

DPH-100 IP Phone User's Guide

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FCC Warning

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interface.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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1 Introduction

This manual describes the D-Link DPH-100 IP (Internet Protocol) telephone and explains how to configure and operate it.

The DPH-100 is a fully featured IP telephone that allows both business and residential customers to benefit from IP telephony services. It reduces costs by providing access to local and long-distance voice and data services over a single network connection.

This easy-to-use IP phone plugs directly into the local area network through a standard RJ-45 jack. The IP phone utilizes 10/100-Mbps Ethernet for connectivity and supports a full range of telephone network features. In addition, it provides access to a host of features for business applications, including hold, mute, and speakerphone operation. The DPH-100 is equipped with a 2x16 LCD panel for easy configuration and use.



Features

- Operates as an Internet IP phone
- Compliant with MGCP 1.0 and NCS 1.0
- Compliant with H.323v2
- Compliant with SIP (RFC2543)
- Connects directly to 10/100-Mbps Ethernet
- DHCP client or static IP addressing
- Large LCD panel (2 lines x 16 characters)
- Configurable through LCD-driven menu prompts
- Speakerphone function with automatic echo cancellation
- Silence suppression and comfort noise generation for a completely natural user experience

- DTMF tone generation
- Remote software upgrade support
- Visual status indicators
- Communication interface:
 - LAN jack: RJ-45 for Ethernet (MDI-II)
 - PC jack: RJ-45 for Ethernet (MDI-X)
- Communications protocols: TCP/IP, UDP
- Voice compression: complies with G.711 μ-law, G.711 A-law, G.723 and G.729
- User-adjustable volume control

Unpacking

Open the shipping carton and carefully remove all items. In addition to this user's guide, make sure you have received all of the following items:

- IP phone
- Handset
- Handset cord
- Power adapter (12V DC at 1A)

If any item appears to be missing or damaged, please contact your local reseller.

Operation Requirements

- Internet connection (via ISP)
- Local power outlet

External Parts and Their Functions



Figure 1 The Parts of the Phone

1	HOOK SWITCH	Switches the phone on/off hook.							
2	LCD Screen	Presents on-line messages and configuration settings.							
3	HOLD INDICATOR	ON when the HOLD function is in effect.							
4	FUNCTION	Selects configuration menus.							
5	REVIEW UP/DOWN	Move forward and backward through menu items; move the cursor up and down.							
6	DELETE	Deletes the character to the left of the cursor.							

3

7	REDIAL	Dials the last number you called.
8	MEMO	Shifts the state to editing the name and number of the Speed Dial and Address Book, or stores the configuration in non- volatile memory.
9	MUTE	Turns sound pickup off and on.
0	FLASH	Transfers the call or clears the input string.
1	HOLD	Turns sound transmission and reception off and on.
Ð	DIAL PAD	0,1,2,3,4,5,6,7,8,9,*, #.
ß	RING/ SPEAKER VOLUME CONTROL	Increases or decreases ring volume or speakerphone volume during a call.
14	SPEAKER PHONE	Enables/disables the speakerphone function.
Ð	ENTER	Confirms input or goes to the displayed submenu.
16	ESC	Cancels input or returns to the previous menu.



Figure 2 Handset Controls

T	HANDSET VOLUME CONTROL	Adjusts listening volume on a call to Low, Medium, or High (default setting is Medium)
18	HANDSET CONNECTOR	Connector for the handset cord.

4



Figure 3 Connectors

19	POWER	Power adapter receptacle.
20	LAN ETHERNET	10/100BASE-TX LAN to ITSP Internet connection.
2)	PC ETHERNET	10/100BASE-TX connection to PC.

2

Phone Installation and Indicator Functions

Installation Procedures

The following are steps to install and power on your DPH-100 IP phone.

- 1) Plug the RJ-45 Ethernet cable into the LAN jack.
- 2) Plug the power adapter into the appropriate wall outlet.
- 3) Plug the power adapter plug into the power jack (DC 12V/1A).



Figure 4 Installation Connections

LED Indicators

	Condition	Color	Timing
LAN Port LED	Link OK	Green	Steady
	Activity (Link in Use)	Green	Flashing
	Speed 10/100 Mbps	Green	ON: 100 Mpbs
			OFF: 10 Mbps
PC Port LED	Link OK	Green	Steady
	Activity (Link in Use)	Green	Flashing
	Speed 10/100 Mbps	Green	ON: 100 Mpbs
			OFF: 10 Mbps

3 Configuration

Configuring the Phone Using a Web Browser

Setting Up the Connection

In order to use a Web browser to configure the DPH-100 IP phone, you must make sure the phone has a valid Ethernet connection to a PC or LAN via its Ethernet port. We recommend using a recent version of any widely used browser. The browser must have JavaScript enabled.

The phone comes with a default IP address of 10.1.1.100. You must make sure the PC is in the same IP domain as the IP phone. You can do this by changing the IP address of the PC as shown below.

Microsoft TCP/IP Properties ? 🗙
IP Address DNS WINS Address DHCP Relay Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Ada <u>p</u> ter:
<u>O</u> btain an IP address from a DHCP server <u>S</u> pecify an IP address
IP Address: 10 . 1 . 1 . 102
Subnet Mask: 255 . 0 . 0 . 0
Default <u>G</u> ateway: 10 . 1 . 1 . 254
Advanced
OK Cancel Apply

Once this is done, run any recent, JavaScript-enabled browser on the PC and point it to the default IP address of the phone as shown below:



This is the main page of the phone's embedded Web-based configuration utility. This page shows you a welcome message and information about the phone for your reference. There are three choices for you on this page: Download, Configuration and Reset.

SIP Configuration Page

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On this page you can set *network*, SIP, *CODEC*, *Security,SNMP* and *clock configuration* according to your requirements. After completing configuration, you must choose the Save button to store the settings in the phone's non-volatile memory, then reset the phone to activate the new configuration.

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Network Configuration Page

This is the IP phone network configuration web page. On this page, you can set the network parameters according to your network environment. These include the DHCP option and fixed-IP address/subnet/gateway settings. After adjusting the settings, you must click the Save button to save your new configuration.

You can set the phone to get its IP address from a DHCP server or to use a fixed IP address.

- **Using DHCP to get an IP address:** When *DHCP* is chosen, the IP phone will attempt to obtain its IP settings from a DHCP server.
- Using a fixed IP address:
 - IP Address: Enter a valid IP address for the phone.
 - IP subnet mask: Enter the correct subnet mask for the phone.
 - o Default Gateway: Enter an IP gateway for the phone.
 - o DNS Server: Enter a DNS server IP address.
 - o DNS Host: Enter a DNS server host name.
 - o DNS Domain: Enter a DNS server domain name.

Security Configuration Page

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D-Link Building Networks for People	D-Link IP Phone Security Possword	
Download	New password Confirm new password	
Configuration		
Reset	Save	
e Done) Internet

This is the IP phone's security password configuration page. You can set a password to protect your IP phone's configuration from unwanted tampering by other users. After changing the setting, you must click the Save button to save your new configuration. The default password setting is an "empty string," that is, nothing.

SIP Configuration Page

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This is the SIP configuration page. You can set the Server IP address, dial plan, phone number, and phone name. After completing configuration, you must click the Save button to save your new configuration.

- SIP Server IP Address: Enter the IP address of the Server for the phone.
- Dial Plan: The DPH-100 allows provisioning of the dial plan via a Web browser. A dial plan gives the unit a map to determine when a complete number has been entered and should be passed to the Server for resolution into an IP address. Dial plans are expressed using the syntax described in the MGCP NCS specification.

Example: A dial plan of (x.T|xxxx) will match immediately if 5 digits are entered; it will also match after a four-second pause during which no digits are entered.

The Timer T is activated when it is all that is required to produce a match. The period of timer T defaults to four seconds.

- Phone Number: Enter the phone number for the IP phone.
- Phone Name: Enter the phone name for the IP phone.

CODEC Configuration Page



This is the codec (compression/decompression) configuration page. You can select the voice codecs G.711 μ -law, G.711 A-law, G.723 and G.729 on this page. After configuration, click the Save button.

Clock Configuration Page

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This is the clock configuration page. You can specify an NTP (Network Time Protocol) server, select the time zone of your region, and enable or disable adjustment for Daylight Savings Time to ensure that the phone displays the correct local time. After configuration, click the "**Save**" button.

- NTP Server IP: Enter the IP address of the NTP server for the phone.
- Time Zone: Select the appropriate time zone from the scrollable list.

SNMP Configuration



- Trap Configuration: Enter the Trap server IP address and the community name of the trap manager.
- SNMP Community Configuration: Enter the community string for access right.
- SNMP System Configuration: Enter the system description and interface description.

Download Page



This page is used to upgrade the phone's SIP application software image. When you click this page's single button, you will be taken to the TFTP download page, and the phone will be restarted in download mode (see below for details).

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Download Configuration Reset	IP Phone Download	
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This is the TFTP download page. Both of the input boxes on this page must be filled in for the TFTP download function to work.

- TFTP Server: This is the IP address of the TFTP server where the application software image (also known as the "runtime file") is located.
- Filename: This is the complete name, including path, of the runtime image file on your TFTP server that is to be downloaded to the device.

Fill in the IP address of your TFTP server and the full path and name of the software image file to be downloaded to the phone. Click Start Download to make the phone request the file from the server. When the download is finished, click the Reset button on the Reset page.

Reset Page



This is the IP phone reset system web page. You can reset the IP phone device through the web browser by clicking the "**Reset**" button.

Configuring the Phone using the Keypad and LCD

After power is applied, the LCD panel will display the time on the first line and the phone's name on the second line. To configure the phone, press the **Function** button, enter the password if one is set, and then press the **Enter** key. (The default password is Null <Empty>.) After successful password authentication, menu names will be displayed on the LCD panel, and you can step through them by pressing **Review** \checkmark or \blacktriangle . Press the **Enter** button to access the named menu and modify the settings in it; press the **ESC** button to exit any menu but the main menu. The Function menu is hierarchical and similar to the Web page configuration, as shown below.

Main Menu	Sub-Menu		
Password			
	<enter password=""></enter>	<enter number=""></enter>	<1~8 digits>
IP Configuration			
	DHCP	<enter *="" ↓↑#=""></enter>	
	Fixed IP Address	IP Address	<enter a.b.c.d=""></enter>

Keypad Configuration Menu

		Subnet Mask	<enter a.b.c.d=""></enter>
		Gateway IP	<enter a.b.c.d=""></enter>
		DNS Server IP	<enter a.b.c.d=""></enter>
		DNS Host	<enter string=""></enter>
		DNS Domain	<enter string=""></enter>
Security Configuration			
	New Password	<enter number=""></enter>	<1~8 digits>
	Confirm Password	<enter number=""></enter>	<1~8 digits>
SIP Configuration			
	Server IP	<enter a.b.c.d=""></enter>	
	Server Port		
	Domain Name		
	Dial Plan	<enter string=""></enter>	
	Phone Number	<enter number=""></enter>	<1~20 digits>
	CallerID Name	<enter string=""></enter>	
	Client Port		
	Auth Username		
	Auth Password		
Codec Menu			
	None (Use default G.711 codec)	<enter></enter>	
	G.723(G.711 +G.723)	<enter></enter>	
	G.729(G.711 +G.729)	<enter></enter>	
Clock Menu			
	NTP Server address	<enter a.b.c.d=""></enter>	
	Time Zone	<enter *="" ↓↑#=""></enter>	
	Daylight Saving	Yes	<enter *="" ↓↑#=""></enter>
		No	<enter *="" ↓↑#=""></enter>
	1		

After change settings, press "**MEMO**" to store the changes in the phone's non-volatile memory, or the changes will disappear after a power reset.

Note: The key buttons behave as shown below only when the configuration menu is active

(To activate the keypad configuration menu, press button <**FUNCTION**>.)

- 1. **FUNCTION**: Inactivate configuration menu.
- 2. **MEMO**: Store configuration back to the Flash.
- 3. **FLASH**: Clear user input string and reset the cursor to the beginning.
- 4. **DELETE**: Delete user input character; same as <Back Space>.
- 6. **Enter <#>** : Go to the submenu or to confirm user input.
- 7. **ESC** <*> : Return to the upper menu or to ignore user input.

4

Additional Features

REDIAL

- 1. The IP phone remembers the last phone number dialed.
- 2. To dial the same number again, off-hook the handset or press Speakerphone button, listen for a dial tone, and then press the **REDIAL** button.

MEMO

- 1. Shift the state to editing the name and number of the Speed Dial & Address Book.
- 2. Edit Speed Dial Address Book And Make a Call via Speed Dial:

Making a Call via Speed Dial



Making a Call via Speed

Editing Speed Dial Addresses



Edit Speed Dial Address Book

MUTE

- 1. Disables the voice packet transmission to the phone's network interface.
- 2. To enable/disable MUTE, press the $\ensuremath{\textbf{MUTE}}$ button during a call.

FLASH

- 1. Flash to transfer the call
- 2. To transfer the call, simply press the **FLASH** button.

HOLD

1. Press HOLD button to hold a call and press again to release.

Speakerphone

- 1. To dial or talk without picking up the handset.
- 2. To take the advantage of the speakerphone, first press the Speakerphone button and make sure the IN USE LED lights up.
- 3. Next, enter the destination phone number via the dialing pad.
- 4. Press the Speakerphone button again when finished with the call.

A

Specifications

Call Control Protocol Compliance:

MGCP, H.323 ,SIP

Internet Protocol Compliance:

TCP/IP, UDP, ARP, TFTP, ICMP, Telnet, HTTP

Available Audio Compression Schemes

G.711 $\mu\text{-law},$ G.711 A-law, G.723, G.729

Signal Format: DTMF

Echo Cancellation: G.165

DTMF tone detection/generation

IEEE 802.3 10BASE-T Ethernet compliant

IEEE 802.3u 100BASE-TX Ethernet compliant

LEDs

LAN: 10/100M, Link/Act

PC: 10/100M, Link/Act

Dimensions

162 mm (W) x 223 mm (D) x 82 mm (H)

Number of Ports

Two RJ-45 ports:

LAN: NWay 10/100BASE-TX Fast Ethernet port (MDI-II)

PC: NWay 10/100BASE-TX Fast Ethernet port (MDI-X)

Power Supply

AC-to-DC power adapter (provided)

DC Input: 12VDC/1A

Operating Temperature

0°–40° C

Storage Temperature

-10°–60° C

Humidity

5%-95% non-condensing

Safety

UL/CUL, CSA

Emissions (EMI)

FCC Class B VCCI Class B BSMI Class B CE Class B

C-Tick Class B

D-Link Offices

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U.S.A.	D-LINK U.S.A. 53 Discovery Drive, Irvine, CA 92618, USA TEL: 1-949-788-0805 FAX: 1-949-753-7033 BBS: 1-949-455-1779 & 1-949-455-9616 INFO: 1-800-326-1688 URL: www.dlink.com E-MAIL: tech@dlink.com & support@dlink.com

Registration Card

Print, type or use block letters.

Your name: Mr./Ms		
Organization:	Dept.	
Your title at organization:		
Telephone:	Fax:	
Organization's full address:		

Country: Date of purchase (Month/Day/Year):

Product Model	Product Serial No.	* Product installed in type of computer (e.g., Compaq 486)	* Product installed Computer serial No.

(* Applies to adapters only)

Product was purchased from:

Reseller's name:

Telephone: Fax: Reseller's full address:

1. Where and how will the product primarily be used? □Home □Office □Travel □Company Business □Home Business □Personal

2. How many employees work at installation site?

□1 employee □2-9 □10-49 □50-99 □100-499 □500-999 □1000 or more 3. What network protocol(s) does your organization use ?

4. What network operating system(s) does your organization use ?
D-Link LANsmart DNovell NetWare DNetWare Lite DSCO Unix/Xenix
DPC NFS D3Com 3+Open DBanyan Vines DDECnet Pathwork
Windows NT DWindows NTAS DWindows '95 DOther______

5. What network management program does your organization use ? □NetView 6000 □Other

6. What network medium/media does your organization use ? □Fiber-optics □Thick coax Ethernet □Thin coax Ethernet □10BASE-T UTP/STP □100BASE-TX □100BASE-T4 □100VGAnyLAN □Other_

7. What applications are used on your network? Desktop publishing DSpreadsheet DWord processing DCAD/CAM Database management DAccounting DOther_____

8. What category best describes your company? Decrospace DEngineering DEducation DFinance DHospital DLegal DInsurance/Real Estate DManufacturing DRetail/Chainstore/Wholesale DGovernment DTransportation/Utilities/Communication DVAR DSystemhouse/companyD0ther_____

9. Would you recommend your D-Link product to a friend?

□Yes □No (why?) _ □I don know yet

10. Your comments on this product:

