the system device manager when DevicePort being disconnected from the network. After DevicePort is re-connected back to the network, data communications will recover back to the same resources automatically.

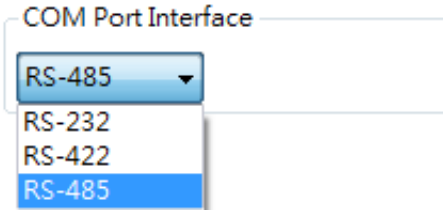
Secondly, DevicePort off-line mapping feature can also use to deploy to the system architecture design. System administrator can setup and create COM port right at the application software without physically making Ethernet connection to DevicePort. SUNIX will provide corresponding API function library which allows software developers to easily develop their programs to manipulate any serial COM communication.



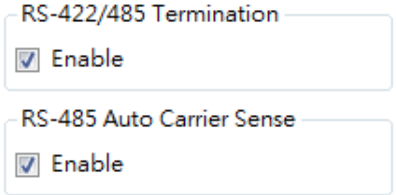
DevicePort COM ports keep alive in the system without DevicePort connecting

4. Convenient user interface design

User can select RS-232 or RS-422 or RS-485 interface for each COM port.

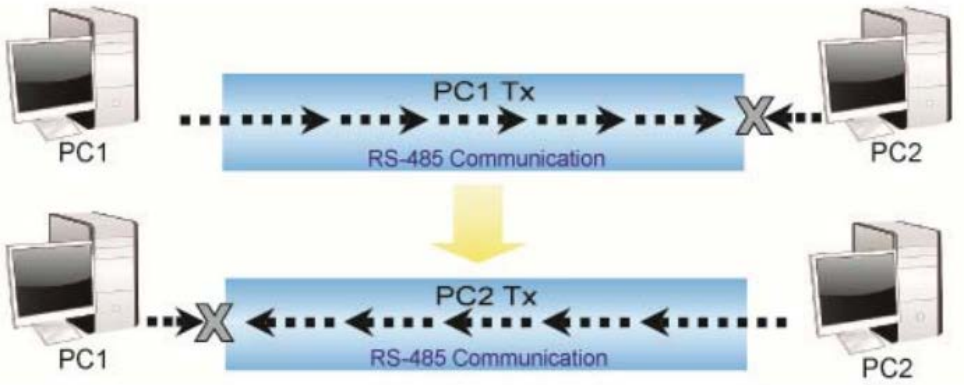


User can enable RS-422/485 Termination or RS-485 Auto Carrier Sense for each COM port.



5. RS-485 ACS Technology

RS-485 ACS Technology Auto Carrier Sense (ACS) technology is the data flow control under RS-485 half duplex (one-way traffic) communicating. It manages data flow between computers or devices or between nodes in a RS-485 network, so that the data can be handled at an efficient pace.

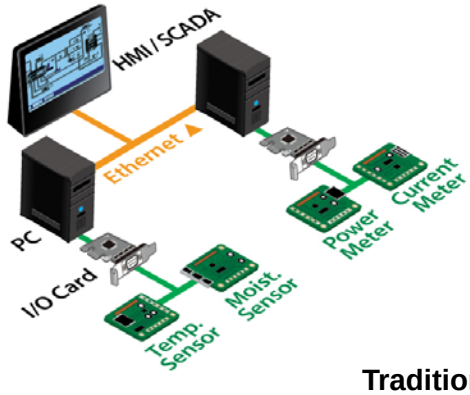


Auto Carrier Sense (ACS™) technology will check the status of RS-485 communication bus. If the bus is idle, it starts transmission. If the bus is not idle (some data flows in the bus), then it will postpone the transmission of UART until the bus is idle. Due to the reduction of TX/RX packet conflicting on RS-485 one-way traffic bus, it will enhance better system performance and RS-485 communication ability. SUNIX recommend enabling this feature.

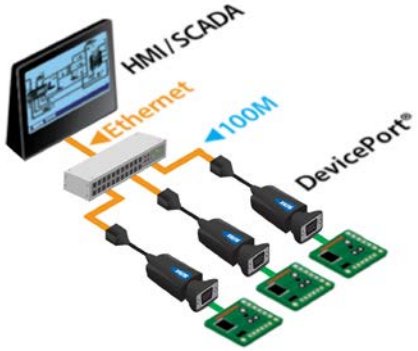
Application

DevicePort on Data Acquisition

Traditional data collection which in the form of waveforms, on/off signals, or temperature readings have been greatly improved by the Ethernet networking feature which allows systems to be more distributed, and remote monitoring is also possible. With SUNIX DevicePort, data acquisition infrastructure is from a distributed and remotely monitored system, the best approach in deploying a distributed Ethernet-based data acquisition system is to create a device link through daisy-chain topology to save implementation costs, improve deployment efficient in commercial and industrial automation applications.



Traditional



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DevicePort Mobile I/O Redirection Technology

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