Data and Power on a Single Line

Power over LAN™ Midspan
PD-3006/PD-3012
6-Port & 12-Port Models
IEEE 802.3af-compliant

User Guide

Download from Www.Somanuals.com. All Manuals Search And Download.

Notice

The information contained herein is believed to be accurate and reliable at the time of printing. However, due to ongoing product improvements and revisions, PowerDsine cannot accept responsibility for inadvertent errors, inaccuracies, subsequent changes or omissions of printed material.

PowerDsine Ltd. reserves the right to make changes to products and to their specifications as described in this document, at any time, without prior notice. This material may not be photocopied or reproduced without permission.

Disclaimer

PowerDsine assumes no responsibility or liability arising from the use of Midspans, as described herein, nor does it convey any license under its patent rights or the rights of others. Applications that are described herein for any of theses products are for illustrative purposes only. PowerDsine makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

© 2003 PowerDsine Ltd.
All rights reserved.
This document is subject to change without notice.

Original publication: 9 February 2003 Date Printed: Jun-25-2003

Acknowledgements

Power over LAN is a trademark of PowerDsine Ltd.

All other products or trademarks are property of their respective owners.

The product(s) described by this manual is (are) a licensed product of PowerDsine.

Download from Www.Somanuals.com. All Manuals Search And Download.

Contents

Download from Www.Somanuals.com. All Manuals Search And Download.

Before proceeding, record the unit's serial number below for future reference. The serial number can be found on the information label at the rear of the Power over LAN Midspan.

Serial Number

Download from Www.Somanuals.com. All Manuals Search And Download.

1 Safety Information

1.1 General Guidelines

You must read the following safety information before carrying out any installation, removal or any maintenance procedure on the Power over LAN Midspan. Warnings contain directions that must be followed for personal and product safety. Follow all directions carefully.

WARNING 

Read the Installation Instructions in Section 3 before connecting the Power over LAN Midspan to its power source.

WARNING 

The Midspan must use a grounded power cord, as defined in paragraph 1.2.

WARNING 

This product relies on the building installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 15 A for 120 VAC, (U.S.) 10 A for 230 VAC (international) is used.

WARNING 

Do not work on the system, connect or disconnect cables during periods of lightning activity.

WARNING 

A voltage mismatch can cause equipment damage and may pose a fire hazard. If the voltage indicated on the label is different from the power outlet voltage, do not connect the Power over LAN Midspan to this outlet.

WARNING 

For shelf-mounted equipment, be certain that the surface is stable and strong enough to support the equipment. Do not stack more than four the Power over LAN Midspans.

WARNING 

Ultimate disposal of this product should be handled according to all local laws and regulations.

WARNING 

The Power over LAN Midspan "Data" and "Data + Power" ports are shielded RJ-45 data sockets. They cannot be used as Plain Old Telephone Service (POTS) telephone sockets. Only RJ-45 data connectors may be connected to these sockets.

Download from Www.Somanuals.com. All Manuals Search And Download.

1.2 Power Cord

In the event that the power cord is replaced, the replacement must meet local requirements.

U.S.A. and Canada

* The cord must be UL-approved or CSA certified.
* The minimum specification for the flexible cord is:
  - No. 18 AWG
  - Type SV or SJ
  - Three-conductor.
* The cord set must have a rated current capacity of at least 10 A.
* The attachment plug must be an earth-grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

Denmark

* The supply plug must comply with section 107-2-D1, standard DK2-1a or DK2-5a.

Switzerland

* The supply plug must comply with SEV/ASE 1011.

* The appliance coupler (connecting to the Midspan and not to the wall plug) must have a configuration for mating with an EN60320/IEC320 appliance inlet.

* The power socket outlet must be near the Midspan and be easily accessible. *You can only remove power from the unit by disconnecting the power cord from the outlet.*

* This unit operates under SELV (Safety Extra Low Voltage) conditions according to EN60950/IEC 950. The conditions are only maintained if the equipment to which it is connected also operates under SELV conditions.

* France and Peru only: This unit cannot be powered from IT supplies. If your supplies are of IT type, this unit must be powered by 230 V (2P+T), via an isolation transformer with a ratio of 1:1 and with the secondary connection point labeled Neutral, connected directly to ground.

* U.K. only: The Power over LAN Midspan is covered by General Approval, NS/G/12345/J/100003, for indirect connection to a public telecommunications system.

Download from Www.Somanuals.com. All Manuals Search And Download.

2 About the Power over LAN Midspan

PowerDsine's family of Power over LAN Midspans, series 3000, injects power over data-carrying Ethernet cabling. The PD-3006/3012 Midspans, support 6 and 12 ports respectively in a 10/100BaseTx Ethernet network, over TIA/EIA-568 Category 5/5e/6 cabling. The DC operating power for the data terminal units is fed over unused pairs of the cabling (7/8 and 4/5).

The Power over LAN Midspan normally powers devices that are Power over LAN enabled or are equipped to receive power over Ethernet. These devices are called Powered Devices (PDs). Devices that are not equipped to receive power over Ethernet may require an external splitter in order to be powered.

Power over LAN Midspan main features:

* Remote power feeding of Ethernet terminals
* Eliminates the need for AC outlets, local UPS and AC/DC adapters
* Universal range power input (100-240 VAC, 50/60 Hz)
* Power management for PD-3012 only
* Independent overload and short-circuit protection per channel
* Port status indications
* Optional 19-inch rack kit.

2.1 Power Management (PD-3012 only)

When establishing a network, the total power required by PDs may exceed the total power available from the Midspan. The built-in Power Management feature will not allow the total power output to exceed the maximum power available (92 W). When the total power available is near maximum, attempts to connect an additional PD to a free port will cause the corresponding LED of the port to blink orange, indicating an out-of-power budget. This port will not deliver power. Power distribution is based on "first come, first served" logic.

It is possible that connected and operating PDs will significantly increase or suddenly raise their power requirements. If the power required exceeds the power available, the Power over LAN Midspan will start to turn off ports, starting from port 12 down until the total power is once again under the maximum limit.

Download from Www.Somanuals.com. All Manuals Search And Download.

2.2 10/100BASE-TX Ports Definition

2.2.1 Data Input Ports

The Midspan has 6 (or 12) 10Base-T/100Base-TX- data input ports, configured in a non-crossover manner (straight-wired). These ports, shown in Figure 2-1 (bottom row of connectors), are designed to carry Ethernet data only (Tx/Rx) over the standard 2-wire pairs (pins 1/2 and 3/6).

2.2.2 Data & Power Output Ports

The Midspan has 6 (or 12) Data & Power ports also configured in non-crossover manner (straight-wired). These ports are designed to carry Ethernet data over the standard 2-wire pairs (pins 1/2 and 3/6) and DC power over the spare pairs (pins 4/5 and 7/8).

According to IEEE 802.3 standard, the maximum allowable distance between two Ethernet links is 100 m (328 ft). The Power over LAN Midspan is garanteed to work up to this distance.

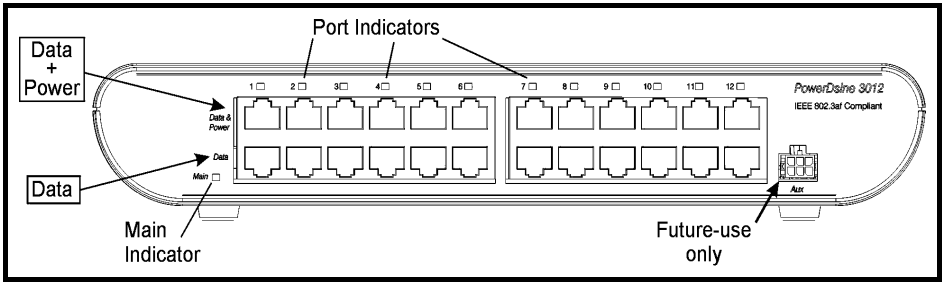

Figure 2-1: Power over LAN Midspan, Front View (PD-3012)

2.3 Indicators

A set of indicators provide the status of the Power over LAN Midspan and its ports. Refer to Table 2-1 and Table 2-2 for status information during operation.

2.3.1 Primary Power Indicator

A Main (power) indicator on the front panel, shows the status of the Midspan. This indicator illuminates green when power is applied to the Midspan. In case of a problem with the device, the indicator illuminates in orange.

Download from Www.Somanuals.com. All Manuals Search And Download.

2.3.2 Port Indications

The status of each port is monitored by a bi-color LED indicator (green and orange). Green indicates that the PD has been identified as "Power over LAN enabled", is active and is receiving power.

Orange indicates that the port is not supplying power and is not active. Refer to Table 2-2 for additional information.

> In the event that an Ethernet device that is not Power over LAN enabled is connected to the Power over LAN Midspan (indicator is orange or off), the Ethernet device will be unaffected due to the fact that power is not being supplied.

Table 2-1: Power Status Indications

Indicator	Indicator State	Main Power Status	Remarks
Main	Off	Midspan is unplugged or faulty.	-
	Green	Indicates AC power input active.	Internal power supply voltage is within tolerance.
	Green blinking	Internal power supply voltage is out of tolerance.	All ports are disconnected.
	Orange	Internal problem alarm.	Built-in-Test (BIT) failed.

Table 2-2: Port Status Indications

Port Indicator State	Port Load Conditions	Port Voltage
Off	Non-active load or unplugged port.	Power to the port is disconnected. No DC voltage present on spare pairs.
Green	Active load is plugged in and is within normal limits.	Continuous nominal DC voltage is present on the spare pairs.

Download from Www.Somanuals.com. All Manuals Search And Download.

Table 2-2: Port Status Indications

Port Indicator State	Port Load Conditions	Port Voltage
Orange	A not power-ready device is connected to the port.	Overload conditions; or short; or forced external voltage feed (constant DC) into the port.
Green blinking	Transitional mode in which load detection is in process or discharged capacitor in the PD.	No voltage is present on the spare pairs. Power to the port is not applied.
Orange blinking	Total aggregated power exceeds 92 W	Power management evoked. Power to the port is not applied.

Download from Www.Somanuals.com. All Manuals Search And Download.

3 Installing the Power over LAN Midspan

3.1 Background Information

As shown in Figure 3-1, the Midspan is connected in series to an Ethernet switch/Hub. The data outputs from the switch are connected to the Midspan. The Midspan delivers power over spare twisted pairs (pins 7/8 and pins 4/5) of the Category 5 cabling without degrading the quality of data communications.

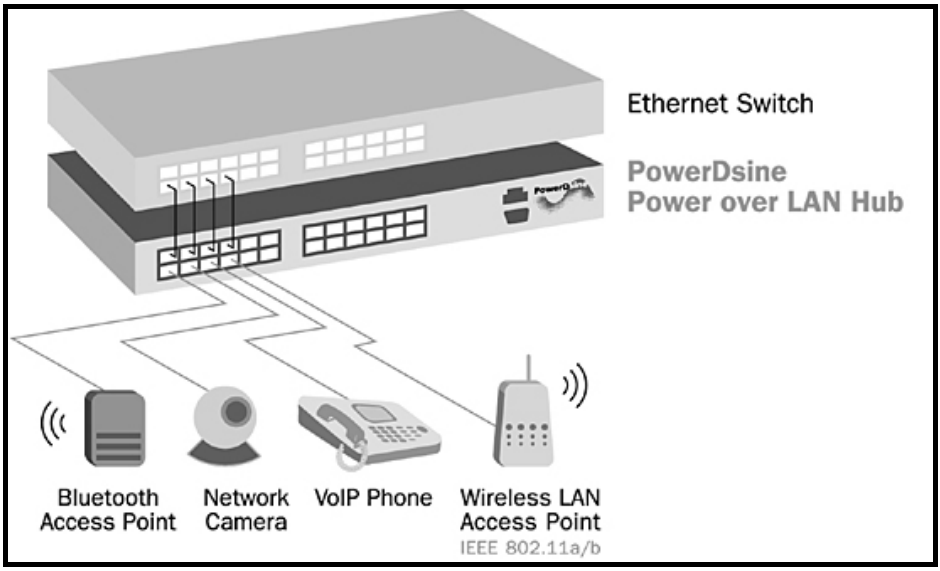

Figure 3-1: Typical Installation

3.2 Connecting Cables

The ports on the front panel of the Midspan are configured as "route through" ports for all eight conductors of the RJ-45 connectors. Use Category 5 cabling in making connections.

1. Connect cables from the Ethernet Switch to the Data ports (bottom row on Midspan).
2. Connect the cables from the IEEE 802.3af ready terminals (PDs) to the corresponding Data & Power ports (top row on Midspan).

Download from Www.Somanuals.com. All Manuals Search And Download.

3.3 Powering up

The Power over LAN Midspan has no on/off switch. To apply or remove power to the Midspan, insert or remove the power cable from the receptacle on the rear panel of the unit.

With power applied, the Midspan powers-up and the internal fan operates; then, the device runs through its power-on self-test (POST), which takes less than 10 seconds. During the POST, all ports are disabled and the indicators illuminate in the following sequence:

1. Port indicators and the Main indicator illuminate green.
2. Port indicators and the Main indicator illuminate orange.
3. Main indicator remains lit green; port indicators are out.

Ports are now enabled for normal operation.

3.4 Rack-Mounting Brackets (optional only)

Mounting brackets are available to install the Midspan in a 19-inch rack. An optional accessory kit can be ordered as PowerDsine catalog number PD-3000/MK. This kit consists of:

* Left-hand bracket (MB-6831-011)
* Right-hand bracket (MB-6831-012)
* Screws (MS-1413-001) qty 4

See Figure 3-2 for installing the brackets on the Midspan. It may be necessary to remove the four rubber legs prior to installing the brackets, so as to maintain a one rack-unit height. Once the brackets are installed, the device can be mounted in a 19-inch rack assembly, using the holes shown in Figure 3-3. Rack mounting screws are not provided.

Download from Www.Somanuals.com. All Manuals Search And Download.

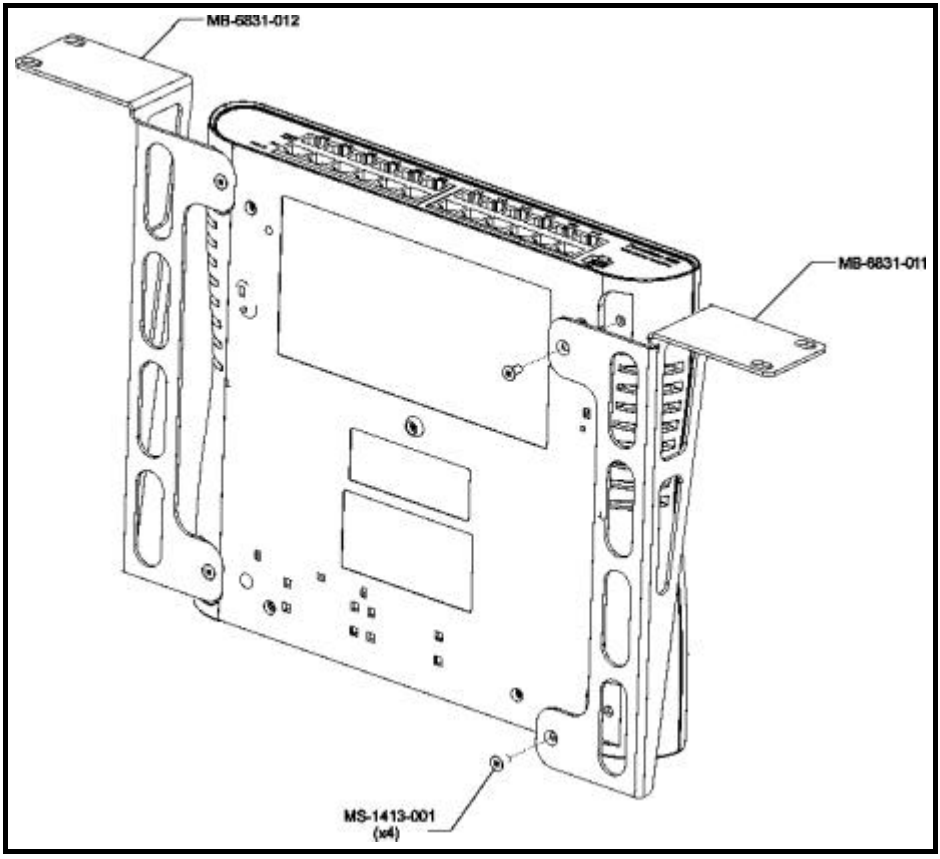

Figure 3-2: Installing Brackets on Midspan

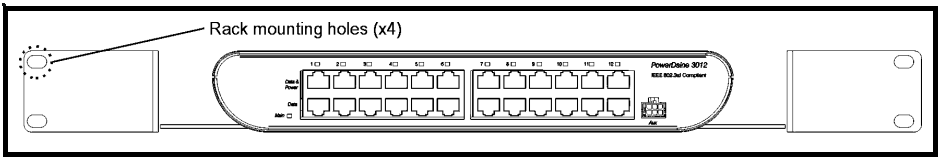

Figure 3-3: Rack Mounting the Midspan

Download from Www.Somanuals.com. All Manuals Search And Download.

3.5 Troubleshooting

3.5.1 Preliminary Steps

If you encounter problems, check that:

* Power is applied to the Midspan
* A crossover-type Ethernet cable has not been used
* The Ethernet cable from the network is connected to the Data port
* The Ethernet cable to the PD is connected to the Data & Power port
* Cable pairs are attached to corresponding ports.

3.5.2 Troubleshooting Guide

This paragraph provides a symptom and resolution sequence in order to assist in the troubleshooting of minor operating problems. If the steps given do not solve your problem, do not hesitate to call your local dealer for further assistance. Refer to Table 3-1.

Table 3-1: Troubleshooting Steps

Symptom	Corrective Steps
Midspan does not power up	1. Verify that a known-good power cord is used. 2. Verify that the voltage at the power inlet is between 100 and 240 Vac. 3. Remove and reconnect power to the device and check the indicators during power up sequence.
Main indicator lit orange	Power-on self-test failed: the Midspan detected an internal fault. In this case, contact your local dealer.
A port indicator is not lit and the corresponding PD does not operate.	1. The Midspan did not detect a PD and therefore the port is not enabled. 2. Verify that the PD is IEEE 802.3af-compliant. 3. Verify that you are using a standard Category 5/5e/6, straight-wired cable, with four pairs. 4. If an external power splitter is in use, replace it with a known-good splitter. 5. Verify that the PD is connected to the Data & Power port. 6. Try to reconnect the same PD to a different port on the same or into different Midspan. If it works, there is probably a faulty port or RJ-45 connection.

Download from Www.Somanuals.com. All Manuals Search And Download.

Table 3-1: Troubleshooting Steps

Symptom	Corrective Steps
The end device operates, but there is no data link.	1. Verify that the port indicator on the front panel is continuously lit. 2. If an external power splitter is in use, replace it with a known-good splitter. 3. Verify that for this link, you are using standard UTP/FTP Category 5 straight (non-crossover) cabling, with all four pairs. Check that the link is 100 m or less. 4. Try to re-connect the same end device into a different port on the same unit or into different unit – if it works, there is probably a faulty port or RJ-45 connection.
Is it safe to keep the Midspan running while a port indicator is orange?	This is a safe condition. The orange indication is due to: 1. A device, not compliant to IEEE 802.3af, was detected. 2. Terminals 4/5 and 7/8 are shorted together. 3. Forced external power fed into the port. During these conditions, port power is disconnected.

Technical Specifications

Physical Specifications

Dimensions (h x w x l)	44 x 281 x 248 mm (1.73 x 11.06 x 9.76 inch)
Weight	1.2 kg (3.2 lb)

Environmental Specifications

Temperature	
- Operating	0 to 40 °C (32 to 104 °F)
- Storage	-20 to 70 °C (-4 to 158 °F)
Humidity	10 to 90% (non-condensing)

Electrical Specifications

Input Voltage	90 to 264 VAC at 47-63 Hz
Input Current	1.5 A max. at 115 Vac
Total Output Power	92 W max.
Output Power, per Port	15.4 W (not to exceed 92 W total for all ports)
Nominal Output Voltage	44 to 57 VDC

Download from Www.Somanuals.com. All Manuals Search And Download.

Visit our web site at: www.powerdsine.com

For technical support, call: +972-9-7755123
In the USA: +631-756-4680 or 1-877-4-802-3AF

Cat. No.: 06-6831-056

Release 1.0

Download from Www.Somanuals.com. All Manuals Search And Download.

Free Manuals Download Website

http://myh66.com

http://usermanuals.us

http://www.somanuals.com

http://www.4manuals.cc

http://www.manual-lib.com

http://www.404manual.com

http://www.luxmanual.com

http://aubethermostatmanual.com

Golf course search by state

http://golfingnear.com

Email search by domain

http://emailbydomain.com

Auto manuals search

http://auto.somanuals.com

TV manuals search

http://tv.somanuals.com