

# DevicePort Ethernet enabled 1-port RS-232/422/485 Port Replicator

## Quick Installation Guide

First Edition

www.sunix.com

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## Driver & Manual Download :

Please visit SUNIX website <http://www.sunix.com> by searching keyword "DevicePort" or "DPAS" for detail manual and driver update.

## Introduction

SUNIX DevicePort is the ideal choice to enable your current Legacy I/O devices networking. User can expand RS-232 (RS-422/485) COM port on PC windows based system over Ethernet connection. 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, Device Sharing, and Ethernet-COM port hot-plug capability; user can expand RS-232 (RS-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.

## Package Checklist

Please Check if the following items are present and in good condition upon opening your package. Contact your vendor if any item is damaged or missing.

1. SUNIX DevicePort product
2. Quick Installation Guide
3. Power Jack to USB TyepA Male Cable, 120cm (4ft.)

By scanning QR code on the product to get latest driver, firmware, user manual, and product information update.

Download driver: Searching keyword "DevicePort" or "DPAS" on SUNIX website <http://www.sunix.com>.



## Features

- Expands single RS-232 (RS-422/485) serial ports 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 transmits and receives.
  - 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.
- SUNIX DevicePort proprietary Ethernet I/O Redirection Technology.
  - Auto connection and mapping with MAC address bound.
  - Keeps physical COM port in system when DevicePort under off-line mode.
  - Serial signal staging until DevicePort recovery back to on-line mode
- Low power consumption design for Green Environment.
- 15KV ESD protection for all serial signals meets IEC-61000-4-2 standard.
- Device sharing feature enables connected peripheral switching between multiple hosts.
- Built-in single 10/100 Ethernet port for Ethernet 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

Note: Ethernet I/O Redirection technology is SUNIX proprietary protocol for COM, LPT, and digital I/O expansion over category6/5 Ethernet cable.

## Specification

### Serial Communication

|             |  |              |   |
|-------------|--|--------------|---|
| Interface   | RS-232 (RS-422/485)<br>(Product Dependent)   | Baud rate    | 50bps ~ 115.2Kbps<br>(Optional for 921.6Kpbs) |
| 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<br>RS-422: TxD+, TxD-, RxD+, RxD-, GND<br>RS-485: Data+/-, GND<br>(Product Dependent) |              |   |
| Protection  | ±15KV ESD IEC6000-4-2 Air Discharge<br>±8KV ESD IEC61000-4-2 Contact Discharge<br>±4KV ESD IEC61000-4-2 Level2 Line-to-Line              |              |   |

### Ethernet Communication

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

### Power Requirements

|                   |  |
|-------------------|--|
| Input Voltage     | 5VDC   |
| Power Consumption | 2.5W @ 5VDC (board only without power output to serial device) |
| 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<br>- US: FCC Part 15 Class B<br>- TAIWAN: BSMI: CNS13438<br>- AS/NZS: C-Tick: CISPR22 AS/NZS<br>- JAPAN: VCCI |
| Software Driver | Microsoft WHQL Windows<br>- Microsoft Client: XP / 7 / 8 / 8.1 (X86/X64)<br>- Microsoft Server: 2003 / 2008 / 2012R2 (X64)                       |

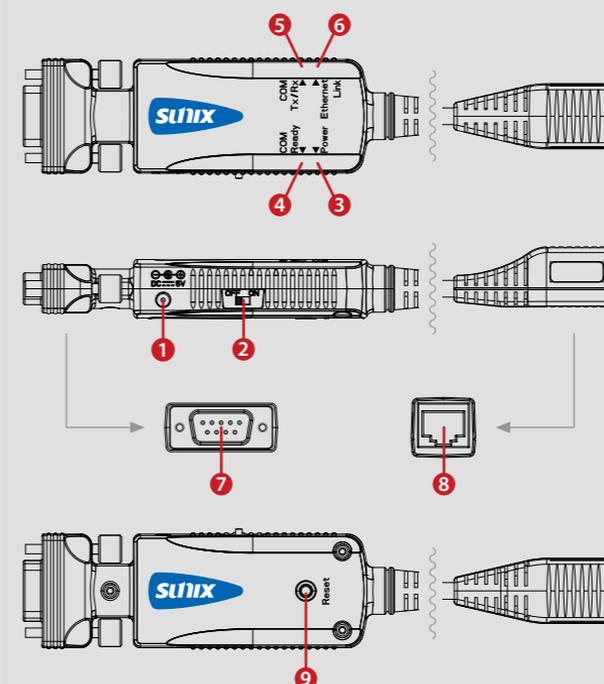
### Environment

|                       |                              |
|-----------------------|------------------------------|
| 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)    |

## Hardware Guide

| No. | Function                  | Descriptions   |
|-----|---------------------------|--|
| 1   | Power DC Jack             | Input DC Power +5VDC@ 2.5W                           |
| 2   | Power Switch              | Power Switch ON/OFF                                  |
| 3   | Power LED (Green)         | ACT when power on                                    |
| 4   | Mapping LED (Green)       | ACT when COM port mapping ready in system            |
| 5   | Tx/Rx Data LED (Green)    | ACT when serial COM port Receive/ Transmit data      |
| 6   | Ethernet Link LED (Green) | Ethernet connection Indication                       |
| 7   | COM Port                  | COM Port (DB9 Male Type)                             |
| 8   | Ethernet Port             | 10/100M Ethernet connection (RJ45 Type)              |
| 9   | Reset Button              | Use Reset Button to restore factory default settings |

### 1-port Model (DB9M type)



## Pin Assignment

COM port pin assignments for SUNIX DevicePort: (Product Dependent)

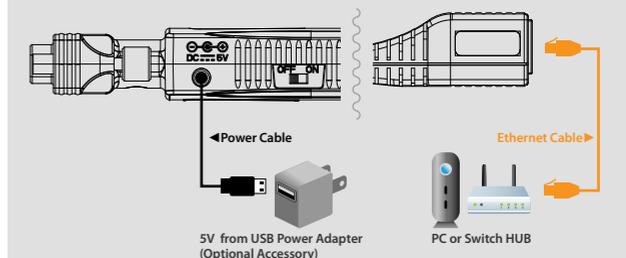
|       |  |            |       |       |      |      |     |     |     |     |    |
|-------|--|------------|-------|-------|------|------|-----|-----|-----|-----|----|
| DB9M: |  |            |       |       |      |      |     |     |     |     |    |
|       |  | <b>PIN</b> | 1     | 2     | 3    | 4    | 5   | 6   | 7   | 8   | 9  |
|       |  | RS-232     | DCD   | RxD   | TxD  | DTR  | GND | DSR | RTS | CTS | RI |
|       |  | RS-422     | TxD-  | TxD+  | RxD+ | RxD- | GND | -   | -   | -   | -  |
|       |  | RS-485     | Data+ | Data- | -    | -    | GND | -   | -   | -   | -  |

## Hardware Installation

The hardware installation of SUNIX DevicePort Advanced Mode product is easy to carry out. Follow the steps below to connect the related devices.

### Step1. Connect power from USB power cable or power adapter.

Connect the single DC output connector of the power adapter to the power jack on the back of the SUNIX DevicePort. You can use enclosed USB cable to connect external +5VDC power from PC's USB port or an AC/DC power adapter connection from AC outlet.



### Step2. Connect SUNIX DevicePort to PC or Ethernet network.

Attach one end of the Ethernet cable with RJ-45 connectors to your PC's Ethernet port or Ethernet switch Hub port.

### Note:

In order to make sure serial (RS-232/422/485) connecting with real time data communication, be sure to deploy SUNIX DevicePort products in the same local networking environment with your PC server. SUNIX DevicePort does not support hinge of different network segment nor cross router connection.

## Windows Driver Installation/Verify

Please refer to following instructions to install SUNIX DevicePort driver for the first time under Windows operation system. You will need to connect SUNIX DevicePort to PC ready, before installing the driver.

(1) You can download the latest driver from SUNIX official website (<http://www.sunix.com>) by searching "DevicePort Advanced Mode" or "DPAS".

(2) Please execute Setup.exe to install driver. Driver InstallShield Wizard will process installation procedure.



(3) User can use Windows "Device Manager" (Start > Controller Panel > Device Manager) to verify proper installation. You should read SUNIX COM port under Ports (COM & LPT). (4-port DevicePort in this example).



(4) User also can check SUNIX DevicePort box and COM/LPT port mapping status over SUNIX DevicePort Control Center by executing dp icon on the windows desktop system tray.



## Microsoft® .NET Framework 3.5 Installation

SUNIX DevicePort application design bases on Microsoft®.NET Framework software, and Microsoft®.NET Framework 3.5 (or 3.5 service pack1) is required. The table in this topic provides the operating system for the Microsoft® .NET Framework editions.

| Operating System | .NET Framework Edition  | Remarks                                |
|------------------|-------------------------|--|
| Windows XP       | n.a                     | User has to install .NET Framework 3.5 |
| Windows Vista    | .NET Framework 3        | -                                      |
| Windows 7        | .NET Framework 3.5      | -                                      |
| Windows 8 / 8.1  | .NET Framework 4 or 4.5 | User has to install .NET Framework 3.5 |
| Windows 10       | .NET Framework 4 or 4.5 | User has to install .NET Framework 3.5 |
| Server 2008      | .NET Framework 4        | User has to install .NET Framework 3.5 |
| Server 2012      | .NET Framework 4 or 4.5 | User has to install .NET Framework 3.5 |

Please note that Microsoft®.NET Framework 4 or 4.5 is NOT include previous editions. User has to install Microsoft®.NET Framework 3.5 or 3.5 Service Pack 1 separately. Due to Microsoft® licensed issue, .NET Framework 3.5 setup package is not included, user can go to Microsoft official website (<http://www.microsoft.com/>) or search keyword ".NET Framework 3.5" to download software package.

## DevicePort Manager Utility Operating

Access SUNIX DevicePort Manager by executing golden dp icon on the windows desktop system tray. User can view connected SUNIX DevicePort box status in the utility. Be sure to keep DevicePort Manager Utility alive in your system, please do NOT close, disable or remove it from windows startup process.



SUNIX DevicePort Manager Utility is divided into three tables.

(1) **My DevicePort:**

List DevicePort connection and port-mapping are ready in the system. If discovered DevicePort connects successfully, this authorized DevicePort item will change status to this table.

(2) **Paired DevicePort:**

List DevicePort was mapping ready, but off-line connection now. However COM port resource still keeps in the system, it's called as "Off-line Mapping".

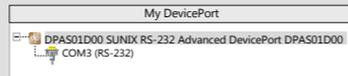
If DevicePort goes to off-line status; this specified DevicePort item will change status back to this table. To release COM port mapping resources from the system (hardware device manager), running "Disconnect" operation is necessary.

(3) **Available DevicePort:**

List DevicePort items are free for connection. After SUNIX DevicePort Manager drivers are installed and launched; connecting SUNIX DevicePort advanced mode product in the same network area with PC server, and you can discover DevicePort list free for connection in the Available DevicePort table. To connect DevicePort, please double click or right-click mouse on the discovered DevicePort in this table.



After authorized DevicePort connection is ready, Double click on the selected DevicePort in the "My DevicePort" table, user can configure DevicePort hardware settings, including device name, MAC address, access password, auto-connection and firmware update. Be sure to click "OK" to enable your modification before closing this window.



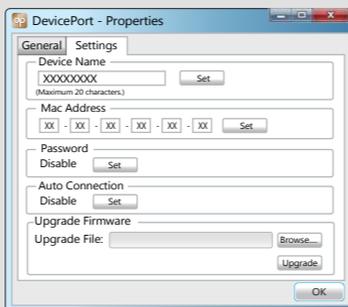
**Device Name** is specially designed to allow easy identification of the multiple DevicePort units on the network. You can input maximum 20 characters.

**MAC Address** is a unique identifier assigned to network DevicePort for communications on the physical network segment. To prevent MAC address conflict problem, user can modify it by himself.

**Access Password (Default = Disable)** Enable access password to prevent DevicePort access from unauthorized host on the network. Users can configure password settings in this page.

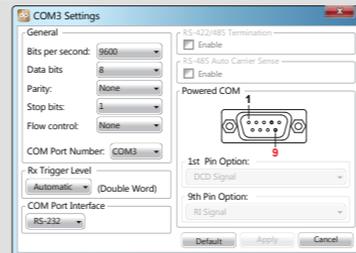
**Auto Connection (Default = Disable)** Enable Auto Connection to make connection between authorized DevicePort and PC server automatically. When authorized DevicePort unit goes to online, PC server will identify, connect, and port-mapping without additional operation. Users can configure connecting type in this page. Note that DevicePort Auto-Connection feature will be disabled automatically once running "Disconnect" operation. User has to reconfigure (enable) Auto-Connection feature manually in DevicePort Manager Auto-Connection settings.

**Upgrade Firmware** Download the latest firmware from SUNIX official website and click "Browse..." to select correct firmware ".bin" file. Click "Upgrade" to upgrade DevicePort to the latest firmware version.



## Configure Serial Port Settings

Double click on the selected COM port, and users can configure serial port's settings in this page, including Baud rate, Parity, Data bits, Stop bits, Flow Control, COM port number, RS-232 (RS-422/485) interface and Powered COM features. Be sure to click "Apply" to enable your modification before closing this window.



## Troubleshooting

**Q 1.** System fails to find the DevicePort or COM/LPT port.

**Ans:** It may cause by following issue:

- DevicePort is not properly connected to the PC server. Please connect DevicePort to your PC Ethernet port directly without bridging any switch hub or access point.
- Be sure to deploy SUNIX DevicePort products in the same local networking environment with your PC server. Please read chapter 2 hardware guide for detail.
- Make sure DC power is properly connected to DevicePort. You can identify it by Power LED on DevicePort. Please read chapter 2 hardware guide for detail.
- Make sure your PC's Ethernet port is enable. You can read and check it by **Controller Panel > Network and Internet > Network Connections**



e. After driver install ready, be sure to check "DevicePort Manager" service is working. There's one golden dp logo on the windows desktop tray.



Or you can access DevicePort Manager utility program from this link:  
**C:\Program Files\SUNIX\DevicePort\Advanced\DevicePortManager.exe**

f. DevicePort hardware itself might be defective or crash. You can reset DevicePort power again, try another PC to test it, or contact us for technical support.

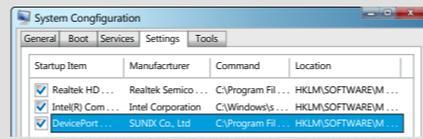
**Q 2.** My DevicePort does not support Auto-Detect feature.

**Ans:** It may cause by following issue:

a. Be sure to keep "DevicePort Manager" utility alive in your windows desktop system tray, please do NOT close, disable or remove it.



b. Be sure to keep "DevicePort Manager" utility alive when windows startup, please do NOT disable or remove it from windows startup process. You can re-install SUNIX DevicePort driver again to fix this problem.



c. Please enable "Auto Connection" feature in the DevicePort settings. Please read manual chapter 4.2.6 for detail.

**Q 3.** There is no respond from "DevicePort Manager", after dis/connecting DevicePort from/to PC host.  
**Ans:** It may cause by "DevicePort Manager" utility crash, please reboot your computer to reset it.

**Q 4.** How to install COM port on my system?

**Ans:** SUNIX DevicePort supports Ethernet auto-detect capability, user can expand RS-232 COM and LPT port easily. After driver installed ready at the first time, plug RJ45 Ethernet cable between SUNIX DevicePort and PC host side, system will create physical COM/LPT ports automatically with real time data transmit and receive communication. User can easily access port by using existing software and application.

DevicePort runs procedure as below.

**Ethernet Connection ready > DevicePort detecting > Connect & Port Mapping**



**Q 5.** May I know system resource of COM or LPT port?

**Ans:** SUNIX DevicePort is an Ethernet enable devices. System or BIOS will not allocate any resource for COM or LPT ports. So COM port does not locate at any legacy ISA address 3F8, 3E8, 2F8, 2E8 and LPT port does not locate at 378, 278, 3BC legacy ISA address either.

**Q 6.** My DevicePort cannot communicate with my serial device, however without problem communicating over on-board COM port.

**Ans:** Please follow up manual chapter 4.2.8 to export log file, and sent log files to SUNIX technical support to verify.

**Q 7.** DevicePort Manager utility initialization fails.

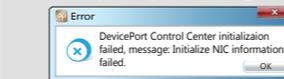
**Ans:** It may cause by communicating time-gap between PC's Ethernet driver and DevicePort driver. DevicePort Manager utility does not initialize successfully when PC system booting.

However, you still can execute DevicePort Control Center program from this link:  
**C:\Program Files\SUNIX\DevicePort\DevicePortControlCenter.exe**

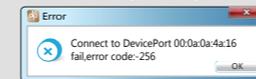
If above error message always happen when your PC booting, please try to update your Ethernet card's driver from NIC (Network interface controller) vendor. Or you could send your PC system and NIC information to us to get help.

**Q 8.** I forgot the password to access secure DevicePort.

**Ans:** If you forgot access password, please use Reset Button to restore factory default settings manually. Factory default setting is free for connection without password protection.



Q 7



Q 8

**Q 9.** Should I install driver for each DevicePort boxes when Multiple DevicePort daisy chain network.

**Ans:** Driver install required only at the first time. So you do not need to re-install driver again for your second DevicePort unit connecting.

**Q10.** Could I connect DevicePort Advanced mode to switch hub or AP routers?

**Ans:** Yes, you can. If DevicePort Dock mode connects to public switch hub or router, there are somebody may connect to this DevicePort without your expecting. So be sure to enable access password to prevent unauthorized host connecting.

**Q11.** How to expand more than multiple COM ports by using DevicePort ?

**Ans:** SUNIX DevicePort Advanced Mode supports both Direct-Link and Ethernet-Link connections in the same network. There is no DevicePort unit connecting limitation, but maximum 255 COM and 3 LPT ports in one PC system.



**Q12.** Will DevicePort lower my Internet performances when access COM serial data at the same time?

**Ans:** SUNIX DevicePort product built-in dual 10/100 Ethernet channels, one for data downstream to PC host and the other upstream port to Ethernet switch. User can access internet over DevicePort bridge. Serial data communication asks very low bandwidth; most of serial devices asks 9600bps, N,8,1 data transfer rate, so it should not cause your internet accessing trouble. According to our testing, one single 8-port RS-232 DevicePort product expenses about 10Mbps data transferring rate with full loading (921Kbps, N,8,1) test. About 10% bandwidth of standard 10/100Mb network environment.

However, to make sure efficient and safe communication, DevicePort will put serial communication data from COM ports as the first priority than other internet data packages.

## Regulatory Compliance

### FCC Class B Declaration

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications not authorized by the manufacturer may void users authority to operate this device.

### CE

This equipment meets the requirements of EC Electromagnetic Compatibility Directive (2004/108/EC and 2014/30/EC)

### WEEE Information

For EU (European Union) member users: According to the WEEE (Waste electrical and electronic equipment) Directive, do not dispose of this product as household waste or commercial waste. Waste electrical and electronic equipment should be appropriately collected and recycled as required by practices established for your country. For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.



### Contact Information

Customer satisfaction is our number one concern, and to ensure that customers receive the full benefit of our products, SUNIX services has been set up to provide technical support, driver updates, product information, and user's manual updates.



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