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Huawei IP Phone eSpace 7870
Product Description V1.3

(For internal use only)

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Abstract: This document describes eSpace 7870's functions, and features.

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Contents

1 Overview

1.1 Huawei IP Phone eSpace 7870

Huawei IP Phone eSpace 7870 is a manager-edition IP phone that is easy to use, provides rich functions, and features great experiences.

Phone features:

- Six line keys, four soft keys, and ten programmable keys (used to implement specific functions)
- 4.3" TFT LCD screen, 16.7 mega colors
- HD broadband audio
- Double gigabit network ports, PoE, headset port, and extension module port

Product model:eSpace 7870

Figure 1-1 shows the eSpace 7870 IP phone appearance.

Figure 1-1 eSpace 7870 IP phone

2 Product Features

2.1 Multiple Services

The eSpace 7870 IP phone provides a verity of supplementary services in addition to basic calling services, which significantly improves work efficiency.

2.1.1 Basic Call Service

Working with U1900 series or other SIP servers, the eSpace 7870 IP phone can communicate with intra-office analog phones, SIP-based IP phones, Public Switched Telephone Network (PSTN) phones, and mobile phones.

2.1.2 Features

Multiple Channels

An eSpace 7870 IP phone provides six lines. This means it has a maximum of six registered Voice Over Internet Protocol (VoIP) accounts at the same time.

Local Mute

A user can mute or unmute the phone during a call. After muting the phone, the user can still hear the other party, but the other party cannot hear the user.

Calling Line Identification Presentation (CLIP)

When a call is received, the caller's phone number and name are displayed in LCD.

Call History

Call history includes received, missed, forwarded and dialed calls. All the types of call history contains a maximum of 100 records.

Redialing

A user can redial a number that was dialed previously.

Blacklist

A user can create a blacklist. Calls from numbers in the blacklist will be rejected automatically.

Voice Mailbox

Users can press only one button to enter the user-defined voice mailbox.

Multiple Languages

The eSpace 7870 IP phone supports the following languages: English, French, German, Italian, Polish, Portuguese, Spanish, Chinese (simplified and traditional) ,Turkish and Russian.

Local Address Book

The eSpace 7870 IP phone provides a built-in address book that records detailed information about up to 1000 contacts. The address book allows users to edit contact information and search for contacts.

LDAP Address Book

The eSpace 7870 IP phone can connect to enterprises' address book servers, such as Microsoft AD, through the Lightweight Directory Access Protocol (LDAP) interface.

2.1.3 PBX Services

Call Hold Service

The call holding service allows a user to suspend a conversation in progress and resume it later by pressing the appropriate function key on the phone.

Call Waiting Service

The call waiting service works when a user is in the middle of a conversation while a new call comes in. The user hears a call waiting prompt tone, and answers the new call by pressing the appropriate function key on the phone.

Call Transfer Service

The call transfer service allows a user to transfer a call to a specified user. The other party of the call can then talk with the specified user.

Three-Party Service

The three-party service allows a calling party or called party in a conversation to initiate a call to a third party without ending the current conversation. The party who initiates the call can then start a three-party conversation or talk to the other two parties at the same time.

Hotline Service

The hotline service allows a user to be connected automatically to a preset phone number (hotline number) after the user picks up the phone. The user must set a hotline number on the eSpace 7870 IP phone before using the hotline service.

Hunting Group

Enterprise users with the same responsibilities or in the same department can be added to a hunting group. Each hunting group has an access code. When a user dials the access code of a hunting group, terminals of the group members ring simultaneously or sequentially.

Advanced Manager Secretary Service

The advanced secretary service shares a line between two phones. The manager and secretaries on the same shared line can make and reject calls and view the shared line status.

In UC 2.0 solution, IP phones only support scenario one secretary with one manager. The other two scenarios will be supported when the UC server supports this feature.

Busy Lamp Field Service

The busy lamp field (BLF) on the eSpace 7870 IP phone shows the status of common contact.

Distinctive ring tone service

The distinctive ring tone service, users can base on the ring tones to determine the caller belongs to the Council user or outside users.

Do-Not-Disturb Service

The Do-Not-Disturb (DND) service allows a user to block all incoming calls. After the user sets the DND service on the phone, callers will hear a prompt tone when making calls to the user.

2.1.4 UC Services

Displaying Name and Department of the Calling User

When a call is coming, an IP phone can display name and department of the calling user of the information about the calling user has been configured on the IP phone.

Displaying the Picture of the Calling User

When a call is coming, an IP phone can display the picture of the calling user of the information about the calling user has been configured on the IP phone.

Linkage Between an eSpace and an IP Phone

When the eSpace is associated with the IP phone, the IP phone will report the agent status to the eSpace. eSpace can replace the IP phone to answer or reject calls or directly forward calls.

2.1.5 Personalized Services

Customized Ring Tones

The eSpace 7870 IP phone allows users to customize ring tones and set a ring tone for a specified number or user group. The eSpace 7870 IP phone supports at least 6 ring tones type.

Customized Desktop

The eSpace 7870 IP phone allows users to customize their desktops on the LCD, for example, an enterprise's logo or a desired picture.

Extension Board

The eSpace 7870 IP phone supports eSpace 7803X extension boards. Each phone can connect to two eSpace 7803Xs.

LCD Setting

The eSpace 7870 IP phone allows users to customize the LCD settings such as brightness, contrast.

The date and time information can also be displayed on LCD and be updated automatically from a NTP server.

Ring volume

The eSpace 7870 IP phone allows users to customize the ring volume setting with a visual feedback on LCD.

System settings

The eSpace 7870 IP phone allows administrators to finish the system settings centrally through a https web access with account and password.

2.2 High Voice Quality

The eSpace 7870 IP phone uses the following technologies in digital signal processing (DSP):

- Automatic Gain Control (AGC)
- Automatic Echo Cancellation (AEC)
- Advanced jitter buffer
- Packet delay
- Packet loss compensation

The eSpace 7870 IP phone supports international audio codec protocols, including G.711 (A and U frequency) and G.722. It also supports automatic protocol adaptation, choosing a suitable codec protocol for the peer device. These features ensure high voice quality.

The eSpace 7870 IP phone's handset, speaker, and headset provide high-fidelity voice quality.

2.3 DTMF Transmission

The eSpace 7870 supports DTMF transmission by in-band/RFC2833/SIP-INFO.

2.4 Powerful Network Adaptability

2.4.1 Multiple Methods for Obtaining IP Addresses

The eSpace 7870 IP phone applies to various networking environments. A user can manually set a static IP address for the eSpace 7870 IP phone or obtain a dynamic IP address for it through Dynamic Host Configuration Protocol (DHCP) or Point-to-Point Protocol over Ethernet (PPPoE).

The eSpace 7870 IP phone supports IPv4 and IPv6 dual stack.

2.4.2 QoS

The eSpace 7870 IP phone supports Layer 2 (802.1Q, VLAN, or 802.1p) and Layer 3 (ToS and DiffServ) configurations, providing optimal IP phone voice quality.

2.5 Quick and Easy Operation

2.5.1 Easy Installation

To use an eSpace 7870 IP phone, users can connect the phone to the Internet and configure the phone on menus or Web management pages.

The eSpace 7870 IP phone also provides the automatic deployment function. Administrators prepare configuration files on the server. After being powered on, the eSpace 7870 IP phone automatically obtains network and phone configurations. This ensures the plug-and-play convenience.

eSpace 7870 support Technical Report 069 (TR069), after IP phones are connected to the ACS through TR069, you can perform the following operations on the IP phones on the ACS:

- Configuration management

  They can configure and upgrade the IP phones in batches.

- Remote monitoring

  They can monitor the phone status and performance, and query the phone status in real time.

2.5.2 Special function keys

The eSpace 7870 IP phone provides several types of keys, including number keys, line keys, softkeys, navigation keys, special function keys, and programmable keys. Their functions are as follows:

- Softkeys: The LCD shows context-sensitive softkeys depending on the operation that is being performed, greatly simplifying the difficulty in using services.

- Special function keys: These keys are arranged into several areas based on functions. Users can use these functions by simply pressing the keys instead of operating on menus, which makes the eSpace 7870 IP phone easier to use.
- Programmable keys: An eSpace 7870 IP phone provides 10 programmable function keys. Users can configure them for speed dialing or other functions.

2.6 Multiple Auxiliary Ports

2.6.1 Headset Ports

The eSpace 7870 IP phone is equipped with RJ9 headset ports, which allows users to use headsets during calls. Headsets are ideal for frequent phone users who want to free their hands.

By using a third-party wireless extension device, the eSpace 7870 IP phone can also connect to a Plantronics or GN Netcom's wireless headset.

2.6.2 External PC Network Port

The eSpace 7870 IP phone provides 10/100/1000 Mb PC ports. Additional cabling is unnecessary when the phone is deployed with a PC, which reduces cabling costs.

2.7 Enhanced Maintainability

For convenient use and maintenance, eSpace 7870 provides certain maintenance functions for users and administrators to quickly locate and rectify faults on web configuration pages.

2.7.1 Registration Status Testing

The eSpace 7870 IP phone directly displays registration faults, enabling users to obtain registration fault information in real time.

2.7.2 Intelligent Automatic Upgrade

As a terminal, the eSpace 7870 IP phone will be widely used in families and enterprises. Use of new functions or patch installation will require software upgrade.

The eSpace 7870 IP phone can search for upgrade software and complete upgrades automatically. This ensures that the current software is the latest and most stable version and significantly reduces maintenance workload.

2.7.3 Network Management and Maintenance

The eSpace 7870 IP phone provides a standard TR069 to connect to network management software, implementing remote management and maintenance.

2.8 Security Features

The eSpace 7870 IP phone requires a password for access. Users and administrators must set their user names and passwords to ensure the configuration security of eSpace 7870 IP phones.

The eSpace 7870 IP phone supports encryption of media streams by using 128-bit key size Advanced Encryption Standard (AES), preventing any unauthorized listening during a conversation.

The eSpace 7870 IP phone supports SIP signaling encryption based on Transport Layer Security (TLS), preventing signal cracking during a conversation.

Users can securely access eSpace 7870 IP phone's Web pages by using HTTPS .

The eSpace 7870 IP phone supports 802.1x, allowing secure access to Ethernet switches.

A password can be set for a phone so that users without the phone rights need to provide the password to use the phone.   The default password is 111111. This password is also used in the password change feature, remote service activation feature, and feature of deactivating all services.

The password-based call restriction feature can restrict the following types of calls:

Intra-office call

Local call

National toll call

International toll call

3 Technical Specifications

Table 3-1 lists the technical specifications of the eSpace 7870 IP phone.

Table 3-1 Technical specifications of the eSpace 7870 IP phone

Category	Item	Parameter
Standard	Communications protocol	SIP (RFC3261)
	Audio format standard	G.723.1 , G.729AB , G.711A-law/μ -law , G.726, G.722 and iLBC
	Network protocol	TCP/IP/UDP, RTP/RTCP, HTTP, ARP/RARP, ICMP, DNS (SRV), DHCP (client), PPPoE, NTP, TFTP
Audio	AEC(G.168),VAD	
	AGC,CNG,PLC	
	Jitter buffer	
	Volume adjustment	
LCD	Resolution: 480 x 272 pixel, 4.3 inch, TFT color display	
	Background light	
	Language: Chinese (simplified and traditional), English, French, German, Italian, Polish, Portuguese, Spanish, Turkish, Russian	
External interface	Ethernet ports	2, 10/100/1000 Mb
	Headset ports	RJ-9
Function key	Voice mailbox key, headset mode key, call holding key, call transfer key, conferencing key, hands-free key, mute key, delete key, redial key, 6 navigation keys, 6 LINE keys, 10 programmable keys, 4 softkeys, and a volume key	

Category	Item	Parameter
Call feature		Call holding, call transfer, call waiting, DND, call forwarding, call muting, redial, call record, volume adjustment, automatic dialing after pick-up, and automatic response
Security feature		• Signaling encryption: TLS • Voice encryption: SRTP, 128-bit AES • Web access encryption: HTTPS • Switch port: 802.1x and X.509(certification) • Authentication algorithm: EAP-TLS and EAP-MD5
Function	Address book	• Local address book: 1000 contacts • LDAP address book
	Call history	Records the numbers for history calls, consisting of up to 100 received call numbers, missed call numbers, and dialed call numbers with date, time and duration.
	Ring tone setting	Allows users to customize ring tones and set a ring tone for a specified number or user group
	Status display	The 10 programmable keys can be configured to display the status of other IP phones.
	Message waiting indicator (MWI)	Provides MWI that blinks for new voice messages
	Speed dialing	The 10 programmable keys can be configured for speed dialing.
Electrical feature	Power supply adapter	Input: AC 100V~240V Output: DC 5 V/2 A
	POE	Power over Ethernet
	Power consumption	4.2W, Class 0
Environment requirements	Working temperature	0 ℃~40 ℃
	Working humidity	10%~90%
	Storage temperature	-10 ℃ ~70 ℃
	Storage humidity	10%~90%
Authentication		FCC/CE/ROHS

Category	Item	Parameter
Physical features	Dimensions (H x W x D)	158 mm x 273 mm x 200 mm
	Weight	1.05 kg
	Installation mode	Placed on a desk

4 Acronyms and Abbreviations

Abbreviation	Full Name
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
FTP	File Transfer Protocol
HTTP	Hypertext Transfer Protocol
NTP	Network Time Protocol
PPPoE	Point-to-Point Protocol over Ethernet
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RTP	Real-time Transport Protocol
TFTP	Trivial File Transfer Protocol
TLS	Transport Layer Security
VLAN	Virtual Local Area Network
VoIP	Voice Over IP