SUNIX

DevicePort® Dock Mode Ethernet enabled RS-232 & Printer Port Replicator

Quick Installation Guide

First Edition

www.sunix.com

Driver & Manual Download :

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

Introduction

SUNIX DevicePort® product is the ideal choice to enable your current RS-232 devices and printer networking. User can expand multiple RS-232 and Printer ports on PC windows based system over Ethernet connection. With SUNIX DPL2000Q High-Performance Ethernet-UART/Printer controller and exclusive I/O redirection technology, DevicePort® creates physical COM and LPT ports that support real time data communication and Ethernet-COM/LPT port hot-plug capability; user can expand RS-232 COM and Printer LPT ports easily without complex software configuration that improves deployment efficiency to achieve greater reliability in commercial and industrial automation applications.

Package Checklist

Check if the following items are attached and in good condition while receving this package. Contact your retailer 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 "DPKM" on SUNIX website http://www.sunix.com

Features

• Expands RS-232 COM and Printer LPT ports over Ethernet networking.
• Works as a PCIe add-on card operating experience with Ethernet hot-plug and system auto-detect capability.
• DevicePort® Dock mode supports secured connection between PC host and DevicePort®. (*Note 1)
• Built-in SUNIX DevicePort® DPL2000Q High-Performance controller.
• SUNIX DevicePort® proprietary Ethernet I/O Redirection Technology. (*Note 2)
  - Port auto-mapping with real time data communication.
  - Physical COM and LPT port accessed via device manager. (*Note 3)
  - Up to 12 COM and 3 LPT ports working on windows simultaneously.
• Accesses traditional COM port by using existing software and AP.
• Low power consumption design for Green Environment.
• Certified by CE, FCC, VCCI, C-Tick, BSMI, and Microsoft WHQL approval.

Note:
1. To prevent on-line spy recording, DevicePort® Dock Mode limits specific Ethernet port connection, and it does not work on router or switch operation.
2. Ethernet I/O Redirection technology is SUNIX proprietary protocol for COM, LPT, and digital I/O expansion over category6/5 Ethernet cable.
3. Due to IEEE1284 protocol, the limitations of DevicePort® LPT port lists as below:
   * LPT port supports SPP (Standard Parallel Port) mode for Printer devices only.
   * LPT port does not support LPT Security Locker and other parallel devices, but printer.
   * LPT port does not support ECP, EPP, or BPP mode.
   * LPT port does not support legacy 278/378/3BC ISA address under Microsoft Windows.

Specification

Serial Communication

Interface	RS-232	Baud rate	50bps ~115.2Kbps (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 or 2-port (Product Dependent)	Flow Control	Xon/Xoff (software)
FIFO	1Kbyte Hardware / per port	Connector	DB9 Male
Signal	DCD, TxD, RxD, RTS, CTS, DTR, DSR, GND, RI		
Protection	±15KV ESD IEC6000-4-2 Air Discharge ±8KV ESD IEC61000-4-2 Contact Discharge ±4KV ESD IEC61000-4-2 Level2 Line-to-Line		

Parallel Communication

Interface	IEEE1284 Printer Support(*Note 3)
No. of Port	1-port
FIFO	1Kbyte Hardware / per port
Speed	Maximum 2.7MBps
PCB Connector	DB25 Female

Ethernet Communication

Number of Ports	2-port (*Note 1) Upstream to Ethernet Switch Downstream to PC Host
Speed	10/100 Mbps, auto MDI/MDIX
Connector	RJ45
Magnetic Isolation Protection	1.0K Built-in

Power Requirements

Input Voltage	5 to 12VDC
Power Consumption	2.5W @ 5VDC
Connector	DC-Jack

Driver Support

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

Environment

Operation Temperature	0 to 45°C (32 to 113°F)
Operation Humidity	5 to 95% RH (non-condensing)
Storage Temperature	-20 to 85°C (-4 to 185°F)

Hardware Guide

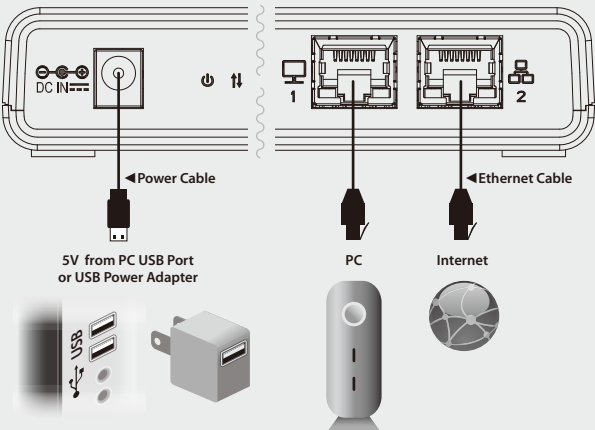| No.	Function	Descriptions
❶	Power DC Jack	Input power range +5~12VDC
❷	Power LED	ACT when power on
❸	Mapping LED	ACT when COM/LPT port mapping ready in system
❹	Printer Data LED	ACT when Printer port data communication
❺	Rx Data LED	ACT when serial COM port receive data
❻	Tx Data LED	ACT when serial COM port transmit data
❼	Downstream Ethernet Port	Ethernet cable connect to PC host
❽	Upstream Ethernet Port	Ethernet cable connect to switch hub (internet)
❾	COM Port	COM port number sequence (Product Dependent)
❿	LPT Port	Printer Port

• 1-port RS-232 and 1-port Printer Port Model
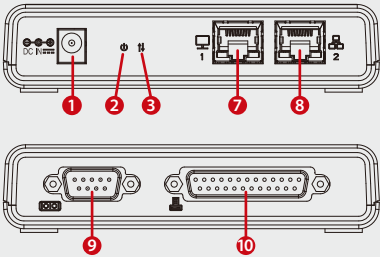
• 2-port RS-232 and 1-port Printer Port Model
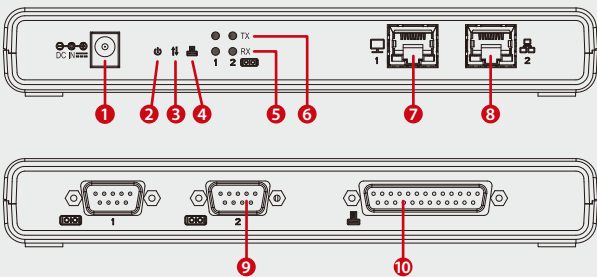
Hardware Installation

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

Mode1. Single DevicePort® Connecting:

◄Power Cable   ◄Ethernet Cable

5V from PC USB Port   PC   Internet
or USB Power Adapter

Mode2. DevicePort® Daisy Chain Topology

- Type 1
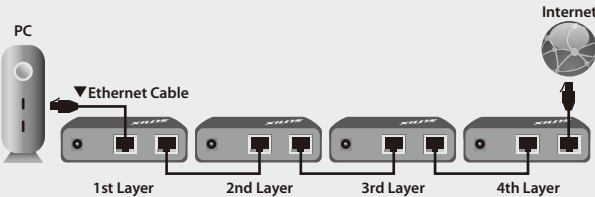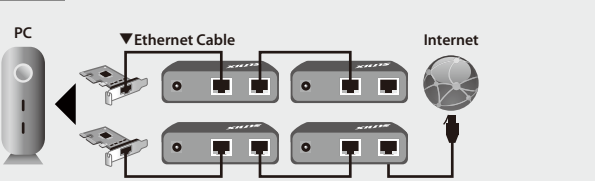
PC   ▼Ethernet Cable   Internet

1st Layer   2nd Layer   3rd Layer   4th Layer

- Type 2

PC   ▼Ethernet Cable   Internet

SUNIX DevicePort® daisy chain network topology limits maximum 4 DevicePort® boxes or 12 COM / 3 LPT ports expansion.

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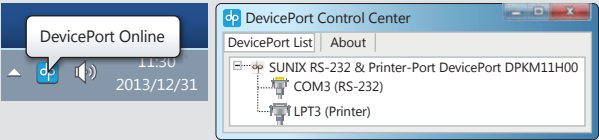
(2) Please execute *Setup.exe* to install driver.
Driver InstallShield Wizard will process installation procedure.

Setup.exe

(3) You can use Windows "**Device Manager**" (Start > Controller Panel > Device Manager) to verify proper installation In the Device Manager window, you should see SUNIX COM port under **Ports** (**COM & LPT**). (1-port RS-232 and 1-port Printer-Port DevicePort® in this example).

- Ports (COM & LPT)
 - SUNIX COM Port (COM3)
  - SUNIX Printer Port (LPT3)
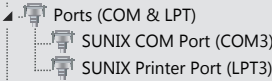
(4) You also can check SUNIX DevicePort® box and COM port mapping status over **SUNIX DevicePort® Control Center** by executing **dp icon** on the windows desktop system tray.

DevicePort Online
11:30
2013/12/31

DevicePort Control Center
DevicePort List   About
- SUNIX RS-232 & Printer-Port DevicePort DPKM11H00
  - COM3 (RS-232)
  - LPT3 (Printer)

DevicePort Hardware Settings

Access DevicePort® Control Center by double clicking **dp icon** on the windows desktop system tray.

DevicePort Control Center
11:30
2013/12/31
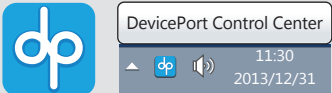
SUNIX DevicePort® supports Ethernet hot-plug, system auto-detect, and port auto-mapping features; user can expand COM and LPT ports conveniently. User could read "**DevicePort Online**" when link ready between PC and DevicePort®, or "**DevicePort Offline**" when link down on the windows desktop system tray.

DevicePort Online
11:30
2013/12/31
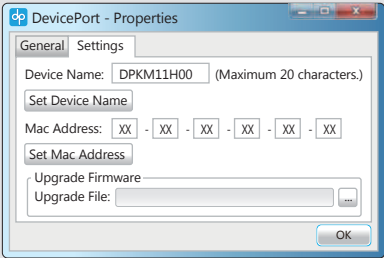
DevicePort Offline
11:30
2013/12/31
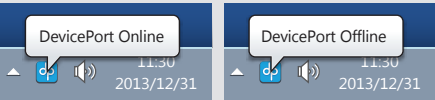
You can discover DevicePort® connection and COM port mapping status on DevicePort® Control Center utility. This is an example for a 1-port RS-232 and 1-port Printer Port DevicePort® screen shot.

DevicePort Control Center
DevicePort List   About
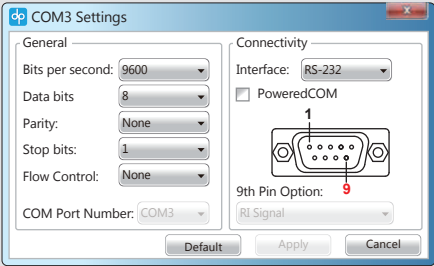- DPKM11H00 #1 SUNIX RS-232 & Printer-Port DevicePort DPKM11H00
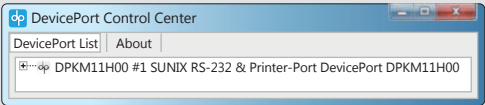
Note: Be sure to keep DevicePort Control Center utility alive in your system, please do NOT close, disable or remove it from windows startup process.
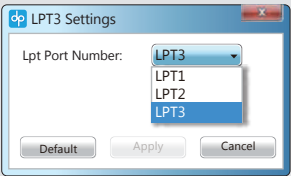

Double click on the selected DevicePort® device name, and users can configure DevicePort® hardware settings in this page, including device Name, MAC address, and upgrade firmware.

DevicePort - Properties
General   Settings
Device Name: DPKM11H00   (Maximum 20 characters.)
Set Device Name
Mac Address: XX - XX - XX - XX - XX - XX
Set Mac Address
Upgrade Firmware
Upgrade File:
OK

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 interface and Powered COM features.

COM3 Settings
General
Bits per second: 9600
Data bits: 8
Parity: None
Stop bit: 1
Flow Control: None
COM Port Number: COM3
Connectivity
Interface: RS-232
PoweredCOM
9th Pin Option:
RI Signal
Default   Apply   Cancel

Double click on the selected LPT port, and users can configure LPT port's number in this page.

LPT3 Settings
Lpt Port Number: LPT3
LPT1
LPT2
LPT3
Default   Apply   Cancel

Troubleshooting

Q 1: I could not use my old Parallel Secured Dongle.
Ans: SUNIX DevicePort® LPT port supports SPP (Standard Parallel Port) mode for Printer devices only. It does not support LPT Security Locker and other parallel devices. Due to traditional IEEE1284 protocol I/O mapping limitations, DevicePort® LPT It does not support ECP (Enhance Capacity Port), EPP (Enhance Parallel Port), or BPP (Bi-direction Parallel Port) mode either.

Q 2: Is there any secure-data stolen risk between PC and DevicePort®?
Ans: To prevent on-line spy recording, DevicePort® Dock Mode limits specific Ethernet port connection, and it does not work on router or switch operation. So don't worry about secure data communication; serial COM port's data from DevicePort® will not upstream to switch hub, but only to PC host.

Q 3: How to expand more than 12 COM ports by using DevicePort® ?
Ans: SUNIX DevicePort® daisy chain network topology limits maximum 4 DevicePort® boxes or 12 COM ports expansion in one windows based PC system. If you need more than 12 COM ports for your system, please contact with us for 16 or 32-port DevicePort® models.

Q 4: 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 10Mbp/s 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.

Q 5: My DevicePort® does not support plug-n-play feature.
Ans: It may caused by following issues:
a. Be sure to keep "*DevicePort Control Center*" utility alive in your windows desktop system tray, please do NOT close, disable or remove it.

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

Q 6: There is no respond from "DevicePort Control Center", after dis/connecting DevicePort® from/to PC host.
Ans: It may caused by "DevicePort Control Center" utility crash, please reboot your computer to reset it.

Q 7: 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 level DevicePort® connection.

Q 8: Could I connect DevicePort® Dock mode to switch hub or AP routers?
Ans: No, you can't. To prevent on-line spy recording, DevicePort® Dock Mode limits specific Ethernet port connection, and it does not work on router or switch operation. If you want to do so, please refer to SUNIX DevicePort® Advanced mode model.

Q 9: 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.

Q10: DevicePort Control Center utility initialization fails.
Ans: It may caused by communicating time-gap between PC's Ethernet driver and DevicePort® driver. DevicePort® Control Center 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

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Q11: How to install COM port on my system?
Ans: SUNIX DevicePort® supports Ethernet hot-plug and system 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.

Be sure to keep DevicePort Control Center utility alive in your system, please do NOT close, disable or remove it from windows startup process.

Q12: System fails to find the DevicePort® or COM/LPT port.
Ans: It may caused by following issues:
a. DevicePort® is not properly connected to the PC host. Be sure to use Ethernet downstream port number1 of DevicePort®. Please read hardware guide for detail.

b. Make sure DC power is properly connected to DevicePort®. You can identify it by Power LED on DevicePort®. Please read hardware guide for detail.

c. Make sure your PC's Ethernet port is enable. You can read and check it by *Controller Panel > Network and Internet > Network Connections*

d. After driver install ready, be sure to check "DevicePort® Control Center" service is working, you can check it on the windows desktop tray.

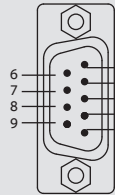Or you can access DevicePort® Control Center program from this link:
C:\Program Files\SUNIX\DevicePort\ DevicePortControlCenter.exe

e. 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.
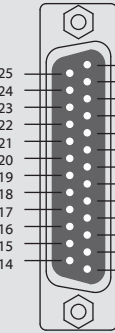
Pin Assignment
SUNIX DevicePort® RS-232 and Printer-port pin assignments.

RS-232 Interface - DB9M:

No.	PIN
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

Printer Port Interface - DB25F:

No.	PIN	No.	PIN
1	STROBE	14	AUTO FEED
2	DATA0	15	ERROR
3	DATA1	16	INT
4	DATA2	17	SELECT INPUT
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACKNOWLEDGE	23	GND
11	BUSY	24	GND
12	PAPER EMPTY	25	GND
13	SELECT		

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)

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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Fax: +886-2-8913-1986

Made in China
771-DPKMQK001-S01