D-Link® DP-313

Wireless Print Server

User's Manual

Rev. 01 (March, 2001)

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ABOUT THIS GUIDE

This manual describes the 3 Parallel Port Multi-protocol Wireless Print Server, including a description of the print server's features, as well as the print server installation procedures and troubleshooting self-test results.

For information about software configuration of the Print Server to allow it to be used with your network, consult the *PS Admin User's Guide* included with your Print Server.

INTRODUCTION

The Print Server is a compact wireless print server which connects to your network through an access point under the infrastructure mode or can be used in ad-hoc mode for direct communication between PC/Notebook and print server anywhere you wish to locate wireless printer services. It manages the flow of print files from your workstations or file servers to its connected printers, delivering print jobs to high-performance printers much faster than a file server or a PC acting as a print server can.

Print Server Features

The Print Server improve network printing services in three ways:

♦ The Print Server picks up the workload of managing print file traffic to its connected printers. This provides workload relief to your file servers, and allows the file servers' full capacity to be used for file access or other direct services to network users. On peer-to-peer networks, workstations can print directly to the Print Server without increasing the load of another workstation or server.

♦ The Print Server's parallel printer ports are IEEE 1284 compliant high-speed bi-directional ports, which can transmit to high-speed laser printers much faster than a PC's parallel printer port. High-speed laser printers connected to the Print Server's parallel ports can be operated at their full capacity.

♦ Because the Print Server is very portable and inexpensive compared to a PC-based print server, and because the Print Server connects to your file servers through the network, printers can be deployed to locations of maximum convenience to users.

The Print Server offers extraordinary flexibility, operating with all major network operating systems and protocols:

♦ **IPX/SPX**

Novell NetWare 3.*x*, 4.*x*, *5.x* (Using either bindery emulation or native NDS)

♦ **TCP/IP**

UNIX LPR/LPD (HP-UX, SunOS, Solaris, SCO, UnixWare, IBM AIX)

Windows NT, Windows 95/98/Me/2000

♦ **NetBEUI**

Windows NT, Windows 95/98/Me/2000, Windows for Workgroups, Microsoft LAN Manager, IBM LAN Server

♦ **AppleTalk**

MacOS EtherTalk

Windows-based setup and administration software, *PS Admin*, is supplied with the Print Server, making configuration and management quick and easy. The Print Server also supports configuration and management via the telnet protocol for networks without Windows-compatible machines.

External Features

This section describes the externally visible features of the Print Server.

Port Connectors

The Print Server's three printer ports are located on its rear panel. Three identical parallel ports are labeled LPT1, LPT2 and LPT3. These printer ports are independently configurable using the *PS Admin* program or the print server's telnet interface. (See the *PS Admin User's Guide* for information about configuring the print server's ports.)
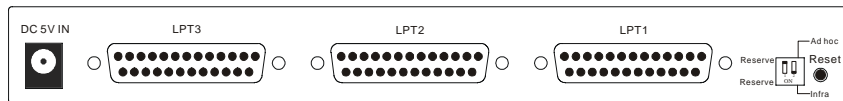
Rear Panel

Wireless DIP Switch

The Print Server's rear panel features a DIP switch allowing two different modes of ad-hoc and infrastructure. In ad-hoc mode there is direct communication between PC/Notebook and print server. Under infrastructure mode communication between PC/Notebook and print server is through the Access Point acting as a bridge between wired and wireless network.

Reset Button

Reset will be initiated when the reset button is pressed once and the LPT1, LPT2 & LPT3 begins to flash.

Factory Reset will be initiated when the reset button is pressed for three seconds or when the LPT1, LPT2 & LPT3 begins to light up. Release the reset button and LPT1, LPT2, & LPT3 will begin to flash indicating the print server is changing to factory reset. When factory reset is completed the print server's wireless setting will be set to default on channel 6.

DC Power Connector

The DC power input connector is located on the Print Server's rear panel and is labeled DC 5V.

LED Indicators

The front panel of the Print Server features five LED indicators:
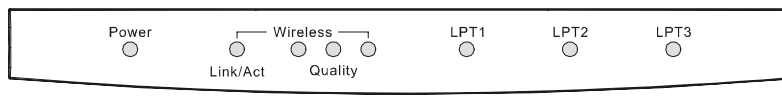
Front Panel LED Indicators

♦ **Power**

◊ Steady green light confirms that the Print Server is powered on.

♦ **Link/Act**

◊ In infrastructure mode steady or flashing green light confirms the Print Server has a good connection to the Access Point.

◊ In ad-hoc mode steady or flashing green light confirms connection to other PC/Notebook.

◊ The indicator blinks off briefly to indicate that the Print Server is receiving/transmitting from/to the wireless network.

♦ **Wireless Quality (3)**

◊ These LED indicator lights show that the Print Server has wireless quality connections to the network in either ad-hoc or infrastructure mode.

◊ If only the first Wireless LED indicator lights up, it indicates poor wireless quality connection.

◊ When the first & second LED indicator lights up simultaneously, it indicates a moderate wireless quality connection.

◊ If all three LED indicators light up simultaneously, it shows a high quality wireless connection.

♦ **LPT1**, **LPT2**, **LPT3**

◊ These LED indicators light to show that the Print Server is transferring print data through the appropriate parallel port.

These three indicators are also used by the print server's power-on self test (POST) to indicate any hardware failures.

UNPACKING AND INSTALLATION

This chapter explains how to install your Print Server and connect it to the network. It also describes the print server self test indications.

Unpacking and Inspecting the Print Server

Carefully remove all items from the package. In addition to this *Hardware User's Guide*, be certain that you have:

♦ DP-313 Wireless Print Server

♦ Power Adapter

♦ User's Manual

♦ Print Server Software

♦ Quick Installation Guide

If any item is missing, or if you find any damage or mismatch, promptly contact your dealer for assistance.

Installing the Print Server

WARNING: *Configuration problems may result if the Print Server is powered up without first establishing its network connection. Follow this procedure to avoid complications at the configuration stage.*

1. Confirm proper operation of each of the printers to be connected to the Print Server.

2. When you have confirmed proper operation of each printer, switch its power off.

3. Confirm that your wireless network is operating normally.

4. (a) **Ad-Hoc Mode**

◆ Before initiating set-up procedure for the print server make sure your wireless PCMCIA card on your PC/Notebook is set to channel 6 in ad-hoc mode.

◆ After setting is confirmed reboot PC/Notebook to enable new setting.

◆ Make sure the DIP switch on the print server is positioned in the ad-hoc mode.

◆ Press the Reset button on the print server for three seconds or when the LPT1, LPT2 & LPT3 begins to light up initiating the factory reset.

◆ When factory reset is completed the print server will be set to default on channel 6.

Note:
When changes are made on the print server's wireless channel it must correspond to the PC/Notebook channel for direct wireless communication.

4. (b) **Infrastructure Mode**

◆ Before initiating set-up procedure for the print server make sure your wireless PCMCIA card on your PC/Notebook is set to channel 6 in ad-hoc mode.

◆ After setting is confirmed reboot PC/Notebook to enable new setting.

◆ Make sure the DIP switch on the print server is positioned in the ad-hoc mode.

◆ Press the Reset button on the print server for three seconds or when the LPT1, LPT2 & LPT3 begins to light up initiating the factory reset.

◆ When factory reset is completed the print server will be set to default on channel 6.

◆ Start-up PS Admin to modify the print server's ESS-ID to match with the Access Point's ESS-ID and this will link the print server to the Access Point. The ESS-ID uses "default" as the factory setting.

◆ From the DIP switch on the print server alter to infrastructure mode and the print server will reset.

Note:

Please make sure to change your PC/Notebook to infrastructure mode and reboot the system. The ESS-ID on PC/Notebook and print server must match with the Access Point's ESS-ID.

5. While each printer is powered off, install a printer cable to connect its parallel port to the printer port of the Print Server.

6. Switch "ON" each connected printer.

7. Plug the AC power adapter's DC output plug into the DC 5V power socket on the rear panel of the Print Server.

8. Plug the power adapter into an electric service outlet. This will supply power to the Print Server, as it has no external power switch.   The Power LED on the Print Server's front panel should light steady green, and the Print Server's self-test will proceed.

Power On Self-Test

When the Print Server is powered on, it automatically performs a self-test on each of its major components. The final result of the self-test is signaled by the state of the LPT1, LPT2, and LPT3 LED indicators following the self-test. Preliminary to the actual component tests, the three LED indicators are tested to confirm their steady and flashing operation.

Immediately after power-up, all five of the LED's should show steady green for several seconds. Then the LPT1, LPT2, and LPT3 LEDs should flash on simultaneously three times. Irregularity of any of the three LEDs during these LED tests may mean there is a problem with the LEDs themselves. Contact your dealer for correction of any LED problems before proceeding.

The actual component tests immediately follow the LED tests. A normal (no fault) result is signaled by a series of three cycles of sequential flashing of the three LEDs, followed by a quiescent state with all three LEDs dark.

If the self-test routine traps any component error, then following the LED tests the self-test will halt and the LED's will continuously signal the error according to the following table. In the event of any such error signal, contact your dealer for correction of the faulty unit.

LED Name			Faulty Component
LPT1	LPT2	LPT3	
off	off	on/steady	LPT3 error
off	off	flashing	Parallel-3 Controller error
off	on/steady	off	LPT2 error
off	flashing	off	Parallel-2 Controller error
off	flashing	flashing	Flash Protected
on/steady	off	off	LPT1 error
on/steady	off	on/steady	Timer INT error

on/steady	on/steady	off	RAM error
flashing	off	off	Parallel-1 Controller error
flashing	flashing	off	Flash erase/program error
flashing	flashing	flashing	Need to reload firmware

Testing Your Print Server

The *PS Admin* software includes a Print Test function for confirmation of printer cable connections and functions. That operational test can be completed after you have installed the *PS Admin* software, and have configured your Print Server and its ports. See the *Testing Your Print Server* section of the *PS Admin User's Guide*.

CONTACTING
TECHNICAL SUPPORT

D-Link provides free technical support for customers within the
United States.
U.S. customers can contact D-Link technical support through our web
site,
e-mail, or by phone.

United States technical support is available Monday through Friday
from 6:00 a.m. to 6:00 p.m. (PST).

Web:
http://www.dlink.com

Email:
support@dlink.com

Phone:
949-788-0805 (option #4)

**If you are a customer residing outside of the United States, please
refer to the list of D-Link locations that is included in this manual.**

Thank you for purchasing this product. We like to receive feedback
from our customers concerning our products. Please take a moment to
visit our web site. You can register your purchase on-line, learn more
about the newest networking products, and let us know the things your
new network has empowered you to do.

A

PRODUCT
SPECIFICATIONS

Printer Connection

Standards: IEEE 1284 Bi-directional parallel interface

Ports: Bi-directional 25-pin parallel ports × 3

Parallel Port Bi-directional Communication: Hewlett-Packard PJL (Printer Job Language) supported

Wireless Network Connection

Network Standards: Wireless LAN standard IEEE 802.11b

Network Data Transfer Rate: 11Mbps* with fallback to 5.5Mbps, 2Mbps and 1Mbps.

Network Mode: Either Ad-hoc or Infrastructure mode.

*Maximum Wireless signal rate based on IEEE Standard 802.11b specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of traffic, building materials and construction, and network overhead lower actual data throughput rate.

Network Protocols

Transport Protocols: IPX/SPX, TCP/IP, NetBEUI, AppleTalk/EtherTalk

TCP/IP Protocols Supported: BOOTP, SNMP, Telnet, TFTP, FTP, LPD, RARP, DHCP

Management and Diagnostics

Standard: SNMP

MIBs: MIB-II (RFC 1213)

Diagnostic LED Indicators: Power, Link/Act, Wireless Quality LPT1, LPT2, LPT3

Environmental and Physical

Power Supply: DC 5V 1.6A

Dimensions: 223.3mm × 131.7mm × 35mm

Weight: approx. 460g

Operating Temperature: 0 to 50°C

Storage Temperature: -25 to 55°C

Humidity: 5% to 95% non-condensing

Emissions: FCC Class A, CISPR 22 Class A, VCCI Class 1,

Safety: UL (UL 1950), CSA (CSA950), TUV/GS (EN60950)

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PORT PINOUTS

This appendix shows the pinouts of the Print Server parallel port connector.

Parallel Ports

The following table lists the pinouts of the print server's 25-pin parallel port connector (identical to the connector used on most personal computers), as well as the 36-pin Centronics connector used on most printers.

Signal names beginning with *n* are active-low signals.

25-pin	Centronics	Signal	Source
1	1	nStrobe	Host
2	2	Data 1	Bi-directional
3	3	Data 2	Bi-directional
4	4	Data 3	Bi-directional
5	5	Data 4	Bi-directional
6	6	Data 5	Bi-directional
7	7	Data 6	Bi-directional
8	8	Data 7	Bi-directional
9	9	Data 8	Bi-directional
10	10	nAck	Printer
11	11	Busy	Printer
12	12	PError	Printer
13	13	Select	Printer
14	14	nAutoFd	Host
15	32	nFault	Printer

25-pin	Centronics	Signal	Source
16	31	nInit	Host
17	36	nSelectIn	Host
18-25	16, 17, 19-30	Ground	

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link product described below ("Hardware") will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below ("Warranty Period"), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a

material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered: The Limited Warranty provided herein by D-Link does not cover: Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or

removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

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Register your product online at:
http://support.dlink.com/register

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.