

USER MANUAL

DAMALL D-2304

IP PHONE



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1 Introduction

Thank you for choosing Damall products. This manual provides general guidelines for correct use of the product. For further information about Damall or to receive technical assistance please visit our website: www.damalltech.com.

2 Security Information

The security details discussed below should be followed when using this device. Avoid unnecessary risks by complying with these guidelines.

2.1 Correct Usage

Only use this device in its standard working position.

2.2 Qualified Personnel

Damall products, including this device, should have installations or repairs carried out only by qualified and fully trained technicians.

2.3 Accessories

Do not connect the device to any incompatible products. Use only accessories that have been approved by Damall.

2.4 Waterproofing

Do not allow for contact with liquid that may be damaging to the product. The device is not waterproof.

2.5 Other Devices

If a Damall product is connected with other products, it is important to read the user guide of the other equipment. Do not connect the device to any incompatible products.

2.6 Device Environment

Do not place the device near sources of intense heat like radiators or fires which may cause damage. Do not place the device near electronic equipment that produces strong magnetic fields like speakers or microwave ovens. Do not allow prolonged exposure to direct sunlight. Do not install the device in humid rooms and avoid contact with liquids. Do not expose the device to aggressive gas and do not use it in overly dusty environments. Never use the device in the presence of any explosive gas. Do not open any parts of the product. Do not touch the plugs with metal or sharp objects.

2.7 Power Supply

The device's power supply should comply with the voltage of the device. In the event of a concern about the voltage settings, please contact technical support. Do not remove any security devices. Always disconnect the telephone from the power supply during storms. All maintenance work should be carried out by qualified technicians.

2.8 Cleaning

Clean the equipment using a slightly damp cloth. Do not use an acid cleanser. A dry cloth may damage the device with an electrostatic charge. No water or moisture should enter the device.

2.9 Product Disposal



Damall products are compliant with FCC Part 15B and European Directives 2002/95/CE, 2002/96/CE and 2003/108/CE regarding the limitation of use of lead, mercury, cadmium, chromium (VI), flame retardants and hazardous materials within electric and electronic equipment and disposal.

The sign above representing a crossed waste bin indicates that the product, once no longer utilised, <u>must be disposed of by separating it from any normal waste</u>. The user must ensure that the product, upon reaching its end life, is given to qualified organisations responsible for the collection of electrical and electronic waste. The user may otherwise choose to return the equipment to the manufacturer when purchasing a new equivalent device. In this case the product returned must correspond to the one being purchased. Suitable disposal of the equipment in accordance with relevant recycling guidelines helps the environment and fosters sustainable development. Unlawful disposal of this equipment is an offence and may lead to prosecution in accordance with the country's laws in which the disposal takes place.

Correct disposal benefits us and the environment.

2.10 Product Warranty

Damall warranty information is dependent on each customer, and the rules and regulations pertaining to their country of business. This guideline pertains to Damall's standard basic warranty.

The Manufacturer, Damall Limited, warrants its products to be free from defects in material and workmanship during the warranty period. The product is covered by warranty only if it is used in compliance with the instructions and guidelines contained in this manual. The warranty will be invalidated in the event of incorrect usage or accidental damage. This product is compliant with FCC and CE regulations.

The warranty period starts from the date the product has been purchased (stated on the purchase invoice) and will last for twelve (12) months thereafter. If a product proves to be defective in material or workmanship during the warranty period, The Manufacturer will, at its sole discretion, repair or replace the product with a similar one (new or reconditioned). The replacement unit will be covered by

a new warranty period that will last for the remaining time on the customer's original limited warranty. Once replaced, the defective product will automatically become property of Damall Limited.

The warranty will be invalidated in the following cases:

- Damage to any parts that are meant to wear out with time. No support, maintenance or replacement will be provided for these components.
- Damage resulting from using an incorrect power supply.
- Damage resulting from misuse or actions that do not comply with the instructions and guidelines in this manual.
- Damage resulting from lack of maintenance.
- Damage resulting from installing or using the product without complying with the relevant standards (legal, health and safety, technical, etc.) that are in place in the country where the product is used.
- Damage resulting from misuse, negligence, unauthorized product modification, repair or attempted repair by anyone not authorized by Damall (including the user) or failure to follow instructions supplied with the product.
- Damage caused during product transportation or delivery due to insufficient or inappropriate packaging.
- Damage caused by accident, fire, water, any acts of nature, insufficient ventilation or other causes that do not fall under the control of Damall.
- Damage caused from any unintentional or deliberate human acts.
- Damage caused in conjunction with warranty labels being broken.
- Damage to any software or hardware component not supplied by Damall with the product.

3 General Information

The D-2304 is a stand-alone device that requires no connection to a PC to make phone calls. As well as providing the same features of a traditional telephone, the D-2304 supports both data and reliable voice quality through an IP network. It is fully compatible with SIP industry standards and can interoperate with any IP PBX system. The integrated switch allows a connected IP device LAN access.

3.1 Package Contents

- D-2304 IP Phone
- Handset
- Handset cable
- Universal power adapter
- Ethernet UTP5 cable (3 m)
- User manual

3.2 General Specifications

Description		D-2304
Power supply		100-240VA/5VDC/60Hz
CPU		150MHz
Ports	LAN	10/100Base T RJ-45 per LAN
	PC	10/100Base T RJ-45 per PC
Power absorption		1.8W/1.4W
Preferred temperature		0 ~ 50°C
Preferred Humidity		5 ~ 65%

3.3 Before Starting

- Check if the LAN and server are running correctly
- Create user identities on the server

3.4 Getting Started

3.4.1 Basic Installation

 Connect the LAN Ethernet port to the switch/router/hub using an Ethernet UTP5 cable (not a crossed cable)

- Connect the PC Ethernet port to a PC using an Ethernet UTP5 cable (not a crossed cable) if required
- Connect the MOD Ethernet port to the memory module DM-2604 using an Ethernet UTP5 cable (not a crossed cable) if required
- Connect the power supply to the Power plug
- Turn on the power switch at the back of the unit

This device is provided with a ground connection. Use the device only in a fully grounded electric system, with Residual Current Device (RCD) and relevant safety measures as prescribed by law.

3.4.2 Network Installation

See Sections 5 and 6 for details on how to connect the phone either using the Phone LCD Interface or the Web Interface.

3.4.3 LCD Display

The D-2304 telephone has a backlit green LCD display with several indicators.

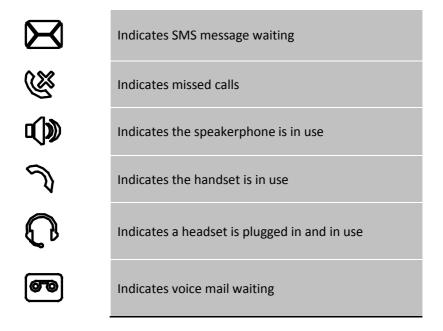
Indicator



Definition

Indicates network status. When blinking the network is not connected.

Indicates the status of the DHCP server. When blinking the phone is unable to connect to the DHCP server. Off when the phone is set to Static IP.



3.4.4 Key features

The D-2304 provides the same functionalities of a traditional telephone, as well as providing a wide range of features when connected to a server.

Some key features:

- Integrated switch (supports DHCP or Static IP)
- Protocols supported: TCP/UDP/IP, HTTP, DHCP Client, FTP
- VoIP protocols: SIP (RFC3261)
- Voice coding: g711 (α -law/ μ -law)
- Configurable protocol ports (Telnet, HTTP, FTP)
- Support includes: Caller ID, Hold, Call Forwarding, Blind and Attended Transfer, Do-Not-Disturb, DTMF tones, Quick number, and Autodial
- Show user status (with a server)
- Customisable multifunction keys

- Full duplex speakerphone, redial, call log, adjustable volume
- Voice recording (with a server)
- Standard encryption and authentication (DIGEST using MD5)
- Many configuration options keypad, LCD, web interface or Telnet
- TFTP or HTTP configuration uploading
- Upgrade via TFTP/FTP or HTTP server
- Configurable syslog server

4 Basic Operation

4.1 Getting Familiar



See below a quick description of the functions linked to each button:

Button	Description
NAVIGATE	5 buttons – 4 directional buttons (UP, DOWN, RIGHT, LEFT) and a central OK button
Up/Down	Go to the previous / next item in the interface MENU. This will also adjust the volume of the handset or the speaker.
MULTIFUNCTION 1-3	Three multifunction buttons that are situated beneath the LCD screen which are used in the Menu and with other functions.
MENU	Access the phone's interface menu when the telephone is not in use.

Ехіт	Cancel functions or exit the interface menu.
DIAL	To dial or to see a redial list
TRAN	Transfer the active call to another number
Hold	Puts the current call on hold
PHONEBOOK	Displays the onboard phone directory
CALL LIST	Shows the incoming and outgoing call lists
HEADSET	Switch to the headset
MUTE	Turns off the microphone
SPEAKER	Turns on / off the speakerphone

4.2 Placing Calls

To start a call:

- Lift the handset or press SPEAKER and dial the number. Press '#' after the number.
- Lift the handset or press the SPEAKER button, and press DIAL to redial the last number called.
- Without lifting the handset, choose an entry in the Phone Book or Call List and press DIAL or lift the handset.

Note that most IP systems require the setup of dialling rules before outgoing calls can be made. See Sections 5.4.5 or 6.6.1 for further details.

4.2.1 Hold

Press HOLD to put a caller on hold. Press HOLD again to retrieve the call. The LCD screen will display when a call is on hold.

4.2.2 Unattended Transfer

Press TRAN during a call to transfer to another number. The display will ask for the transfer number. After entering press '#' or wait for confirmation from the display. This is sometimes called a Blind Transfer.

4.2.3 Attended Transfer

Press Hold during a call. Dial the transfer number, wait for an answer, and press Tran to complete. During an Attended Transfer the Hold button allows for switching between both calls. Pressing '#' or Exit will end the activity.

4.3 Phonebook

This displays the onboard phone book of the phone. Numbers can be added or removed over the LCD interface. Use the NAVIGATE and MULTIFUNCTION buttons to select numbers, and lift the receiver to dial. Use ADD in the menu options to create a new contact name and number. See section 6.7.1 for details on adding numbers using the Web Interface.

4.4 SMS Messaging

To send and receive SMS messages select the leftmost MULTIFUNCTION button. Follow the on-screen instructions to read, send and delete SMS messages. Use the keypad to enter SMS messages. At any time EXIT will quit the SMS application.

4.5 Do Not Disturb

Press the rightmost MULTIFUNCTION button while the phone is inactive, to put the phone in 'Do-Not-Disturb' mode. Once doing so, the screen will display 'Do Not Disturb' until the same button is pressed again, ending the mode.

The LCD screen displays DND above the MULTIFUNCTION button as an indicator of which button to use.

4.6 Memory Key DM-2604

The D-2304 has an RJ-45 jack marked MOD, which can link it to a memory extension module. The DM-2604 module contains 20 configurable memory keys which can be used as quick call buttons, allowing new calls as well as showing (with their LED lamps) the state of any users linked over the same network.

To configure stored numbers through the LCD interface:

- Press the M# memory key button
- If assigned, the stored number will be shown on the LCD display
- If not assigned the display will show 'Null'
- Press Edit
- The display will show
 - o Title:
 - o Number:
- Use the Navigate buttons and enter the title and number using the keypad
- Press SAVE; the display will show 'Saving' and the number
- Press Exit or END in order to stop at any time

See Section 6.7.2 to configure the Memory Key in the Web Interface.

5 Phone LCD Interface

The phone interface can be accessed by pressing MENU on the phone. Other navigation within the menu is done using the directional NAVIGATE keys, the OK button, and the MULTIFUNCTION buttons directly beneath the LCD display. The menu may be closed at any time by pressing EXIT.

5.1 Display

These options control the contrast and brightness of the LCD display.

5.2 Ring Tone

This sets the volume of the phone's ringer and also selects between the phone's different built-in ring tones.

5.3 Volume

This controls the volume of the handset, the microphone, and the speakerphone.

5.4 Phone Setup

This controls some of the different phone options available. These options must also have been made available on the server or the phone will not be able to use them, regardless of any settings.

5.4.1 Do Not Disturb

Reject all incoming calls.

5.4.2 Call Forwarding

This configures calls to forward to a specified number. Enter the number to forward calls to, and select one of the four settings.

Off	No call forwarding
Always	Always forward calls

Busy	Forward calls only if the line is busy
No Answer	Forward calls if there is no answer on the line

5.4.3 Call Waiting

Enable call waiting.

5.4.4 Autodial

This option sets an outgoing number that the phone will automatically dial each time the receiver is lifted. No other numbers can be called from the phone.

5.4.5 Dialling Rules

This configures the three SIP handlers which indicate the end of an SIP dialling session. With most IP phone systems, no outgoing calls can be made unless at least one of these is selected:

End with '#'	Calls are placed after the # key is pressed. This is the default setting for the device.
Fixed Length	Calls must be a set number of digits long. Calls are placed once a set number of digits have been entered.
Timeout	Calls are placed after a set delay has elapsed. This is a measurement, in seconds, for how long the phone waits after a number has been entered before placing a call.

5.4.6 Greeting Word

This controls the text displayed on the LCD panel when the phone is on. Use the alphabetical values on the number pad to enter text.

5.5 Network Setup

Network setup is for configuring the phone's SIP and network settings. To enter the Network setup a password is required. The default password is: **123**

To check for existing network settings use the Navigate buttons. Pressing $\mathfrak Q$ (Down) displays the network mode (either DHCP or static), the IP address of the phone, and

the network gateway. Pressing \Rightarrow (RIGHT) displays the status and IP address of the SIP server.

5.5.1 SIP Setup (1 and 2)

Configure the options to enable each SIP account:

Enable Identity	Enables the SIP account
Server Address	IP address of the SIP server
Server Port	Port number on the SIP server
Display Name	The extension number of the phone
Account Name	The user ID created for the SIP line
SIP Password	Password as created on the server

5.5.2 Network

To configure the phone's network adapter use these settings.

Network Mode	Set to either DHCP or Static. DHCP means that a server will assign network properties to the phone. In Static network mode, additional settings are needed.
Static Setup	Set up the Static IP of the phone the same way that any static IP connection would be set up. Assign an IP address, a Subnet Mask, a network gateway, and a DNS address.

When using the keypad to enter the Static address, the * key is used as a dot separator. For example, entering: 192*168*0*12 sets the IP address to 192.168.0.12. All four items need to be configured for the phone to function.

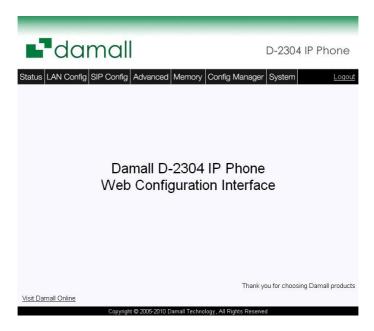
5.5.3 Change Password

Use this to change the password for the Network Setup options.

5.6 Reboot

This reboots the device.

6 Web Interface



6.1 Basic Access

To access the D-2304's Web Configuration Menu enter the URL of the phone's IP address in a web browser.

To check the phone's existing network settings use the navigation pad on the phone. Pressing \mathbb{Q} (Down) displays the network mode (either DHCP or static), the IP address of the phone, and the network gateway. Pressing \Rightarrow (RIGHT) displays the status and IP address of the server.

If there is no DHCP server use the Phone interface as described in Section 5.5.2 to set the phone's IP address.

When using the web interface, remember to press the "Apply" button after modifying the settings. To save changes on the telephone's flash memory press the "Save" button after editing the IP address.

To activate some of the changes (e.g. IP and memory key assignments) the telephone may need to be restarted.

6.2 Login

To login the web interface a username and password are required.



The D-2304 default is:

Username: admin
Password: admin

Press Enter or click 'Login' after typing the login data.

To change the password, see Section 6.9.1.

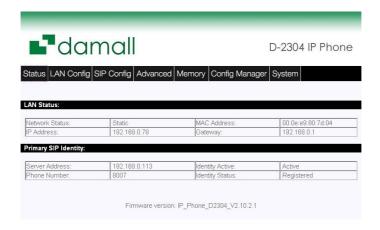
Note: The auto-logout timeout is 2 minutes. If the interface is left inactive for more than 2 minutes, users are automatically logged out and any unsaved changes are lost.

6.3 Status

This page contains information about the telephone status:

<u>LAN</u> includes D-2304 network details: IP address type (static or DHCP),
 MAC address and IP address.

- <u>SIP</u> includes details concerning the SIP protocol (SIP), such as the registered server IP address, registration status and SIP phone numbers.
- Firmware version is on the bottom of the page.



6.4 LAN Config

To define the network settings for the D-2304 select the type of IP address used – either Static or DHCP.

If DHCP is selected, the phone should automatically detect an IP address. When selecting Static IP address the phone's IP address, the Subnet Mask and the DNS server IP address, all need to be specified. .

The D-2304 display shows the current IP address assignment mode.

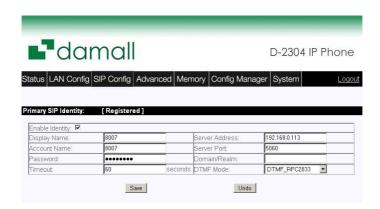
No special configuration is required for any device connected to the Phone's PC port.



6.5 SIP Config

This page is to enter details for logging into an SIP server. If the D-2304 is not logged into an SIP server, none of the D-2304 functions will be usable – including making and receiving calls.

Before proceeding, create a new user account on the server. Any network firewalls will need to be configured to enable UDP traffic on port 5060.



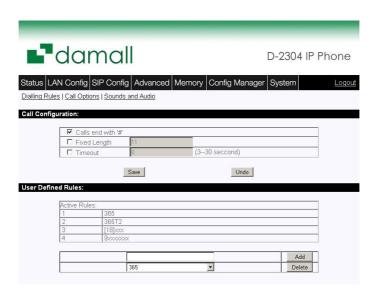
Enable Identity	Enable the SIP Identity
Display Name	Phone extension display text; must be defined on
	the server
Account Name	SIP Authorisation Username
Password	SIP password as configured on the server
Timeout	Registration expiry time
Server Address	SIP Server address
Server Port	SIP server destination UDP port (default 5060)
Domain/Realm	If a domain is used
DTMF Mode	DTMF send mode; select one of the options

6.6 Advanced Configuration

6.6.1 Dialling Rules

This determines SIP behaviour when dealing with incoming and outgoing calls.

While an analogue telephone can relay numbers one digit at a time, when using the SIP protocol this is not always the case. Choose one or more of the following three options for completing a number.



End with '#'	Calls are placed after the # key is pressed. This is the
	default setting for the device.
Fixed Length	Calls must be a set number of digits long. Calls are
	placed once a set number of digits have been entered.
Timeout	Calls are placed after a set delay has elapsed. This is a measurement, in seconds, for how long the phone
	waits after a number has been entered before placing a
	call.

Please note that with most SIP systems, outgoing calls cannot be made unless at least one Dialling Rule is selected.

6.6.2 User Defined Rules

It is possible to define a set of rules to allow the IP Phone to recognise specific numbers, regardless of the settings in 6.6.1. These rules are put into the Digital Map Table.

In the text field, enter the desired rule and click 'Add' to save it. Use the syntax code explained in the table below set new rules. See the examples given for further clarification.

Х	Any digit between 0 and 9
[]	A range of numbers This must be defined either by using the min/max or by listing the digits separated by commas. Examples: [1,5,9] means only 1, 5 and 9 are allowed [15] means all numbers between 1 and 5
T(n)	Determines the delay time after which a call is started following the last key pressed. The value (n) is expressed in seconds, and must always be placed at the end of the rule.

Rule Examples:

365 When dialling 365 the ATA immediately starts a call to the number

without any delay. This means that it is not be possible to make

any calls to numbers that start with 365.

365T2 Same as the above example, but which only dials the number after

a 2 second delay to avoid conflicts. It is important to add a timeout at the end of this rule so that the ATA will start a call if no digits

are entered.

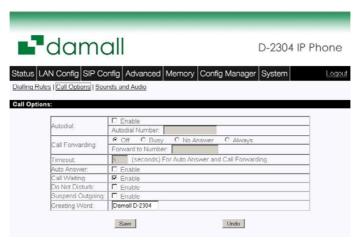
[18]xxx Any four digit numbers between 1000 and 8999.

9xxxxxxx Any 8 digit numbers starting with 9

All rules entered are displayed in the Digital Map Table. To delete a rule select it from the drop down menu and click 'Delete'.

6.6.3 Call Options

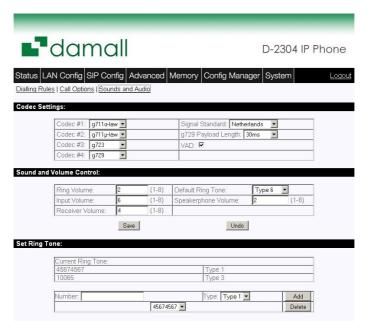
This page Enables and Disables some D-2304 services:



Autodial	This setting specifies a fixed number that is automatically dialled whenever the handset is lifted.
Call Forwarding	 This configures call forwarding to a specified number. Enter the number calls should forward to, and select one of the four settings: Off – no call forwarding Always – always forward calls Busy – forward calls if line is in use No Answer – forward calls if there is no answer on the line
Timeout	Sets the delay time for Auto Answer as well as the timeout for the No Answer option in Call Forwarding.
Auto Answer	When enabled all incoming calls are answered without any ringing after a set interval has elapsed.
Call Waiting	Enables / Disables call waiting
Do Not Disturb	Reject all incoming calls
Suspend Outgoing	Block all outgoing calls
Greeting Word	The text to display on the phone LCD panel

6.6.4 Sound and Audio

This configures audio codecs, signalling types and volume. These need to be configured on the server as well as on the D-2304.



Codec Rules	Codecs used for calls
Signal Standard	The signal produced after calls. Should be set to different country standards
g729 Payload Length	Select one of the options
VAD	Check to enable Voice Activity Detection
Ring Volume	The volume of the phone's ringer
Input Volume	The volume of any microphone devices connected
Receiver Volume	The speaker volume of the handset or any connected audio device
Default Ring Tone	Select one of the phone's built-in ring tones
Speakerphone Volume	The volume of the speakerphone

The Set Ring Tone options allow users to associate one of the built-in ring tones with a specific incoming number.

6.7 Memory

6.7.1 Phone Book

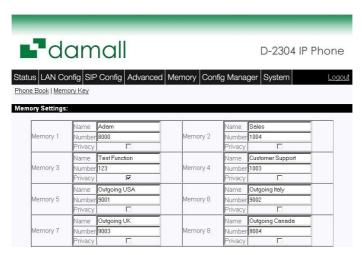
The D-2304 has an onboard phone book. Add new entries with the 'Add' button and fill in the contact fields: Name, Number, and preferred ring tone. Click 'Submit' button to add. Click 'Delete' to remove.



The phone book is also accessible on the telephone keypad by pressing the Phone Book button. See Section 4.3 for details of how to use the phone book to dial.

6.7.2 Memory Key DM-2604

Each D-2304 telephone is provided with an RJ-45 jack marked MOD, which can link it to a memory extension module. A module contains 20 configurable memory keys which can be used as quick call buttons, allowing new calls as well as showing (with their LED lamps) the state of any users linked over the same network.



Enter the name and numbers for the memory key. Once these have been configured click 'Apply' and reboot the phone.

Name	The identifier to be displayed on the LCD when the memory button is used.
Number	The number or extension to be called.
Privacy	Whether or not to display the name on the LCD screen when the number is dialling.

If the D-2304 telephone is being used with a configured server, each LED lamp next to a memory key will show the status of the associated extension according to the server's configuration.

6.8 Config Manager

This menu is to handle any operations pertaining to the configuration and firmware files of the phone. The file can be erased, or it can be updated in different ways.

6.8.1 Save Config

Use this to save to memory any changes in the IP phone configuration.

6.8.2 Backup Config

Use this to export a text file copy of the firmware configuration.

6.8.3 Clear Config

Use this to RESET the D-2304 to its original default settings.

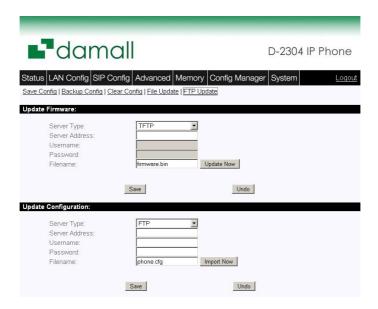
6.8.4 File update

Select a file containing firmware or configuration upgrades. During the upgrade the display of the phone shows "Download" and "Update". Once the upgrade has been completed the phone will reboot automatically.



6.8.5 FTP Update

Phones can import or export configuration files, or update firmware using FTP or TFTP servers.



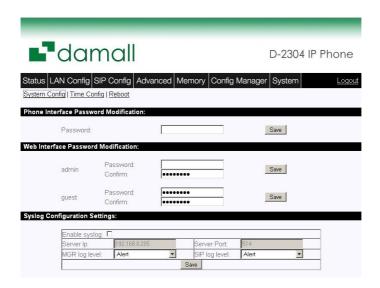
In order to connect with an FTP/TFTP server:

Server Type	Either FTP or TFTP
Server Address	IP address of the server
Username Password	Username and password for an FTP user
Filename	Firmware updates use the ".bin" extension Config updates use the ".cfg" extension.

6.9 System management

6.9.1 Account Configuration

This modifies the usernames and passwords used to access the D-2304's web interface.



To modify a password click 'Modify'.

6.9.2 Syslog Configuration

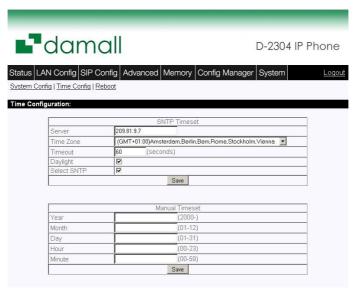
The D-2304 can send information to a syslog server. Enable the Syslog server as a way of troubleshooting or when required by a network administrator. The syslog server must be running within the same LAN as the D-2304.

The following options are to set the connection to the syslog server:

Enable Syslog	This switch enables or disables the feature.
Server IP	The Syslog server IP address
Server Port	The input UDP port for the server (default 514)
MGR Log Level	MGR log level sets the level of detail for the call management log files
SIP Log Level	SIP log level sets the level of detail for the SIP protocol log files

6.9.3 Time Configuration

This page contains all time and date settings. Either set the time manually, or specify an SNTP server that the D-2304 can use to synchronise with its internal clock.



6.9.4 Reboot

Use the reboot button to restart the D-2304. Settings should be saved before a reboot.

7 Advanced Configuration Methods

There are additional means by which the D-2304 can be configured. These should only be attempted by an experienced network administrator. Please contact Damall technical support for help with any questions.

7.1 Phone Configuration

The Phone can also be configured by dialling on the keypad. Please contact Damall for full reference information on Dialling Configuration Codes.

7.2 Telnet Configuration

For users familiar with Telnet, the D-2304 has a telnet interface with all basic telnet commands to configure options.

7.3 Telnet Post Mode

For users familiar with Post Mode, the D-2304 also has this option. The IP address that the connected computer needs to be set to in order to access Post Mode is: 192.168.10.205.

8 Quick Reference

8.1 Default Configuration

The default D-2304 static IP address is: 192.168.0.179

8.2 Default Passwords

Phone Interface: 123

Web Interface:

Username: Admin Password: Admin

Damall IP Phones

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FCC STATEMENT

- 1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.
- 2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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.