9600 Series IP Deskphones Overview and Specification

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Contents

Chapter 1: Introduction

Purpose

This document describes tested product characteristics and capabilities, including product overview and feature descriptions, interoperability, performance specifications, security, and licensing requirements.

Intended audience

This document is intended for people who want to gain a high-level understanding of the product features, functions, capacities, and limitations.

Related resources

Documentation

See the following related documents.

Document number	Title	Use this document to:	Audience
Implementing — H.323			
16–603603	Avaya deskphone H.323, 9608, 9611, 9621G, and 9641G Installation and Maintenance Guide	See install and upgrade procedures for 9601, 9608, 9611G, 9621G, and 9641G IP Deskphones in an H.323 environment.	Administrators and network engineers
Implementing — SIP			
16-603504	Installing and Maintaining Avaya 9601/9608/9608G/ 9611G/9621G/9641G IP Deskphones SIP	See install and upgrade procedures for 9601, 9608, 9611G, 9621G, and 9641G IP Deskphones in a SIP environment.	Administrators and network engineers
Using — H.323			

Document number	Title	Use this document to:	Audience
16–603593	Using Avaya IP Deskphone H.323 9608 and 9611G	See tasks that you can perform using the Avaya IP Deskphone H.323 9608 and 9611G deskphone.	Users and administrators
16–603594	Using Avaya IP Deskphone H.323 9621G and 9641G	See tasks that you can perform using the Avaya IP Deskphone H.323 9621G and 9641G deskphone.	Users and administrators
16–603613	Using Avaya IP Deskphone H.323 9608, 9611G,921G and 9641G in the Call Center	See tasks that you can perform in a call center using the Avaya IP Deskphone H.323 9608, 9611G, 9621G, and 9641G deskphone.	Users and administrators
16–300698	Administering Avaya IP Deskphone H.323, 9608, 9611G, 9621G, and 9641G	Administer configurations and settings for 9608, 9611G, 9621G, and 9641G IP deskphones in an H.323 environment.	Administrators
Using — SIP			
16-603618	Using Avaya 9601 IP Deskphone SIP	See the capabilities of a 9601 IP SIP deskphone and to learn about how various features work.	Users and administrators
16-603595	Using Avaya 9608/9608G/ 9611G IP Deskphones SIP	See the capabilities of 9608 and 9611G IP SIP deskphones and to learn about how various features work.	Users and administrators
16-603596	Using Avaya 9621G/9641G IP Deskphones SIP	See the capabilities of 9621G and 9641G IP SIP deskphones and to learn about how various features work.	Users and administrators
16-604108	Using Avaya 9608/9608G/ 9611G IP Deskphones SIP for Call Center Agents	See the capabilities of 9608 and 9611G IP SIP deskphones in a call center set up and to learn about how various features work.	Call center agents and administrators
16-603759	Using Avaya 9621G/9641G IP Deskphones SIP for Call Center Agents	See the capabilities of 9621G and 9641G IP SIP deskphones in a call center set up and to learn about how various features work.	Call center agents and administrators
16-603620	Avaya 9601 IP Deskphones SIP Quick Reference	See frequently used tasks.	Users and administrators
16-603600	Avaya 9608/9608G/9611G IP Deskphones SIP Quick Reference	See frequently used tasks.	Users and administrators
16-603601	Avaya 9621G/9641G IP Deskphones SIP Quick Reference	See frequently used tasks.	Users and administrators

Document number	Title	Use this document to:	Audience
18-604338	Avaya 9608/9608G/9611G/ 9621G/9641G IP Deskphones SIP Quick Reference for Call Center Agents	See frequently used tasks.	Call center agents and administrators
16-603813	Administering 9601/9608/9608G/9611G/ 9621G/9641G IP Deskphones SIP	Administer configurations and settings for 9608, 9611G, 9621G, and 9641G IP deskphones in a SIP environment.	Administrators

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Chapter 2: 9600 Series IP Deskphones overview

9600 Series IP Deskphones is a series of desk handset devices that you can use for unified communication. The series leverages the enterprise IP network and eliminates the need for a separate voice network.

Avaya 9600 Series IP Deskphones offers high audio quality and customizability with low power requirements. With the high-performance models of this series that can operate in both the H.323 and the Session Initiated Protocol (SIP) environment, you can:

- Make conference calls more efficient and enhance customer interactions with high-quality audio.
- Gain access to information quickly through easy-to-read and high-resolution displays.
- Speed completion of common telephony tasks by using prompts on touch screens.
- Improve productivity with context-sensitive graphical interfaces that enhance call control and call management.
- Create a survivable, scalable infrastructure that delivers reliable performance and flexible growth as business needs change.
- Increase performance by deploying Gigabit Ethernet within your infrastructure.
- Reduce energy costs using efficient Power-over-Ethernet (POE) including sleep mode which lowers energy consumption dramatically.

The 9600 Series IP Deskphones works with the Avaya Aura® environment to provide a flexible architecture that works with your investments and accommodates growth as your business needs change. Most models in the series also work with the IP Office environment.

Related Links

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[New in the 6.3 release](#) on page 15
[Feature comparison of H.323-based and SIP-based models](#) on page 17

9600 Series IP Deskphones models

Deskphone model	Description
9601	The 9601 deskphone is SIP-only phone that provides a four-row monochrome display and two lines with dual red and green LEDs. The phone has a built in 10/100 Ethernet switch with a port for your personal computer or a laptop.
9608/9608G	You can use up to eight lines for the deskphone. The deskphone supports a traditional user interface and a graphical monochrome display.
9611G	The 9611G has a traditional user interface and a graphical color display. You can use up to eight lines with the 9611G deskphone. The 9611G deskphone supports an integrated Gigabit and a USB interface. The deskphone has a graphical color display with a white backlight.
9621G	The 9621G IP deskphone provides gigabit capability and touch screen functionality. Customers with a need for gigabit connectivity to the desktop prefer the 9621G deskphone.
9641G	The 9641G deskphone provides advanced capabilities with a color touch screen, wideband speaker, USB interface, Bluetooth headset support for H.323–based deskphones, and gigabit connectivity to the desktop. Customers who require gigabit capability for the desktop and the option to add more advanced capabilities prefer the 9641G deskphone.

Related Links

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Feature description

9600 Series IP Deskphones offers the following salient features:

- Easy to use interface
- Support for diverse users
- Deskphone customization
- Contact center models
- Support for Gigabit Ethernet
- Boost employee productivity

Easy to use interface

Avaya 9600 Series IP Deskphones has:

- Clear and intuitive user interface.
- Monochrome and color high resolution screens that display context sensitive information, contextual menus, prompts, and instructions that are easy to read.
- Touch screens on select models that you can use to navigate through the applications for Weather, World Clock, My Pictures, WML Browser, and Favorites.
- High resolution graphical displays.
- Integrated LED buttons that are available on traditional models 9601, 9608, and 9611 provide visual cues that enhance usability.
- Adapter interfaces that accommodate button modules and dual headset adapters to provide flexibility and adaptability. You can use SBM24 and BM12 button modules that provide up to 24 and 12 system based Call Appearances or Feature buttons.
- USB support with the H.323–based 9611G and 9641G models. These models support one USB device on the USB interface if you enable the USB power parameter through the settings file.

Support for diverse users

9600 Series IP Deskphones meets the need of the following user types.

User type	Description
Walkup users	People who visit your company, such as customers or suppliers. The 9601 model is ideal for these users.
Everyday users	People who use a phone as one of many communications tools – along with IM, email, or PDA. The 9608, 9608G, 9611G, and 9621G models meet their needs.
Essential users	People who rely on real-time voice communication and make use of many advanced phone applications. The 9611 and 9621G models meet their needs.
Navigators	People who are on the phone throughout the day because they handle calls for others, such as receptionists and executive assistants. The 9641G model is ideal for these users.

Deskphone customization

You can customize 9600 Series IP Deskphones through:

- Custom logos that enhances corporate identity and branding.
- Screen savers and background display images.

Contact center models

Contact center versions of the 9608, 9608G, 9611G, 9621G. and 9641G models provides a range of features for enhancing agent productivity, such as handling greetings, monitoring calls in the queue, updating status, and quickly completing many other day-to-day tasks. You can add a dual headset adapter to the 9608, 9608G, 9611G, and 9641G models so that you an use two headsets simultaneously. You can use a contact center faceplate on the 9641G model that eliminates the handset cradle.

Support for Gigabit Ethernet

Gigabit Ethernet helps ensure compatibility with your current network and leverages existing bandwidth efficiently. Gigabit Ethernet handles data intensive traffic to co-located computers for high performance that facilitates the demands of future services and applications.

Boost employee productivity

To help users, 9600 Series IP Deskphones provides:

- Collaboration features, such as conference calls, instant messaging for only SIP-based phones, and Web applications.
- Increased call control and call management with intuitive interface and context sensitive screens. Touch screen options provide easy-to-manage messages and quick access to key applications such as call logs and phone book.
- Calendar integration for only SIP-based phones through which phones can display appointments and call into conference calls with a single button press.
- Presence integration for only SIP-based phones through which phones can display presence status of other users in the phone contact list. For example, whether the other user is on a call or in a do-not-disturb mode.
- Easy-to-use critical functions, such as call transferring, call forwarding, and conference calls.

New in this release

H.323

The 6.4 release introduces the following features.

Feature	Description
Media quality indication	Support for media quality indication added on the deskphone line for the following conditions: • Deskphone uses wide band codec. • Deskphone detects poor network quality which impacts audio quality.
Support for French on-screen keyboard	This feature is enabled when French locale is configured.
Offline call logs	Supports addition of missed calls to the call log for calls received when a deskphone is offline. If the feature is enabled, after a user logs in, the user is able to see call history even for up to 10 calls that the deskphone received after the user logged out. The deskphone call log can be synchronized with the call log of a Avaya one-X® Communicator(H.323). This feature requires administration on Communication Manager.
Global version 9611G	Supports the new global version, icons only, of the 9611G deskphone.
Smart agent	Support for SLA Monagent. This feature requires the installation of the Avaya Diagnostic Server.
Querying the deskphone Hardware	Support for querying the deskphone Hardware revision through SNMP.
IDLEFEATURES parameter settings	IDLEFEATURES parameter settings now saved in a non-volatile memory thus retaining the information after power down or reboot.
SSH remote debug capability	SSH remote debug capability has been extended and includes now a wider commands set. In addition, there is a new option in the pdeskphone DEBUG menu to enable the SSH on the fly, without performing a reboot. Note: This works only when the value of SSH_ALLOWED parameter is set to 2 in the settings file.
New soft keys layout	Addition of new softkeys layout that can be configured in the settings file by setting the existing parameter AGTACTIVESK to a value of 3. The soft keys would be labeled as an active call in a non-call center environment from left to right: Hold, Conf, Transfer, Drop.
Addition of new parameters	Addition of the following new parameters: • CALL_LOG_JOURNAL -To trigger restore of offline call log journal. • PHNSCRCOLUMNS - To set column width for a deskphone. • QLEVEL_MIN - To specify the minimum quality level below which the LNQ icon is not displayed. • WBCSTAT - To indicate the use of a wideband codec. • AGENTGREETINGSDELAY - To specify the delay time for playing the agent greeting • SLMCAP - To specify whether theSLA Mon agent supports packet capture. • SLMCTRL - To specify whether the SLA Mon agent supports device control.

Feature	Description
	• SLMPERF - To specify whether the SLA Mon supports performance monitoring. • SLMPORT - To specify the UDP port used to receive commands from SLA Mon server. • SMMSRVR - To specify the source IP address and source port number for messages from the SLA Monserver. • SLMSTAT - To specify whether the SLA Mon agent would be enabled. • SLMTEST - To specify the UDP ports used for the RTP and traceroute tests.

SIP

The 6.4 introduces the following features.

Feature	Description
Team Button SAC/CFWD/ECF override	Users can override the redirection features, SAC, CFWD, ECF, if they are enabled on the monitored deskphone.
Team Button Direct Transfer	User can transfer an active call to the monitored deskphone by pressing the corresponding button instead of the Transfer softkey.
Busy Station Call Log Entry	Users can view those calls in the Call History that they received when: • The Restrict Last Appearance parameter is set to yes and they get an incoming call when all but one of the call appearances are busy. • The Restrict Last Appearance parameter is set to no and they get an incoming call when all their call appearances are busy. • The (Limit Number of Concurrent Calls) LNCC feature is active and they get an incoming call when they are already on an active call and the caller gets a busy tone.
Offline Call Logs	Users can view those calls in the Call History that they received when they were not logged in to the deskphone.
Limit Number of Concurrent Calls Feature Button	User can control the number of concurrent incoming calls by using the Limit Number of Concurrent Calls (LNCC) feature that changes the Multiple Call Appearance deskphone to a Single Call Appearance deskphone. If the user receives an incoming call when the LNCC feature is active and the user is already on a call, the caller gets the busy tone. The feature is not applicable to the calls that user receives on a Bridged Call Appearance.
Transfer on Hangup	Users can complete the call transfer by disconnecting the deskphone through any of the following methods: • Putting the handset on the cradle • Pressing Speaker • Pressing Headset

Feature	Description
Change Presence Status on IP Deskphone	Users can change their presence status manually.
Headset signaling for wireless (DECT) headsets	Add support for signaling to DECT headsets so that users can answer and disconnect a call and hear incoming call ring using the headset.
Support for 21 digit call logs	Supports storing of up to 21 digits in the call logs and calling from call logs with those 21 digits.
Media Quality Indicator	Users can view icons on the deskphone that provide information about: • Audio quality of a call. The deskphone displays a Local Network Quality (LNQ) icon when the audio quality of a call is low. LNQ is determined using a combination of packet loss, jitter, and delay. • Use of the wide band codec. The deskphone displays an HD icon when the deskphone uses the wide band codec.
TLS Connection Reuse	Supports a single connection between Session Manager and each SIP endpoint for both directions as opposed to two connections for each direction as used in previous releases. The feature reduces the number of TLS connections by half.
CEC Logging Events and Remote Identification Hardware	Supports logging of software upgrades to the log events.
Remote Identification of Hardware Revision	Provides a mechanism to remotely differentiate between 9608CR, 9608CR2, 9611CR, and 9611CR2 models through LLDP and SNMP that helps in remotely troubleshoot upgrade issues.
Change default for HEADSYS	The default value of the HEADSYS parameter is changed from 1 to 0.
Preconfiguration of SIP parameters through System Manager	You can now preconfigure some of the user selectable settings through System Manager that could only be configured through the deskphone. Any change by a user overrides these parameters that are set through System Manager. For more information about parameters, see *Administering Avaya Aura® System Manager*.

Related Links

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New in the 6.3 release

H.323

The 6.3 release introduces the following features.

Feature	Description
Single Sign on	Users can control the login and locked status of a telephone from their personal computer.

Feature	Description
	Note: Contact DevConnect for more information on obtaining the API and developing PC client applications.
Identity Certificate (SCEP) support	You can perform secure backup of agent greetings.
Authentication using EAP-TLS	Deskphones can authenticate users through the EAP-TLS mode of secure authentication.
IP redirect	Deskphones can download software from the nearest server on the network, thereby reducing download time.

SIP

The 6.3 introduces the following features.

Feature	Description
Calling and called party specific ring tones	Users can assign any available ring tone to calls associated with calling or called parties for the following cases: • A call to the deskphone from a known calling party. • A call to the deskphone after being forwarded from a known called party. You can choose to hear the tone from the calling deskphone or the first phone that forwarded the call. • A call to the deskphone for team buttons administered on the deskphone. • A call to the deskphone for bridge call appearances administered on the deskphone.
Support additional ring tones	Users can get additional ring tones by downloading WAV files from the file server. Now, you can select from: • Classic or European ring tones • Downloaded ring tones • Rich ring tones
Selectable headset tunings	Users can select headset audio profile based on the headset that they use to get better quality audio.
Support for Exchange Server 2010	Users can connect to the Microsoft Exchange Server 2010 to gain access to Exchange contacts, appointments, and reminders.
Support for 100 emergency numbers	You can configure 100 emergency numbers through the settings file.
Provide PHY2 tagging	You can control whether VLAN tags should be removed from the frames that a deskphone forwards to the secondary Ethernet interface.
Secure software upgrade	Users can now use HTTPS for deskphone software upgrade.
Support for presence Access Control List	You can control whether the deskphone automatically confirms a request from a watcher to monitor user presence.
Multiple Device Access	You can register up to 10 SIP devices with a single extension.

Related Links

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Feature comparison of H.323-based and SIP-based models

Two major protocols that handle Voice over IP (VoIP) signaling for 9600 Series IP Deskphones are SIP and H.323. The two protocols provide connection control and call progress signaling, but in very different ways. You can use these protocols simultaneously over the same network. The 9600 Series IP Deskphones models do not support both protocols at the same time. Neither protocol is necessarily superior, but each offers some unique advantages.

Feature	H.323-based models	SIP-based models
Additional required servers	None	Use the following servers: • SIP Proxy server to control SIP signalling. • Network Time server to control time-related parameters. • Presence server to track presence information of contacts added in the contacts list.
Backup and restore	Use HTTP to store backup files.	Use the Personal Profile Manager (PPM) services for backup and restore.
Network Address Translation (NAT)	Support	Do not support
Settings file and system parameters	Same as used by SIP models	Same as used by H.323. However, there are number of SIP-specific parameters used only by SIP-based models.
Language Support	Support the following languages: • Arabic • Chinese • Dutch • English • French • German • Hebrew	Support the following languages: • Arabic • Simplified Chinese • Dutch • English • Parisian French • German • Hebrew • Italian

Feature	H.323-based models	SIP-based models
	• Italian • Japanese • Korean • Portuguese • Russian • Spanish • Turkish • Polish	• Japanese • Korean • Brazilian Portuguese • Russian • Latin American Spanish • Canadian French • Castilian Spanish
Resource ReSerVation Protocol (RSVP)	Support	Do not support
Quality of Service (QoS)	Use Avaya Aura® Communication Manager to set QoS.	Use parameters, such as L2QAUD, L2QSIG, DSCPAUD, and DSCPSIG to set QoS.
Presence	Do not support	Support
Integration with Microsoft Exchange and calender	Do not support	Support
Support of remote workers	Through Virtual Private Network (VPN)	Through Avaya SBCE (Session Border Controller for Enterprise)
Integrated Bluetooth on 9641G	Support	Do not support

Related Links

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Chapter 3: Interoperability

Product compatibility

For the latest and most accurate compatibility information of 9600 Series IP Deskphones with call servers, see Product Compatibility Matrix.

For the latest and most accurate compatibility information of SIP-based 9600 Series IP Deskphones with headsets, see the document *Avaya one-X® 96X1 Series IP Deskphone Headset Profiles* at the Avaya Support website.

Chapter 4: Performance specifications

Traffic

9600 Series IP Deskphones supports operations that IEEE 802.3 standards specify. The following table lists the standards and the models that support them.

Standard	9601	9608 9608G	9611G	9621G	9641G
10BASE-T with autonegotiation	Yes	Yes	Yes	Yes	Yes
100BASE-TX with autonegotiation	Yes	Yes	Yes	Yes	Yes
1000BASE-T with autonegotiation	No	9608: No 9608G: Yes	Yes	Yes	Yes
Internal Ethernet switch that support half-duplex or full-duplex at the speed of 10 Mbps or 100 Mbps for non-gigabit phones and 10 Mbps, 100 Mbps, or 1000 Mbps for gigabit phones on either interface	Yes	Yes	Yes	Yes	Yes
Media Access Control (MAC) frame structure	Yes	Yes	Yes	Yes	Yes
Collision backoff delay	Yes	Yes	Yes	Yes	Yes
Auto MDI/MDI-X	Yes	Yes	Yes	Yes	Yes

Power

9600 Series IP Deskphones supports:

- Local powering, that is, by plugging the power cord into the power source.
- Power over Ethernet (PoE) or LAN-based powering as per IEEE 802.3af specification.

The IEEE 802.3af standard specifies up to 15.4 W of DC power that has a voltage of minimum 44 V DC and a current specification of 350 mA for each device. The following table provides the details of power consumption for each model.

Standard	9601	9608 9608G	9611G	9621G	9641G
IEEE power classification	1	1	1	2	2
Power consumption when conservation mode is disabled (watts)	1.73	2.08	3.12	3.49	3.44
Power usage when conservation mode is enabled and backlight is turned off (watts)	1.73	1.93	2.64	3.18	3.28
Maximum power consumption (watts)	2.02	2.55	3.78	4.27	4.12
Power class target when button module is attached	Does not support button module	1,2	1,3	Does not support button module	2,3
Power class switch to change power class when you attach button module	No	Yes	Yes	No	Yes

Port and switch

9600 Series IP Deskphones supports the following ports and switches.

Port and switch	9601	9608 9608G	9611G	9621G	9641G
USB 2.0	No	No	Yes	No	Yes
PC port	Yes	Yes	Yes	Yes	Yes
Headset jack	Yes	Yes	Yes	Yes	Yes
Button module interface	No	Yes	Yes	No	Yes
Adapter interface	No	No	No	No	No
Ethernet interface	10/100 Mbps	9608: 10/100 Mbps 9608G: 10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Secondary Ethernet interface	10/100 Mbps	9608: 10/100 Mbps 9608G: 10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
IEEE power switch	No	No	Yes	No	Yes

Software

9600 Series IP Deskphones supports the following software.

Software	9601	9608 9608G	9611G	9621G	9641G
Call control protocol	SIP	SIP and H.323	SIP and H.323	SIP and H.323	SIP and H.323
Codec	• G.711 u/a law • G.722 • G.726 • G.729 a/b	• G.711 u/a law • G.722 • G.726 • G.729 a/b	• G.711 u/a law • G.722 • G.726 • G.729 a/b	• G.711 u/a law • G.722 • G.726 • G.729 a/b	• G.711 u/a law • G.722 • G.726 • G.729 a/b

Chapter 5: Environmental specifications

Hardware

9600 Series IP Deskphones supports the following hardware specifications.

Standard	9601	9608 9608G	9611G	9621G	9641G
Dimensions in inches (cms): Height Width Depth without the stand	9.1 (23) 7.1 (18) 1.4 (3.5)	9.1 (23) 8 (20.4) 1.4 (3.5)	9.1 (23) 8 (20.4) 1.4 (3.5)	9.1 (23) 9.1 (23) 1.4 (3.5)	9.1 (23) 9.1 (23) 1.4 (3.5)
Wall mountable	Yes	Yes	Yes	Yes	Yes
Stand	Dual position	Dual position flip	Dual position flip	Dual position flip	Dual position flip
Resistive touch screen	No	No	No	Yes	Yes
Display type	Monochrome	FSTN monochrome	TFT 8 bit color	TFT 24 bit color	TFT 24 bit color
Display size in inches (cms)	2.4 x 1.1 (6.2 x 2.6)	3.2 x 2.2 (8.2 x 5.5)	2.8 x 2.1 (7.0 x 5.3)	3.7 x 2.1 (9.5 x 5.4)	4.1 x 2.3 (10.4 x 5.9)
Display resolution	132 x 59 pixel	180 x 120 pixel	320 x 240 pixel	480 x 272 pixel	480 x 272 pixel
Display backlight	No backlight	White	Yes	Yes	Yes
Call appearance or display buttons	2 with red and green LEDs each	8 with red and green LEDs each	8 with red and green LEDs each	Integrated in display	Integrated in display
Softkeys call control	3	4	4	Variable integrated in display	Variable integrated in display
Bluetooth support	Yes, with external adapter	Yes, with external adapter	Yes, with external adapter	Yes, with external adapter	Integrated Bluetooth supported only for H.323–based phones
Handset	Wideband	Wideband	Wideband	Wideband	Wideband

Standard	9601	9608 9608G	9611G	9621G	9641G
Handset weight in lbs (gms)	0.31(141)	0.31 (141)	0.31 (141)	0.31 (141)	0.31 (141)
Handset cord: length, type	9 ft (274.3 cms), 4-conductor coiled	9 ft (274.3 cm), 4-conductor coiled	9 ft (274.3 cm), 4-conductor coiled	9 ft (274.3 cm), 4-conductor coiled	9 ft (274.3 cm), 4-conductor coiled
Handset transmission frequency	7 Khz	7 Khz	7 Khz	7 Khz	7 Khz
Handset receiving frequency	7 Khz	7 Khz	7 Khz	7 Khz	7 Khz
Handsfree	Narrowband	Narrowband	Narrowband	Wideband	Wideband
Microphone	1 omni-directional	1 omni-directional	1 omni-directional	1 omni-directional	1 omni-directional
Gigabit Ethernet	No	9608: No 9608G: Yes	Yes	Yes	Yes
Ethernet signal range	100 meters on category 5e unshielded twisted pair (UTP) cabl	100 meters on category 5e unshielded twisted pair (UTP) cable	100 meters on category 5e unshielded twisted pair (UTP) cable	100 meters on category 5e unshielded twisted pair (UTP) cable	100 meters on category 5e unshielded twisted pair (UTP) cable
Buttons	Activation force = 100 to 160 grams Travel distance = 1.1 to 1.3 millimeters Height = approximately 0.5 millimeter above the housing when fully depressed Snap ratio of 0.35 +/- 0.1 or higher	Activation force = 100 to 160 grams Travel distance = 1.1 to 1.3 millimeters Height = approximately 0.5 millimeter above the housing when fully depressed Snap ratio of 0.35 +/- 0.1 or higher	Activation force = 100 to 160 grams Travel distance = 1.1 to 1.3 millimeters Height = approximately 0.5 millimeter above the housing when fully depressed Snap ratio of 0.35 +/- 0.1 or higher	Activation force = 100 to 160 grams Travel distance = 1.1 to 1.3 millimeters Height = approximately 0.5 millimeter above the housing when fully depressed Snap ratio of 0.35 +/- 0.1 or higher	Activation force = 100 to 160 grams Travel distance = 1.1 to 1.3 millimeters Height = approximately 0.5 millimeter above the housing when fully depressed Snap ratio of 0.35 +/- 0.1 or higher
Permanently labeled feature buttons	Speaker with red LED Headset with red LED	Speaker with red LED Headset with red LED	Speaker with red LED Headset with red LED	Speaker with red LED Headset with red LED	Speaker with red LED Headset with red LED

Standard	9601	9608 9608G	9611G	9621G	9641G
	Mute with red LED Volume Phone History with red LED Contacts “A” Menu Message Navigation: up, down, left, right OK More	Mute with red LED Volume Phone History with red LED Contacts “A” Home Message Navigation: up, down, left, right OK	Mute with red LED Volume Phone History with red LED Contacts “A” Home Message Navigation: up, down, left, right OK	Mute with red LED Volume Phone History with red LED Contacts “A” Home Message with red LED Forwarding with red LED	Mute with red LED Volume Phone History with red LED Contacts “A” Home Message with red LED Forwarding with red LED
Reliability rate in technician usage rate measured as the number of units used from repair stock per month per 100 units in the installed base	Less than or equal to 0.1	Less than or equal to 0.1	Less than or equal to 0.1	Less than or equal to 0.1	Less than or equal to 0.1

Altitude and air pressure

9600 Series IP Deskphones function normally at altitudes from sea level to 10,000 feet and can withstand a pressure of 15.2 to 9.4 psia.

Temperature and humidity

All Avaya IP 9600 Series IP deskphones work in a temperature range from 40 to 120 degrees Fahrenheit or 4 to 49 degrees Celsius.

Storage environment specifications

Extreme temperature specifications: All Avaya IP 9600 Series IP deskphones work normally after being soaked for at least 6 hours each in a non-operational state at -40 degree Fahrenheit and any relative humidity, at 90 degree Fahrenheit and 90% relative humidity, and at 150 degrees Fahrenheit and 15% relative humidity. The deskphones can function normally after up to three hours of recovery time at ambient conditions following each stress.

Temperature and humidity specifications: All Avaya IP 9600 Series IP deskphones function normally after a recovery time of up a to three hours at ambient conditions when cycled through the following temperature and non-condensing humidity conditions three times: 30 minutes at 150 degree Fahrenheit and 15 percent relative humidity, followed by 30 minutes at 90 degrees Fahrenheit and 90 percent relative humidity, followed by 30 minutes at -40 degrees F and any convenient humidity.

Normal operating specification: All Avaya IP 9600 Series IP deskphones function normally in the environment where temperatures are between 40 degrees Fahrenheit and relative humidities are between 5 percent and 95 percent, except that above 84 degree Fahrenheit, the maximum relative humidity is limited to that corresponding to a specific (absolute) humidity of 168 grains of water vapor per pound (lbm) of dry air. For example, 34 percent relative humidity at 120 degrees Fahrenheit, assuming an atmospheric pressure of 14.7 psia. The deskphones are allowed up to 30 minutes to stabilize at each temperature tested.

Design for Environment Guidelines and specifications

All 9600 Series IP deskphones conform to the Design for Environment Guidelines and Requirements [8.1-5] as clarified below.

DFE Guidelines for Energy Efficient Products (Section 2): All 9600 Series IP deskphones do not require a cooling fan.

DFE Guidelines for Products Containing Batteries (Section 3): All 9600 Series IP deskphones do not contain batteries.

DFE Guidelines for Designing Plastic Parts (Section 4): All 9600 Series deskphone plastic parts are not coated (Section 4.4). Note: Section 4.4 of the Design for Environment Guidelines and Requirements specifies that plastic parts are not to be painted. However some deskphones might have been painted.

All 9600 Series IP deskphones housing and handset surfaces are textured (Section 4.5).

All 9600 Series deskphone plastic parts do not use resins containing:

- PVC (Section 4.7.1.2)
- Brominated flame retardants: polybrominated biphenyl, polybrominated biphenyl oxide (PBBO, also called polybrominated biphenyl ether (PBBE), polybrominated diphenyl oxide (PBDO) and polybrominated diphenyl ether (PBDE)), bromomethane and halothane (Sections 4.7.1.3, 4.9.1 and Appendix A)
- Halogenated flame retardants (Section 4.9.2)
- Heavy metal additives: lead, cadmium, chromium and mercury (Sections 4.7.1.4 and 4.9.3).
- All 9600 Series IP deskphone plastic parts weighing more than 25 grams are marked with ISO-compliant resin codes (Section 4.8). DFE Guidelines for Designing Printed Wiring Boards (Section 5):
- All 9600 Series IP deskphones do not contain lead (Section 5.3). All IP telephones do not use components containing mercury (Section 5.7.2).
- DFE Guideline for Waste Electrical and Electronic Equipment (WEEE) (Section 6.5.1). See also section [8.4-6].

Physical system protection

External voltages, surges, and transient specifications

All Avaya 9600 Series IP deskphones function normally after being subjected to surges marked normal in the table below. All Avaya 9600 Series IP deskphones comply with appropriate safety requirements after being subjected to all surges in the following table. .Surges are specified below as either normal or FCC (Part 68 Rules). The peak voltage and peak current define a constant source resistance of the surge generator.

Table 1: High voltage surge table

TYPE	Peak voltage (Volts)	Peak current (Amps)	Maximum rise time (µ sec)	Maximum decay time (µ sec)	Number of surges of polarity each
P-2 FCC	2500	1000	2	10	10
P-4A Normal	6000	200	0.5	See Note A	12
T-1A Normal	6000	200	0.5	See Note A	12
NOTE A: 0.5 µsec - 100 kHz ringing wave shape; refer to IEEE-587 IEEE, Inc., IEEE Guide for Surge Voltages in Low-Voltage AC Power Circuits, IEEE Std 587-1980, January 30, 1981.					

Peak voltage applies with the source terminated in at least 10,000 Ohms. Peak current applies with the source terminated in a short circuit. Rise and decay times apply to both voltage and current waveforms terminated as indicated above, and are defined as follows: Rise Time is the interval between the 10 percent and 90 percent of peak points on the leading edge multiplied by 1.25.

Decay Time is the time interval between the 10 percent of peak point on the leading edge and the 50 percent of peak point on the trailing edge.

Electromagnetic compatibility specifications

Radiated Emissions: All 9600 Series IP deskphones meet the applicable FCC Rules Part 15 regulations for Class B devices. Radiated emissions from 9600 Series IP deskphones do not exceed the level of field strength specified in the following table for Class B devices.

Table 2: Maximum allowed radiated field strength

Freq	Class A		Class B
	Field strength in dbµV/m	Field strength in dbµV/m	
	At 10 metres	At 3 metres	At 3 metres
30 to 88	39	49	40
88 to 216	44	54	43
216 to 960	46	56	46
above 960	50	60	54

Radiated RF emission specification

All 9600 Series IP deskphones meet Class B radiated emissions limits EN55022:2006 as specified in the following table:

Table 3: Radiated Emission Limits for International Applications

Frequency	Class A Quasi-Peak Field Strength Limit (dBµV/m at 10 m)	Class B Quasi-Peak Field Strength Limit (dBµV/m at 10 m)
30 - 230	40	30
230 - 1000	47	37

Conducted RF emissions specifications (FCC)

All 9600 Series IP deskphones meet the applicable FCC Rules Part 15 regulations [2] for Class B devices. 9600 Series IP deskphones limit radio frequency voltage conducted back into the ac power lines to values below FCC Part 15 Class B levels.

Conducted RF emissions specifications (CE Mark)

All 9600 Series IP deskphones meet the following Class B conducted emissions limits for ac Mains and for telecommunication ports (EN55022:2006).

Table 4: Conducted Emissions Limits for International Applications on AC Mains

Freq (MHz)	Class A Emission Limits (dbµV)		Class B Emission Limits (dbµV)	
	Quasi-Peak	Average	Quasi-Peak	Average
0.15 – 0.5	79	66	66 - 56	56 - 46
0.5 - 5	73	60	56	46
5 - 30	73	60	60	50

Table 5: Conducted Common Mode Emissions Limits for International Applicationson Telecommunication Ports for Class B Equipment

Freq (MHz)	Voltage limits (dbµV)		Voltage limits (dbµA)	
	Quasi-Peak	Average	Quasi-Peak	Average
0.15 – 0.5	84 - 74	74 - 64	40 - 30	30 - 20
0.5 - 30	74	64	30	20
Where a range of limits is specified, the limits decrease linearly with the logarithm of the frequency. The above limits are given in terms of the current measured into a terminating impedance stabilization network (ISN) under the assumption that the 150-Ohm impedance will be realized throughout the test range. The tighter (lower) limit applies at the transition frequency.				

Electrostatic Discharge (ESD) Immunity – ESD Performance under Normal Operation for CE Mark:

All 9600 Series IP deskphones comply with the ESD immunity requirements in EN 55024:1998, and Amendment A1:2001 to EN 55024:1998 and Amendment A2:2003 to EN 55024:1998

Radiated RF Electromagnetic Field Immunity

All 9600 Series IP deskphones comply with the conducted RF Field immunity requirements in EN 55024:1998, and Amendment A1:2001 to EN 55024:1998 and Amendment A2:2003 to EN 55024:1998, including the particular test conditions and particular performance criteria in Appendix A of that standard.

EFT Immunity for CE Mark

All 9600 Series IP deskphones comply with the EFT immunity requirements in EN 55024:1998, and Amendment A1:2001 to EN 55024:1998 and Amendment A2:2003 to EN 55024:1998.

Surge Immunity for CE Mark

All 9600 Series IP deskphones comply with the Surge immunity requirements in EN 55024:1998, and Amendment A1:2001 to EN 55024:1998 and Amendment A2:2003 to EN 55024:1998.

Power Frequency Magnetic Field Immunity for CE Mark

All 9600 Series IP deskphones comply with the Power Frequency Magnetic Field immunity requirements in EN 55024:1998, and Amendment A1:2001 to EN 55024:1998 and Amendment A2:2003 to EN 55024:1998, including the particular test conditions and particular performance criteria in Appendix B of that standard.

AC Voltage Dips and Interruptions Immunity for CE Mark

All 9600 Series IP deskphones comply with the ac Voltage Dips and Interruptions immunity requirements in EN 55024:1998, and Amendment A1:2001 to EN 55024:1998 and Amendment A2:2003 to EN 55024:1998.

Safety and Protection Platform specifications

All 9600 Series IP deskphones conform to the requirements of IEC-60950-1 [8.4-4a], EN60950-1 [8.4-4b] and UL-60950-1 [8.4-4c].

All 9600 Series IP deskphones are listed with c/UL to the requirements of UL 60950-1.

All 9600 Series IP deskphones are certified to the requirements of IEC 60950-1 according to the procedure of the IECEE CB Scheme.

Regulatory standards

Table 6: Telecom specifications

US FCC (Part 15, including Class B EMC, and Part 68 (HAC) hearing-aid compatibility)
European Union CE (including Class B EMC and CB Scheme report with all National Differences) EC EN55022: 2006
CSA / UL (Canadian and USA Safety)
VCCI (Japanese Voluntary Control Council for Interference by Information Technology Equipment)
CB Test for TUV
JATE (Japan Approvals Institute for Telecommunications Equipment)

NOM (Normas Oficiales Mexicanas –safety)
RoHS/lead free compliance
ANATEL (label with registration number and EAN number/bar code for Brazil)
China RoHS
Korea (only MIC Information device test certificate, the Telecommunication will be done by Avaya)
AUS C-Tick
Russian PCT Type Approval
WEEE compliance with associated icon: 
FCC Part 15 Class B and EU Class B EMC requirements
ACP systems (of which the IP telephones are a part) are registered for FCC Part 68 compliance.
Dialpad layout- ITU-T Recommendation E.161 [8.6-1]
HAC on handset “HAC” is included on the phone per FCC Part 68.300 (c) to indicate hearing-aid compatibility

Chapter 6: Dial Plan

You can create a dial plan for 9600 Series IP Deskphones using the following characters.

Character	Description
Digits 0 through 9	Specific dialpad digits.
Asterisk (*)	The dialpad character asterisk (*).
Pound (#)	The dialpad character #, but only if it is the first character in the dialed string.
x	Any dialpad digit from 0 to 9.
Z or z	Present dial tone to the user. For example, for Feature Access Code (FAC) entry.
Brackets ([ ])	Any one character within the brackets is a valid match for a dial plan string.
Minus (-)	Any one digit between the bounds within the brackets, inclusive, is a match.
Plus (+)	The character before plus (+) may be repeated 0 or more additional times, for a valid match.
Pipe (|)	If there are multiple valid dial plan elements, each one is separated from the next by an OR symbol.
(“|”)	If the dial plan text string begins or ends with an OR symbol, that symbol is ignored.

Dialable characters

Characters that a user would put in a dial string. These are different from the dial plan elements.

Character	Description
Comma (,)	A comma (,) creates a 1.5-second pause between the digits that are sent. Do not use a comma (,) as the first character in the string.
Pound (#)	Can either be the first dialed element used in a FAC or TAC or the last character which is an end of dial string indication.
Asterisk (*)	Can either be the 1st dialed element used in a FAC or TAC.

Chapter 7: Security

Security overview

9600 Series IP Deskphones supports the following security features:

- HTTP authentication for backup and restore operations.
- Compliance with IETF RFC 1948 *Defending Against Sequence Number Attacks, May 1996, 14 by S. Bellovin* from Release 1.5 onwards.
- Models that provide WML Web applications to support Transport Layer Security (TLS) to establish a secure connection to an HTTP server on which the upgrade and settings files reside.

SSH

Avaya Services uses Secure Shell (SSH) protocol to remotely connect to 9600 Series IP Deskphones to monitor, diagnose, or debug phone performance. Release 6.2 supports only the SSHv2 version.

TLS

9600 Series IP Deskphones supports Transport Layer Security (TLS) to enhance the security of your HTTP environment. The deskphones support HTTP and HTTPS authentication for backup and restore operations.

VPN

You can use H.323–based 9600 Series IP Deskphones on a Virtual Private Network (VPN) if your administrator configures the VPN option for your deskphones. VPN uses a high-speed connection to the Internet and then to the VPN-administered solution in the enterprise network. VPN provides a significant improvement of the communications capabilities of SOHO users. With the 9600 Series IP

Deskphones Release 3.1 and later, you can implement a VPN in enterprise networks with third-party devices.

Avaya SBCE

You can use 9600 Series IP Deskphones with Avaya Session Border Controller for Enterprise (SBCE) to provide support for remote workers. Avaya SBCE provides the SIP trunking feature that allows SIP trunk-enabled enterprises to completely secure SIP connectivity over the Internet through SIP trunking services that Internet Telephony Service Provider (ITSP) provides.

SIP trunking ensures the privacy of all calls traversing the enterprise network, while maintaining a well-defined demarcation point between the core and access network. In addition, organizations can use SIP trunking to maintain granular control through well-defined domain policies. These policies secure SIP devices and servers from known SIP and Media vulnerabilities.

EAP-TLS

9600 Series IP Deskphones supports Extensible Authentication Protocol-Transport Layer Security (EAP-TLS) mode of authentication. The call server supports EAP-TLS as specified in RFC 2716 if an identity certificate is present in the deskphone.

SCEP

9600 Series IP Deskphones supports Simple Certificate Enrollment Protocol (SCEP) to provide an identity certificate for use with certificate-based VPN authentication methods. The 802.1x EAP-TLS method also uses the identity certificate for authentication. When you use TLS with HTTPS, you can use the identity certificate to:

- Authenticate the deskphone
- Save the agent greetings
- Perform a backup or restore

9600 Series IP Deskphones supports Media Encryption (SRTP) and uses built-in Avaya certificates for trust management. You can apply SCEP to your VPN operations or to standard enterprise network operations.

802.1X Supplicant operation

9600 Series IP Deskphones supports Supplicant operation and Extensible Authentication Protocol (EAP), but for software Release 6.1 and earlier, only with the MD5-Challenge authentication method.

Virus malware related attacks

Deskphones are delivered free from known viruses, worms, and other malware. Products are built in an environment that is free from known viruses, worms, and other malware. The "gold" version of a product is built on a machine that is known to be clean. For example, built from a known source or the operating system version is taken from the manufacturer's source.

JITC certification

For products sold into the U.S. Government sector, Joint Interoperability Test Command (JITC) certification is a mandatory requirement. Based on the operating system and the capabilities of the product, each product must adhere to the respective standard specified at http://iase.disa.mil/stigs/checklist/index.html.

Verification of JITC functionality includes execution of the scripts for the respective operating system on the product. The scripts are specified at http://iase.disa.mil/stigs/SRR/index.html.

Note:

Only H.323–based phones are JITC certified.

Port utilization

For the latest and most accurate information about ports and protocols that 9600 Series IP Deskphones utilizes, see Port Matrix. On the Web page, select the required link under Avaya one-X® Deskphone.

Chapter 8: Licensing requirements

You require the following licences for 9600 Series IP Deskphones:

- The Right to Use the software that runs on 9600 Series IP Deskphones. This license is already included with the purchase of the deskphone.
- The Right to Connect 9600 Series IP Deskphones to Communication Manager, Session Manager, or IP Office. This license is controlled by simultaneous user licenses that these servers enforce.

You can purchase licenses in bulk as required. For more information on the software license terms, see Policies & Legal.

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