



**7910 IP Phone
V200R003C30**

Product Overview

Issue **01**
Date **2017-07-13**

Copyright © Huawei Technologies Co., Ltd. 2017. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions



HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: <http://e.huawei.com>

Contents

1 Product Positioning and Highlights.....	1
2 Features and Functions	2
2.1 Multiple Services	2
2.1.1 Audio Call.....	2
2.1.2 Phone Features.....	2
2.1.3 Features Available for Specific Network Environments	4
2.1.4 Customized Services.....	8
2.2 High-Fidelity Voice Quality	8
2.3 Superb Network Adaptability	9
2.3.1 Multiple Methods for Obtaining IP Addresses.....	9
2.3.2 QoS	9
2.4 Quick and Easy Operation	9
2.4.1 Easy Installation.....	9
2.4.2 Diversified and Easy-to-Use Function Buttons	9
2.5 Multiple Auxiliary Ports	9
2.5.1 Headset Port.....	9
2.5.2 External PC Port	9
2.6 Enhanced Maintainability	10
2.6.1 Status Query.....	10
2.6.2 Phone Diagnosis	10
2.6.3 Diagnostics	10
2.6.4 Local Upgrade	10
2.6.5 Automatic Upgrade.....	10
2.6.6 Terminal Management	10
2.7 Reliability	10
2.7.1 Multi-Registration.....	10
2.7.2 eSight Redundancy	11
2.7.3 Authentication Server Redundancy (Only in EC6.X and IMS+UC).....	11
2.7.4 Directory Server Redundancy (Only in EC6.X and IMS+UC).....	11
2.7.5 NTP Server Redundancy.....	11
2.8 Security	11
3 Technical Specifications	12

1 Product Positioning and Highlights

IP Phone 7910 is an easy-to-use, full-featured 6-line IP phone. It provides a user-friendly UI, supports function-rich programmable buttons, and delivers high-quality call services, making it an icon of new-generation budget-friendly IP phones.

IP Phone 7910 has the following features:

- Six lines
- 2.83-inch color Liquid Crystal Display (LCD) screen, 320 x 240 high-resolution
- Advanced Audio Coding-Low Delay (AAC-LD) super-wideband voice codec with a sample rate as high as 48 kHz
- Two GE Ports; support for Power over Ethernet (PoE)
- Ten programmable buttons for various customized services

Figure 1-1 shows the appearance of IP Phone 7910.

Figure 1-1 IP Phone 7910



2 Features and Functions

2.1 Multiple Services

IP Phone 7910 can work in different network environments, including Enterprise Communications (EC6.X), Unified Communications (UC2.0, UC2.X), Contact Center (CC), IP Multimedia Subsystem (IMS), IMS+UC, Asterisk, BroadSoft, and other third-party networks. In such network environments, IP Phone 7910 provides basic call services and various supplementary services, helping users improve their work efficiency. This chapter describes the basic call services, features, service support in different network environments, and customized services of IP Phone 7910.

NOTE

This article describes all the following phone features in EC6.X, UC2.X and IMS+UC network environments. For information about service support of IP Phone 7910 in UC2.0, CC, IMS, Asterisk, and BroadSoft network environments, see the *Specification List* of IP Phone 7910.

2.1.1 Audio Call

Working with SIP servers, IP Phone 7910 can communicate with intra-office analog phones, SIP-based IP phones, Public Switched Telephone Network (PSTN) phones, and mobile phones.

2.1.2 Phone Features

Multiple Lines

- IP Phone 7910 supports a maximum of three accounts to register at the same time.
- IP Phone 7910 provides two lines. Each account can be assigned two lines concurrently.
- IP Phone 7910 displays the line usage details of each account, including whether the bound account is registered and call status.
- IP Phone 7910 supports line switch with a line button.

Mute

IP Phone 7910 allows a user to mute an ongoing call. After muting the call, the user can still hear the peer party, but the peer party cannot hear the user. The mute icon is displayed on the status bar of the user's phone screen.

Caller ID

IP Phone 7910 displays the number of an incoming call.

Call History

IP Phone 7910 records the call history of all answered, missed, and dialed calls, allowing users to:

- View the call history on the home screen, even during a call.
- Add contacts from the call history to the local address book.
- Delete one or more contacts from the call history, or clear the call history.
- Call or edit a contact from the call history.

Phone Lock

IP Phone 7910 supports automatic and manual phone lock. A password is required to unlock IP Phone 7910.

PoE

IP Phone 7910 supports PoE.

Languages

IP Phone 7910 allows users to switch between languages.

- Display: Arabic, Chinese (simplified and traditional), English, French, Portuguese, Russian, Spanish, Turkish, German, Polski, and Hungarian
- Input: Chinese simplified, English, French, Portuguese, Spanish, Russian, Polski, and Hungarian

Local Conference

IP Phone 7910 allows a user to hold an ongoing call with another party and set up a call with a third party for a local conference after the two calls have local audio mixing. After the local conference is set up, the user can add more participants (a maximum of six participants including the conference initiator), mute participants, remove participants, or end the conference.

Hotline

The hotline service allows IP Phone 7910 to automatically connect to a preset number (hotline number) when a user does not press any key within the preset hotline delay time after picking up the phone. The hotline number and hotline delay time must be set on IP Phone 7910 beforehand.

Speed Dial

IP Phone 7910 allows users to program the numbers that they dial most often on line buttons and programmable buttons. Once a user presses a speed dial button, a call is made to the preset number.

Emergency Call

Accounts registered on IP Phone 7910 can make emergency calls even if IP Phone 7910 is locked or unregistered.

Contacts

- IP Phone 7910 stores a maximum of 1000 contacts, recording detailed contact information, such as the profile picture, name, department, and phone number. Contacts can also be grouped.
- Users can add, modify, or delete contacts.
- Users can add, modify, or delete contact groups.
- Users can call or edit a contact from the contact list.
- Users can import or export contact files in .csv or .vcf format through the web page.

LDAP Directory

IP Phone 7910 can be connected to third-party directory servers through the Lightweight Directory Access Protocol (LDAP) interface, allowing access to enterprise employees' information (such as name, department, and phone number). IP Phone 7910 supports directory servers such as Microsoft Active Directory (AD).

- IP Phone 7910 displays information searched out from the LDAP directory in real time.
- IP Phone 7910 allows users to perform other operations on the search result, for example, viewing contact details, saving the contact information, and directly placing a call.

Dialing Rule

IP Phone 7910 allows users to set dialing rules. If the number a user dials matches a preset dialing rule, IP Phone 7910 automatically converts the number (prefixing the number or replacing the number) according to that rule and calls the converted number when the preset delay time expires.

2.1.3 Features Available for Specific Network Environments

Call Hold

IP Phone 7910 supports call hold. If a user wants to place a new call during an ongoing call, the user can tap the hold button to hold the ongoing call or press the line button to switch to a new line and hold the ongoing call.

Call Waiting

IP Phone 7910 allows users to enable or disable call waiting. When call waiting is enabled and the current line is being occupied, a user will be notified of any incoming call that comes from another idle line. The user can then press an appropriate softkey to answer the new call.

Call Transfer

IP Phone 7910 allows a user to transfer an ongoing call to a specified user. The other party of the call can then talk with the specified user. IP Phone 7910 supports two types of call transfer modes: blind, semi-consult (available only in EC6.X and UC2.X), and consult.

Call Forward

IP Phone 7910 is able to forward calls to the preset phone number or voice mailbox. IP Phone 7910 supports four types of call forward modes: Call Forward All (CFA), Call Forward Busy (CFB), Call Forward No Answer (CFNA), and Call Forward Offline (CFO). These four modes can be enabled concurrently.

Call Deflection

IP Phone 7910 allows a user to transfer an incoming call to a specified user, with no need for the user to set up a call with this specified user. The other party of the call can then talk with the specified user.

Pickup

IP Phone 7910 allows a user to answer the call for a specified user.

Group Pickup

IP Phone 7910 allows a user to answer the calls for other members in the same pickup group. If multiple phones in the pickup group ring, the phone that rings first will be picked up.

Distinctive Ring

IP Phone 7910 supports different ringtones for intra-office and outer-office calls.

ACB

In the Automatic Callback (ACB) service, if the number a user dials is busy or has no response, the user can press the ACB softkey and hang up. The server, when detecting that the called party is reachable, automatically calls the calling party. When the calling party picks up the phone, the server calls the called party to set up a call between them.

Call Park

The call park service allows a user to park a call on the current phone but retrieve the parked call on another phone.

BLF(Available only in EC6.X and UC2.X)

The BLF allows users to set the accounts to be monitored on line buttons and programmable buttons. The status of such accounts can be monitored according to the colors of the LEDs for the buttons.

DND

When Do Not Disturb (DND) is enabled, no calls will be received.

Advanced Secretary Service

The advanced secretary service allows both a manager and a secretary to share a same phone number. When there is an incoming call, the manager's and secretary's phones ring

simultaneously. After answering the call, the secretary can call the manager through the private line. The manager then can press the line button to answer the call.

Voicemail

The voicemail service allows users to never miss a call by saving all unanswered calls to the user's preset voice mailbox.

Linkage

Users can use a linked eSpace Desktop, on behalf of IP Phone 7910, to make, answer, and hang up a call. In addition, status information is synchronized between IP Phone 7910 and the linked eSpace Desktop.

UC Directory

IP Phone 7910 allows users to query enterprise employees' information including the profile picture, name, department, and phone number. IP Phone 7910 displays the search result returned from the server after a user enters the search criteria on the directory screen. Users can further perform operations on the search result, for example, querying details of a searched contact, saving a searched contact to the local address book, and directly calling a searched contact.

Instant Conference

IP Phone 7910 allows a user to initiate a voice conference by pressing the conference button. The conference moderator (initiator) can perform operations such as adding, removing, or muting participants.

Group Conference

IP Phone 7910 allows a user to initiate a voice conference with all contacts in a contact group. A conference invitation will be sent to all these contacts. The conference moderator (initiator) can perform operations such as adding, removing, or muting participants.

One-Key Switch

IP Phone 7910 supports one-key switch, allowing users to switch calls back and forth between IP Phone 7910 and any other bound IP phone or mobile phone.

Name and Department Display

IP Phone 7910 displays the peer party's name and department for incoming or outgoing calls.

Profile Picture Display

IP Phone 7910 displays the peer party's profile picture for incoming and outgoing calls.

Call Recording(Available only in EC6.X and UC2.X)

IP Phone 7910 allows a user to start or stop the recording of an ongoing call. The recorded call is saved on the server.

Status Display (Available only in IMS+UC)

IP Phone 7910 can display the status of contacts in the call history, contact list, and directory.

Extension Mobility

IP Phone 7910 supports extension mobility. After a user logs in to an IP phone and modifies user configurations, extension mobility automatically synchronizes the modified user configurations to the corresponding file on the server. When the user successfully logs in to another IP phone using the same account, this IP phone automatically obtains the latest user configurations from the server. The user configurations include the contacts, call history, programmable buttons, server addresses, and services to which the user has subscribed.

Hunt Group (Available only in EC6.X and UC2.X)

IP Phone 7910 supports hunt group. In an enterprise, employees in the same field can be added to a hunt group, with the group access code configured. After a user dials the access code of this hunt group, the system calls members in the hunt group, and the phones in the hunt group ring in the specified ringing mode (simultaneous ringing, sequential ringing, or cyclic ringing). If no one in the hunt group answers the call, the call is transferred to the voicemail or a specific number.

Paging (Available only in UC2.X)

IP Phone 7910 supports paging. In an enterprise, multiple numbers that have the same broadcast subject are added to a paging group, and members in this group are either initiators or recipients. An initiator can dial the access code of their own paging group to implement voice broadcast to all recipients. The recipients' phones automatically go off-hook to receive the broadcast.

Abbreviated Dialing

Abbreviated dialing allows a user to dial an abbreviated number instead of a complete called number to connect to the called party.

Absence Service (Available only in IMS+UC)

When unable to answer incoming calls, a user can enable the absence service. Then, calling parties hear an announcement indicating that the user is not at the desk.

OCB (Available only in EC6.X and UC2.X)

After outgoing call barring (OCB) is enabled, the phone's national and international toll call rights are password-controlled. Users can password-control national toll calls, international toll calls, or both on the phone.

Called Party Control (Available only in IMS+UC)

In the called party control scenario, even if the calling party disconnects the call, the call is not released within a certain period but is placed on hold. The calling party can resume the call within that period.

Intercom

The intercom function enables users within an enterprise to easily communicate with each other.

Anonymous Call

With the anonymous call function enabled on a user's phone, the user's information will not be displayed on the phone of any called party.

MCID (Available only in IMS+UC)

The malicious call identification (MCID) function allows users to identify an incoming call as a malicious one.

2.1.4 Customized Services

Ringtone Setting

IP Phone 7910 allows users to customize ringtones for each contact or contact group. Users can also import ringtones.

IP Phone 7910 supports .wav ringtones using PCM coding.

Wallpaper Setting

IP Phone 7910 allows users to import and customize wallpapers.

IP Phone 7910 supports wallpapers in .png, .bmp, or .jpg format.

XML Application

IP Phone 7910 supports XML applications, allowing users to access a third-party server. The information obtained from the third-party server will be displayed on the LCD screen of IP Phone 7910.

2.2 High-Fidelity Voice Quality

In terms of the digital signal processing (DSP) algorithm, IP Phone 7910 employs various technologies including VAD, AGC, CNG, and PLC, and supports international audio codec protocols, including AAC-LD, G.722, G.711a, G.711 μ , G.729AB, and iLBC. It also supports automatic protocol adaptation, choosing a suitable codec protocol for the peer device. These features can therefore ensure a high quality of voice.

As for the integral components of IP Phone 7910, the speaker, handset, and headset all provide high-fidelity voice quality.

2.3 Superb Network Adaptability

2.3.1 Multiple Methods for Obtaining IP Addresses

IP Phone 7910 applies to various networking environments. A user can manually set a static IP address or obtain a dynamic IP address through the Dynamic Host Configuration Protocol (DHCP).

2.3.2 QoS

IP Phone 7910 supports Layer 2 (802.1Q or 802.1p) and Layer 3 (ToS or DSCP) configurations, providing optimal voice quality over an IP network.

2.4 Quick and Easy Operation

2.4.1 Easy Installation

Users can use IP Phone 7910 by simply connecting it to the Internet and configuring it on the LCD screen or web management page. This shows the user-centered design.

IP Phone 7910 also provides the automatic deployment function. Administrators prepare configuration files on the file server. When powered on, IP Phone 7910 automatically obtains network parameters from the DHCP server and loads the desired configuration files on the file server. This ensures the plug-and-play convenience.

2.4.2 Diversified and Easy-to-Use Function Buttons

IP Phone 7910 provides several types of keys and buttons, including number keys, softkeys, navigation buttons, fixed function buttons, and line buttons. Their functions are as follows:

- **Softkeys:** The LCD screen shows context-sensitive softkeys depending on the operation that is being performed, greatly simplifying the difficulty in using services.
- **Fixed function buttons:** Frequently-used functions correspond to several buttons. These buttons are arranged in different areas by functions. Users can use related functions by simply pressing the buttons instead of operating menus, which makes IP Phone 7910 easier to use.

2.5 Multiple Auxiliary Ports

2.5.1 Headset Port

IP Phone 7910 provides a headset port (RJ-9), allowing users to use a headset to free up their hands.

2.5.2 External PC Port

IP Phone 7910 provides a 10/100/1000 Mbps port for connecting to a PC. Additional cabling is unnecessary when IP Phone 7910 is deployed with a PC, which reduces cabling costs.

2.6 Enhanced Maintainability

IP Phone 7910 allows users to quickly locate and rectify faults on the advanced setting screen, or through diagnostics or eSight.

2.6.1 Status Query

IP Phone 7910 allows users to query its version information and network connection status. It displays registration or network connection faults directly on the screen.

2.6.2 Phone Diagnosis

IP Phone 7910 provides various diagnosis functions, including screen, backlight, indicator, microphone, and system diagnosis.

2.6.3 Diagnostics

IP Phone 7910 reports key maintenance information including registration success, registration failure, network disconnection, and phone fault information to a log server. Maintenance engineers can use the diagnostics to locate and rectify faults in a timely manner.

2.6.4 Local Upgrade

IP Phone 7910 supports local upgrade. In this upgrade mode, a user can select the local upgrade file on the web configuration page for IP Phone 7910 system upgrade.

2.6.5 Automatic Upgrade

IP Phone 7910 supports automatic upgrade. It can search for available upgrade software and complete the system upgrade automatically. This ensures that the current software is the latest and most stable version, and significantly reduces maintenance workload.

2.6.6 Terminal Management

IP Phone 7910 can be remotely managed by eSight/TMS. eSight/TMS supports various operations on IP Phone 7910, including reboot, centralized configuration, general upgrade, configuration obtaining and system diagnostics export.

2.7 Reliability

2.7.1 Multi-Registration

IP Phone 7910 supports sequential registration:

IP Phone 7910 sends registration messages to a SIP server at intervals of half of the registration interval. If the active SIP server fails, the IP phone registers with the standby SIP server. If the standby SIP server also fails, the IP phone registers with the local SIP server. Services are interrupted during the SIP server switching. After the IP phone registers with a SIP server successfully, its services become available again.

2.7.2 eSight Redundancy

IP Phone 7910 supports eSight redundancy. The domain name configured on the DNS server is mapped to two eSight IP addresses, one active and one standby. When IP Phone 7910 receives the IP addresses resolved by the DNS server, IP Phone 7910 first initiates a connection request to the active eSight. If the active eSight fails to respond, IP Phone 7910 connects to the standby eSight.

2.7.3 Authentication Server Redundancy (Only in EC6.X and IMS+UC)

- In the EC6.X network environment, IP Phone 7910 supports uPortal server redundancy. During IP Phone 7910 login authentication, if the active uPortal server fails, IP Phone 7910 automatically switches to the standby uPortal server to ensure functional services.
- In the IMS+UC network environment, IP Phone 7910 supports AA server redundancy. During IP Phone 7910 login authentication, if the active AA server fails, IP Phone 7910 automatically switches to the standby AA server to ensure functional services.

2.7.4 Directory Server Redundancy (Only in EC6.X and IMS+UC)

IP Phone 7910 supports directory server redundancy. During directory query, if the active directory server fails, IP Phone 7910 automatically switches to the standby directory server for a query.

2.7.5 NTP Server Redundancy

IP Phone 7910 supports NTP server redundancy. During time update, if the active NTP server fails, IP Phone 7910 automatically switches to the standby NTP server for time synchronization.

2.8 Security

To ensure the security of user information, IP Phone 7910 provides the following security protection measures:

- Different permissions for administrators and common users. Users can perform advance settings only when they provide the correct administrator password.
- Encryption of media streams by using 128-bit key size Advanced Encryption Standard (AES), preventing any unauthorized eavesdropping during a conversation.
- Encryption of SIP signaling based on Transport Layer Security (TLS).
- Web-based service configuration using HTTPS, ensuring secure access.
- 802.1x authentication by account and password, allowing secure access to Ethernet switches.
- Certificate-based 802.1x authentication.
- Import of multiple certificates for identity authentication.
- Encrypted data transmission using LDAPs.
- Secure system access using 802.1x Logoff-Proxy, protecting the enterprise network against unauthorized intrusion.

3 Technical Specifications

Hardware Specifications

Table 3-1 lists the hardware specifications of IP Phone 7910.

Table 3-1 Hardware specifications

Feature/Module	Specification
Screen	2.83-inch, 320 x 240 pixels
LEDs	Line button, Message Waiting Indicator (MWI), Mute, Speaker, Call History, Headset, and programmable button LEDs
Foot stand	One foot stand with two adjustable angles
Buttons	<ul style="list-style-type: none">• Two line buttons• Five navigation buttons: Up/Down/Left/Right/OK• Ten programmable buttons• Four softkeys• Four fixed function buttons with LEDs: Speaker, Headset, Mute, and Call History• Seven fixed function buttons without LEDs: Home, Message, Volume, Contact, Hold, Conference, and Call Transfer
External ports	Two GE ports: 10/100/1000 Mbps adaptive and support for VLAN configuration
	One handset port: RJ-9
	One headset port: RJ-9
PoE energy consumption class	Class 1
Power adapter	Input: 100 to 240 V AC Output: 5 V DC, 2 A Support for China, Europe, America, Britain, Brazil and Australia

Feature/Module	Specification
	standards
Dimensions	231 mm x 208 mm x 103 mm
Operating temperature	0°C to 45°C
Storage temperature	-25°C to +70°C
Operating humidity	10% to 95%
Storage humidity	10% to 95%
Power consumption	3.84 W
Weight (approx.)	0.85 kg
Certification	CE/FCC/RoHS/WEEE/REACH/UL/SASO

Technical Specifications

Table 3-2 lists the technical specifications of IP Phone 7910.

Table 3-2 Technical specifications

Category	Feature	Specification
Protocols	Network protocols	TCP/IP, SIP, SDP, UDP, RTP, RTCP, DHCP, DNS, PPPoE, HTTP, HTTPS, SNTP, and XCAP
Phone features	Audio codec	G.711a/G.711μ/G.729AB/G.722/ iLBC/ AAC-LD/G.722.1/G.722.2
	Audio features	<ul style="list-style-type: none"> • Inband and RFC2833 • Anti-clipping (ACLIP) • Acoustic Echo Cancellation (AEC) • Automatic Gain Control (AGC) • Adaptive Jitter Buffer (AJB) • Automatic Noise Restraint (ANR) • Comfort Noise Generation (CNG) • Hearing Aid Compatibility (HAC) • Packet Loss Concealment (PLC) • Voice Activity Detection (VAD) • Side Tone Cancellation

Category	Feature	Specification
		<ul style="list-style-type: none"> Voice Quality Monitor (VQM) Buzz cancelation
	Call history	<p>Up to 100 records each for dialed, received, and missed calls</p> <p>Missed call notification</p>
	Contacts	<ul style="list-style-type: none"> Up to 1000 contacts Contact import or export through the web page Contact file in .csv or .vcf format
	Languages	<ul style="list-style-type: none"> Display: Arabic, Chinese (simplified and traditional), English, French, Portuguese, Russian, Spanish, Turkish, German, Polski, and Hungarian Input: Chinese simplified, English, French, Portuguese, Spanish, Russian, Polski, and Hungarian
	Ringtone Selection	Default ringtones (ten ringtones), group ringtones, and customized ringtones
	Ringtone import	<p>The total storage for ringtones and wallpapers is 10MB, including system ringtones and wallpapers</p> <p>Format: mono .wav (sampling rate: 8 kHz; precision: 16-bit)</p>
	Wallpaper import	<p>The total storage for ringtones and wallpapers is 10MB, including system ringtones and wallpapers</p> <p>Format: .png, .bmp, or .jpg, up to 20 wallpapers</p>
	Local conference	<ul style="list-style-type: none"> Six-party voice conference Operations including adding, muting, and removing participants