

445HD Generic SIP IP Phone

Version 3.4.0.14



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Abbreviations and Conventions

Each abbreviation, unless widely used, is spelled out in full when first used.

Related Documentation

Document Name
445HD Generic SIP IP Phone User's Manual
445HD Generic SIP IP Phone Administrator's Manual

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1 Introduction

This document describes the new features and known constraints of AudioCodes' Generic 445HD/445HD-R SIP IP Phone for Version 3.4.0.14.3.

1.1 Overview



Note: Version 3.4.0.14.3 only supports the 445HD and 445HD-R phones.

AudioCodes' 400HD Series of High Definition IP Phones offers a new dimension of voice call quality and clarity for the IP Telephony market. This new series of IP Phones further expands AudioCodes' VoIP product offering for the service providers' hosted services, Enterprise IP telephony and Enterprise contact centers markets. As a natural addition to the AudioCodes Mobile Clients, Media Gateway, Media Server and Multi-Service Business Gateway products, the AudioCodes Series of High Definition IP Phones enable System Integrators and end-customers to build end-to-end solutions that rely on AudioCodes' technological advantage and proven track record in providing state-of-the-art products.

The AudioCodes Series of High Definition IP Phones meet a growing demand for High Definition VoIP solutions in end-user phones and terminals, improving the productivity and efficiency of business communications with new quality standards set by the High Definition voice technology.

1.2 Software Specifications

The phones' software specifications are summarized in the following table:

Table 1-1: Software Specifications

Feature	Details
VoIP Signaling Protocols	<ul style="list-style-type: none"> ▪ SIP: RFC 3261, RFC 2327 (SDP)
Data Protocols	<ul style="list-style-type: none"> ▪ IPv4, TCP, UDP, ICMP, ARP, DNS and DNS SRV for SIP Signaling ▪ SIP over TLS (SIPS) ▪ 802.1x ▪ 802.1p/Q for Traffic Priority and QoS ▪ VLAN Discovery Mechanism (CDP, LLDP) ▪ ToS (Type of Service) field, indicating desired QoS DHCP Client ▪ NTP Client ▪ OpenSSL 1.0.1m, supporting SHA2 and SHA256 algorithms. ▪ SHA2 - Open SSL 1.0.1 integrated with TLS 1.2, supporting SHA256, replaced the previous OpenSSL 0.9.8 and TLS 1.0 stacks ▪ Wireless connectivity (445HD and C450HD): <ul style="list-style-type: none"> ✓ Single band 2.4GHz, 802.11b/g/n Wi-Fi support
Media Processing	<ul style="list-style-type: none"> ▪ Voice Coders: G.711, G.729, G.722 8000 / G.722 16000. ▪ Acoustic Echo Cancellation: G.168-2004 compliant, 64-msec tail length ▪ Adaptive Jitter Buffer 300 msec ▪ Voice Activity Detection ▪ Comfort Noise Generation ▪ Packet Lost Concealment ▪ RTP/RTCP Packetization (RFC 3550, RFC 3551), SRTP (RFC 3711) ▪ DTMF Relay (RFC 2833)
Telephony Features	<ul style="list-style-type: none"> ▪ Single Line ▪ Speed Dial and (up to 18) BLF presence buttons ▪ BLF Call Pickup

Feature	Details
	<ul style="list-style-type: none"> ▪ Handles up to 8 concurrent calls ▪ Call Hold / Un-Hold ▪ Call Transfer; the hard TRANSFER key's default functionality (Blind Transfer) can be changed to Consultative Transfer ▪ Three-way Conferencing (with local mixing) ▪ Remote Conference compliancy with RFC 4579, SIP Call Control, Conferencing for UAs ▪ Merge option: Two separate calls can be merged into one conference ▪ Call Park (Genband only) ▪ Call Forwarding ▪ DnD (Do Not Disturb) ▪ Voicemail (including capability to secure user access with PIN code) ▪ Message Waiting Indication (including MWI LED) ▪ Caller ID Notification ▪ Paging w/without Barge-in. Configurability of special keys as paging group dials. ▪ Call Waiting Indication ▪ Personal Directory ▪ Automatic On-hook Dialing ▪ Automatic Answering (Alert-Info header and "talk" event) ▪ CWRR (Call Waiting Reminder Ring) ▪ Call Logs: Missed/Received Calls and Dialed Numbers ▪ Voca service to allow voice dialing ▪ Redial ▪ Dial Plan
Configuration / Management	<ul style="list-style-type: none"> ▪ LCD Display User Interface Language Support (Various Languages) ▪ Web-based Management (HTTP/HTTPS) ▪ European date format (DDMMYYYY) and American date format (MMDDYYYY), in phone LCD and Web interface ▪ Auto-Provisioning (via TFTP, FTP, HTTP, and HTTPS) for firmware and proprietary configuration file upgrade ▪ DHCP options (66, 67, and 160) for auto-provisioning ▪ DHCP options (120, 60, and 77) for device information ▪ DHCP option (42 or 4) for the NTP server ▪ DHCP option (2) for the Time Zone Offset ▪ Redirect server ▪ Private Labeling Mechanism ▪ Configuration file encryption (Entire file and individual parameters) ▪ One Voice Operations Center (OVOC) module IP Phone Manager Pro Express ▪ Access via Telnet or SSH
Supported Environments	<ul style="list-style-type: none"> ▪ 3CX Proxy Server ▪ Ribbon Communications (formerly GENBAND) softswitch solution Kandy Business Solutions (KBS) application server.
Diagnostics and Troubleshooting Tools	<ul style="list-style-type: none"> ▪ System Logging (Syslog) ▪ Monitoring (Traceroute) ▪ DSP Packet Recording ▪ Port Mirroring ▪ VoIP Status Web page ▪ Firmware Recovery ▪ TCP Dump ▪ Core Dump File

Feature	Details
Supported Languages	<ul style="list-style-type: none"> ▪ English ▪ Spanish ▪ Russian ▪ German ▪ Ukrainian ▪ French ▪ Italian ▪ Hebrew ▪ Polish ▪ Portuguese (displayed only if included in your Feature Key) ▪ Korean ▪ Finnish ▪ Simplified Chinese ▪ Traditional Chinese ▪ Hungarian ▪ Japanese ▪ Slovak ▪ Czech ▪ Latvian (contact person information) ▪ Dutch ▪ Magyar
Supported Headsets	<ul style="list-style-type: none"> ▪ For a comprehensive list of supported Jabra headsets, see the Jabra Headset Compatibility Guide ▪ For a comprehensive list of supported Plantronics headsets see https://compatibility.plantronics.com/deskphone ▪ Also, the following which aren't documented online yet: <ul style="list-style-type: none"> ✓ Jabra UC-150 ✓ Jabra Speak 510+ ✓ Jabra Speak 410 ✓ Jabra MOTION OFFICE ✓ Jabra PRO 9470 ✓ Jabra Evolve Series 20, 30, 40, 75, 80 ✓ Microsoft LX-3000 ✓ Plantronics C-310M ✓ Plantronics C-320M ✓ Plantronics HW720 ✓ Plantronics Blackwire Series 300, 325, 510, 520, 710 ✓ Jabra UC-550 ✓ Jabra Pro 920 EHS wireless headset ✓ Jabra Pro 9450 EHS wireless headset

1.3 Hardware Specifications

The phones' hardware specifications are summarized in the following table:

Table 1-2: Hardware Specifications

Phone	Details
445HD 445HD-R	<ul style="list-style-type: none"> ▪ Color Screen 4.3": Graphic, 480x272 resolution ▪ Integrated sidcar 376x60 resolution featuring 12 programmable speed dial keys with presence monitoring (BLF) ▪ Connectors interfaces: <ul style="list-style-type: none"> ✓ 2 x RJ-45 ports (10/100/1000BaseT Ethernet) for WAN and LAN (GbE support) ✓ RJ-9 port (jack) for headset ✓ RJ-9 port (jack) for handset ✓ USB interface for USB headset support ✓ RJ-11 interface for DHSG ▪ Wireless connectivity: <ul style="list-style-type: none"> ✓ Single band 2.4GHz, 802.11b/g/n Wi-Fi support ▪ Mounting: <ul style="list-style-type: none"> ✓ Wall and desktop mounting options ✓ One angle for desktop mount, another angle for wall mount ▪ Power: <ul style="list-style-type: none"> ✓ DC jack adapter 12V ✓ Power supply AC 100 ~ 240V ✓ PoE Class 2: IEEE802.3af (optional) ▪ Keys: <ul style="list-style-type: none"> ✓ 4 softkeys and 6 multifunction hard keys ✓ VOICE MAIL message hotkey (including LED) ✓ 4-way navigation button with OK key ✓ MENU ✓ REDIAL ✓ HOLD ✓ MUTE (including LED) ✓ TRANSFER ✓ VOLUME control key ✓ HEADSET (including LED) ✓ SPEAKER (including LED)

1.4 445HD | 445HD-R IP Phone Models

The table below lists the AudioCodes 445HD | 445HD-R IP phone models.

Table 1-3: 445HD | 445HD-R IP Phone Models

Part Number	Product Description
IP445HDEG	445HD IP Phone PoE GbE Black 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD 4.3", 376x60 BLF LCD, and Power over Ethernet (PoE)
IP445HDG-R	445HD IP Phone PoE GbE Black 2 Ethernet 10/100/1000 ports, 6 Programmable keys, 480x272 Graphic Color LCD, and Power over Ethernet (PoE)
IP445HDEPSG	445HD IP Phone PoE GbE and external power supply Black 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, 376x60 BLF LCD, and Power over Ethernet (PoE)
IP445HDEPSG-R	445HD IP Phone PoE GbE and external power supply Black 2 Ethernet 10/100/1000 ports, 6 Programmable keys, 480x272 Graphic Color LCD, and Power over Ethernet (PoE)
IP445HDEG-BW	445HD IP Phone PoE GbE Black Wi-Fi and Bluetooth* connectivity, 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, 376x60 BLF LCD, and Power over Ethernet (PoE).
IP445HDEG-BW-R	445HD IP Phone PoE GbE Black Wi-Fi and Bluetooth* connectivity, 2 Ethernet 10/100/1000 ports, 6 Programmable keys, 480x272 Graphic Color LCD, and Power over Ethernet (PoE).
IP445HDEPSG-BW	445HD IP Phone PoE GbE Black Wi-Fi and Bluetooth* connectivity, with or without an external Power Supply, 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, 376x60 BLF LCD and Power over Ethernet (PoE).
IP445HDEPSG-BW-R	445HD IP Phone PoE GbE Black Wi-Fi and Bluetooth* connectivity, with or without an external Power Supply, 2 Ethernet 10/100/1000 ports, 6 Programmable keys, 480x272 Graphic Color LCD and Power over Ethernet (PoE).

* Supported in the USA, Canada, the EU, Switzerland and Israel, Wi-Fi and Bluetooth require a specific CPN with a 'BW' suffix.

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2 Version 3.4.0.14

2.1 What's New



Note: Version 3.4.0.14 includes firmware build **3.4.0.14.3**.

- This is the first version release for the 445HD | 445HD-R Generic SIP IP Phone.
- Supported SIP Environments:
 - 3CX Proxy Server
 - Ribbon Communications (formerly GENBAND) softswitch solution Kandy Business Solutions (KBS) application server
- Supported features in this release include:
 - Single Line
 - Speed Dial and (up to 18) BLF presence buttons
 - BLF Call Pickup
 - Handles up to 8 concurrent calls
 - Call Hold / Un-Hold
 - Call Transfer; the hard TRANSFER key's default functionality (Blind Transfer) can be changed to Consultative Transfer
 - Three-way Conferencing (with local mixing)
 - Remote Conference compliancy with RFC 4579, SIP Call Control, Conferencing for UAs
 - Merge option: Two separate calls can be merged into one conference
 - Call Park (Genband only)
 - Call Forwarding
 - DnD (Do Not Disturb)
 - Voicemail (including capability to secure user access with PIN code)
 - Message Waiting Indication (including MWI LED)
 - Caller ID Notification
 - Paging w/without Barge-in. Configurability of special keys as paging group dials.
 - Call Waiting Indication
 - Personal Directory
 - Automatic On-hook Dialing
 - Automatic Answering (Alert-Info header and "talk" event)
 - CWRR (Call Waiting Reminder Ring)
 - Call Logs: Missed/Received Calls and Dialed Numbers
 - Voca service to allow voice dialing
 - Redial
 - Dial Plan
 - Wi-Fi capability (see [445HD | 445HD-R IP Phone Models](#) above)
 - USB headset
 - Electronic Hook Switch (EHS) DHSG. Calls can be answered and volume level can be changed with EHS-capable headsets.
 - Power Saving (LCD Brightness)
 - Up to 20 configurable Softkeys / Programmable Softkeys (PSKs) in Idle and Ongoing Call States.

2.2 Known Constraints in Version 3.4.0.14

The table below shows the constraints that are known to exist in this version.

Table 2-1: Known Constraints

Incident	Description
IPPUC-32	During a local conference call, phone A's audio device switches from headset to speaker when phone B drops out.
IPPUC-13	[Device Manager]: The phone does not send a keepalive (KA) message with the status 'upgrading' before upgrading.
IPPUC-895	When making a paging call or when receiving an incoming paging call, the phone's screen display is incorrect.
IPPUC-909	The phone does not play a ringing tone when a paging call comes in.
[IGS-2578]	The user can't make a paging call when the phone displays the New Call screen.
IPPUC-933	Long-pressing the Clear SK key to clear the entire string at once, doesn't function.
IGS-2482	The 'HD' logo is not displayed when toggling between two calls that use different vocoders.
IGS-2485	The speaker plays no voice when unplugging the USB headset device during a call.
IGS-2552	After a Consultation Transfer, the transferred call displays an incorrect screen on the phone.
-	SIP Redundancy methods are not fully supported.
-	'Drop from 3-way conference' is currently not supported.

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