AVAYA

Application Notes for Configuring Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1, SD Pro2 and SD Office Wireless Headsets with Avaya 9400 and 9500 Series Digital Deskphones – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate the Sennheiser Communications A/S CEHS-AV 04 EHS (Electronic Hook Switch) Adapter and SD Pro1, SD Pro2 and SD Office wireless headsets with Avaya 9400 and 9500 Series Digital Deskphones. The Sennheiser Communications A/S CEHS-AV 04 EHS Adapter provides wireless headsets the ability to hear ring tones, answer and end calls, and mute/un-mute calls directly from the headset including situations where the user is away from their desk. The Sennheiser Communications A/S SD Pro1, SD Pro2 and SD Office wireless headsets were used to verify the functionality of the CEHS-AV 04 EHS Adapter.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

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Solution & Interoperability Test Lab Application Notes
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1. Introduction

These Application Notes describe the configuration steps required to integrate the Sennheiser Communications A/S CEHS-AV 04 EHS (Electronic Hook Switch) Adapter with Avaya 9400 and 9500 Series Digital Deskphones.

The following headsets and accessories were tested:
- CEHS-AV 04 EHS (Electronic Hook Switch) Adapter – Provides wireless headsets the ability to hear ring tones, answer/end calls, mute/un-mute calls directly from the headset including situations where the user is away from their desk.
- SD Pro1 – Monaural wireless headset.
- SD Pro 2 – Binaural wireless headset.
- SD Office – Monaural wireless headset.

2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. The feature testing focused on placing calls to and from the Avaya 9400 and 9500 Series Digital Deskphones with Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1, SD Pro2 and SD Office wireless headsets and verifying two-way audio. The call types included calls to voicemail, to local extensions, and to the PSTN.

The serviceability testing focused on verifying the usability of the Sennheiser Communications A/S SD Pro1, SD Pro2 and SD Office wireless headsets after restarting the Avaya 9400 and 9500 Series Digital Deskphones.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect members solution.

Avayas formal testing and Declaration of Conformity is provided only on the headsets/handsets that carry the Avaya brand or logo. Avaya may conduct testing of non-Avaya headset/handset to determine interoperability with Avaya phones. However, Avaya does not conduct the testing of non-Avaya headsets/handsets for: Acoustic Pressure, Safety, Hearing Aid Compliance, EMC regulations, or any other tests to ensure conformity with safety, audio quality, long-term reliability or any regulation requirements. As a result, Avaya makes no representations whether a particular non-Avaya headset will work with Avaya telephones or with a different generation of the same Avaya telephone.

Since there is no industry standard for headset interfaces, different manufacturers utilize different headset interfaces with their telephones. Therefore, any claim made by a headset vendor that its

product is compatible with Avaya telephones does not equate to a guarantee that the headset will provide adequate safety protection or audio quality.

2.1. Interoperability Compliance Testing

All test cases were performed manually. The following features were verified:
- Placing calls to the voicemail system. Voice messages were recorded and played back to verify that the playback volume and recording level were acceptable.
- Placing and receiving calls to and from internal extensions to verify two-way audio.
- Placing and receiving calls to and from the PSTN to verify two-way audio.
- Hearing ring back tone for incoming and outgoing calls.
- Answering and ending calls using the call control button on the headset.
- Using the volume control buttons on the headset to adjust the audio volume.
- Using the mute control button on the headset to mute and un-mute the audio.

For the serviceability testing, the 9400 and 9500 Series Digital Deskphones were restarted to verify proper operation of the headset after the reboot was completed.

2.2. Test Results

Testing was completed successfully with the following observations/limitations.
- On Avaya Digital 9500 Deskphone, pressing the headset button on the Deskphone first does NOT automatically activate the call control button on the headset. If the user prefers to use the headset button on the Deskphone, instead of the call control button on the wireless headset, or the telephone icon button on the base of the headset to answer, terminate, or to place calls, the call control button on the headset has to be active or enabled. Once the call control button on the headset is activated (by pressing it), the headset button on the Deskphone can be used to answer, terminate, or to place calls. Without it being enabled or active the headset will not receive dial-tone when attempting to place calls or audio when answering calls if the headset button on the Deskphone is used. On the 9400 Digital Deskphone, pressing the headset button on the Deskphone first **does** automatically activate the call control button on the headset.
  Activation of dip switch 4 implies that the audio link to the headset will be opened when the headset is taken out of the base station and the user only has to push the deskphone button to answer, terminate or place calls.

- When the other end hangs up an ongoing call with the Deskphones using the headset, the Deskphones do not return to the IDLE state. This issue is under investigation by the Avaya client team.

- Note that the user will hear a series of beeping tones instead of the normal incoming call alerting tones on the headset during incoming calls if the call control button on the headset or the telephone icon button on the base of the headset is active or enabled. The recommendation for wireless headsets is to always use the call control button on the headset to answer, terminate, or to place calls.

2.3. Support

For support on the Sennheiser Communications A/S headset solution, contact Sennheiser Communications A/S technical support at:

Website: http://en-de.sennheiser.com/service-support/

3. Reference Configuration

Two configurations were tested, Avaya IP Office with 9500 Series Deskphones and Avaya Aura® Communication Manager with 9400 Series Deskphones.

Figure 1 illustrates the test configuration used to verify the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1, SD Pro2 and SD Office wireless headsets with Avaya 9500 Series Digital Deskphones. The 9500 Series handsets were configured and managed via an Avaya IP Office 500 V2 and an IP Office Digital expansion module. Avaya SIP and H.323 phones were also deployed as part of the configuration for test purposes only to make / receive calls with the digital device. The configuration of the SIP and H.323 devices and related equipment is beyond the scope of this document.
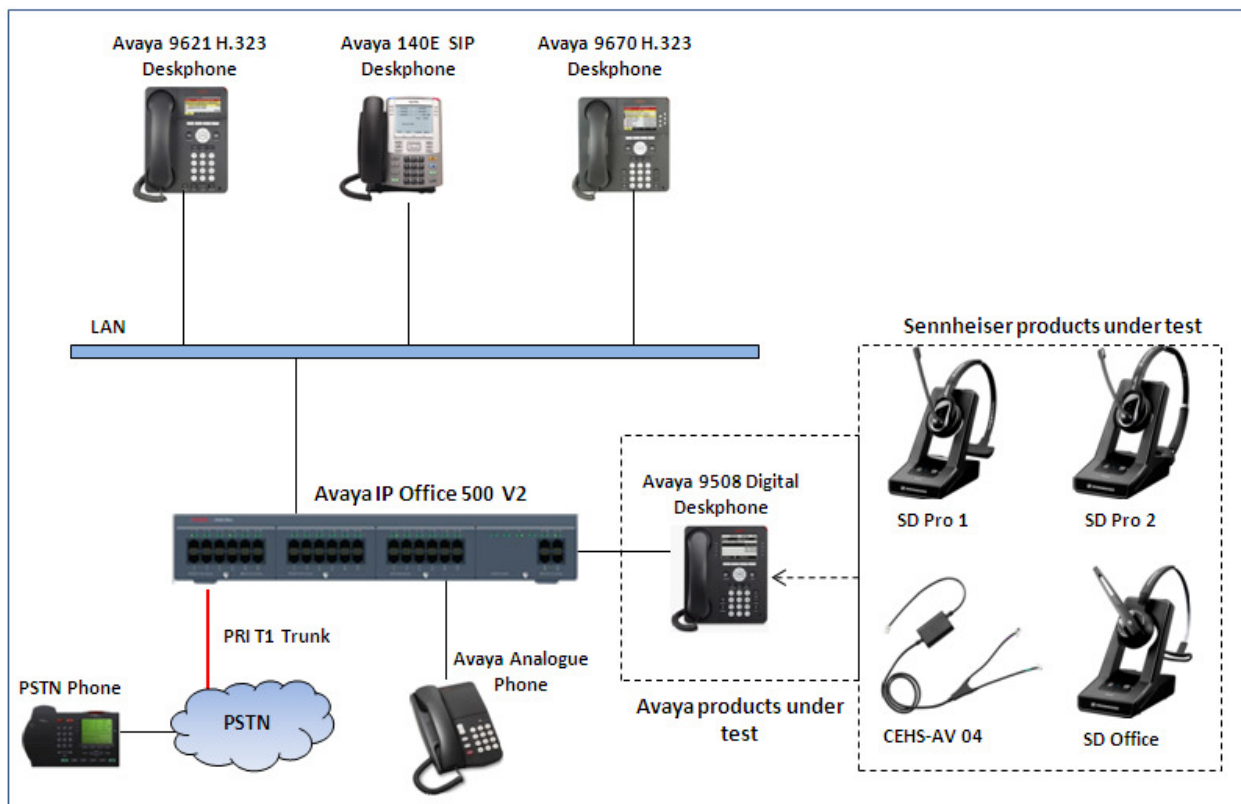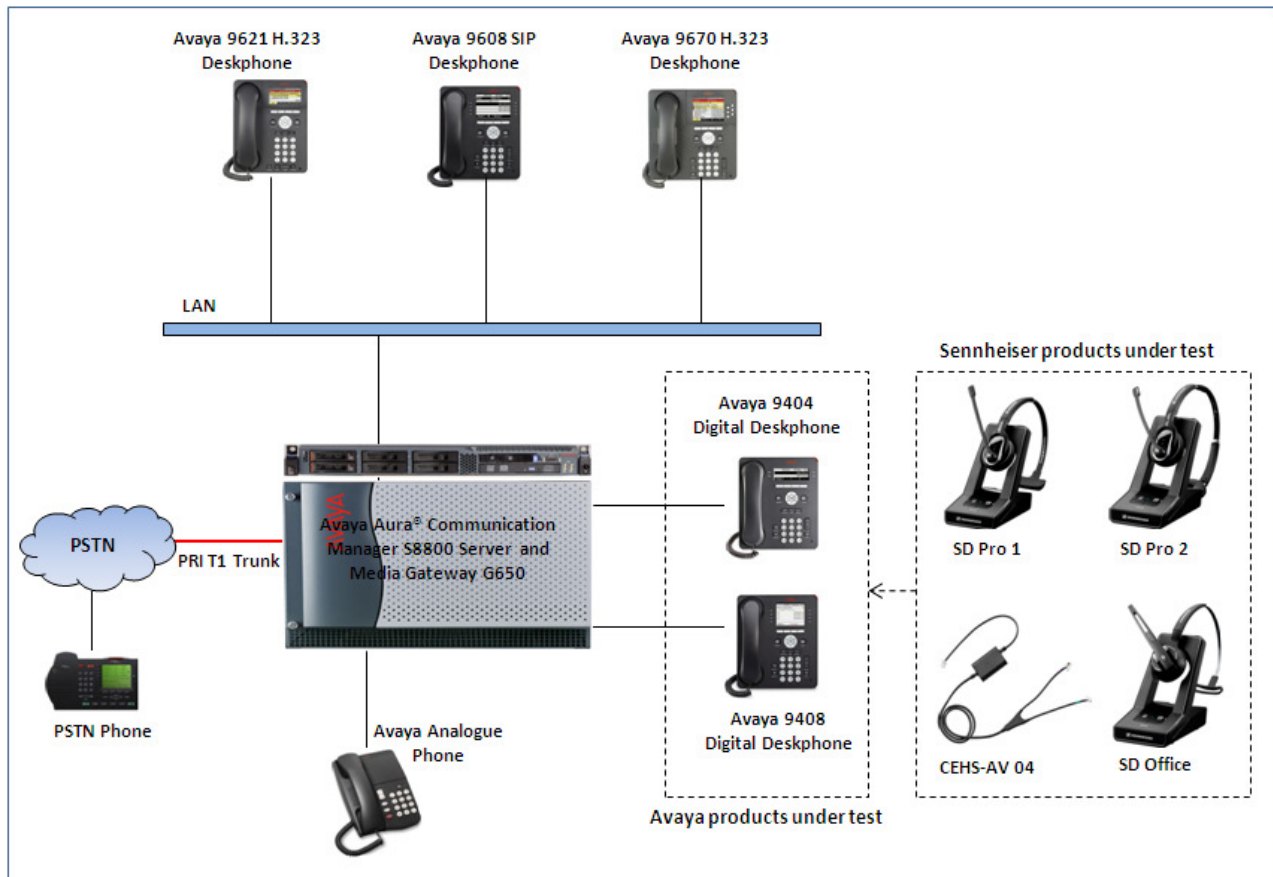

Figure 1: Test diagram for Avaya 9500 Series Digital Deskphone with Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1, SD Pro2 and SD Office Wireless Headsets.

Figure 2 illustrates the test configuration used to verify the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1, SD pro2, SD Office wireless headsets with Avaya 9400 Series Digital Deskphones. The 9400 Series handsets were configured and managed via an Avaya S8800 Server running Avaya Aura® Communication Manager R6.3 with an Avaya G650 Media Gateway. Avaya SIP and H.323 phones were also deployed as part of the configuration for test purposes only to make / receive calls with the digital device. The configuration of the SIP and H.323 devices and related equipment is beyond the scope of this document.

Figure 2: Test diagram for Avaya 9400 Series Digital Deskphone with Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1 and SD Pro2, SD Office Wireless Headsets.

4. Equipment and Software Validated

The following equipment and software were used for the compliance test:

Equipment	Software
Avaya Aura® Communication Manager running on an Avaya S8800 Server	R6.3 – FP2 Build R016x.03.0.124.0 Patch 20553

Avaya Media Gateway G650
  ▪ IP Server Interface TN2312BP
  ▪ Digital Line TN2224
	
	▪ FW043
	▪ 000006

Avaya IP Office 500V2	8.1.68
Avaya 9621G H.323 Deskphone	6.2.3313
Avaya 9670 SIP Deskphone	3.103S
Avaya 9608 SIP Deskphone	6.2.2
Avaya 9404 Digital Deskphone	21
Avaya 9408 Digital Deskphone	21
Avaya 1140E SIP Deskphone	4.3
Avaya 9508 Digital Deskphone	45
Avaya Analog Deskphone	N/A
Sennheiser CEHS-AV04 Adapter	1.0
Sennheiser SD Pro1 Wireless Headset	N/A
Sennheiser Headset SD Pro2	N/A
Sennheiser Headset SD Office	N/A

5. Configure Stations for Avaya 9400 and 9500 Series Digital Deskphones

5.1. Configure Avaya Aura® Communication Manager
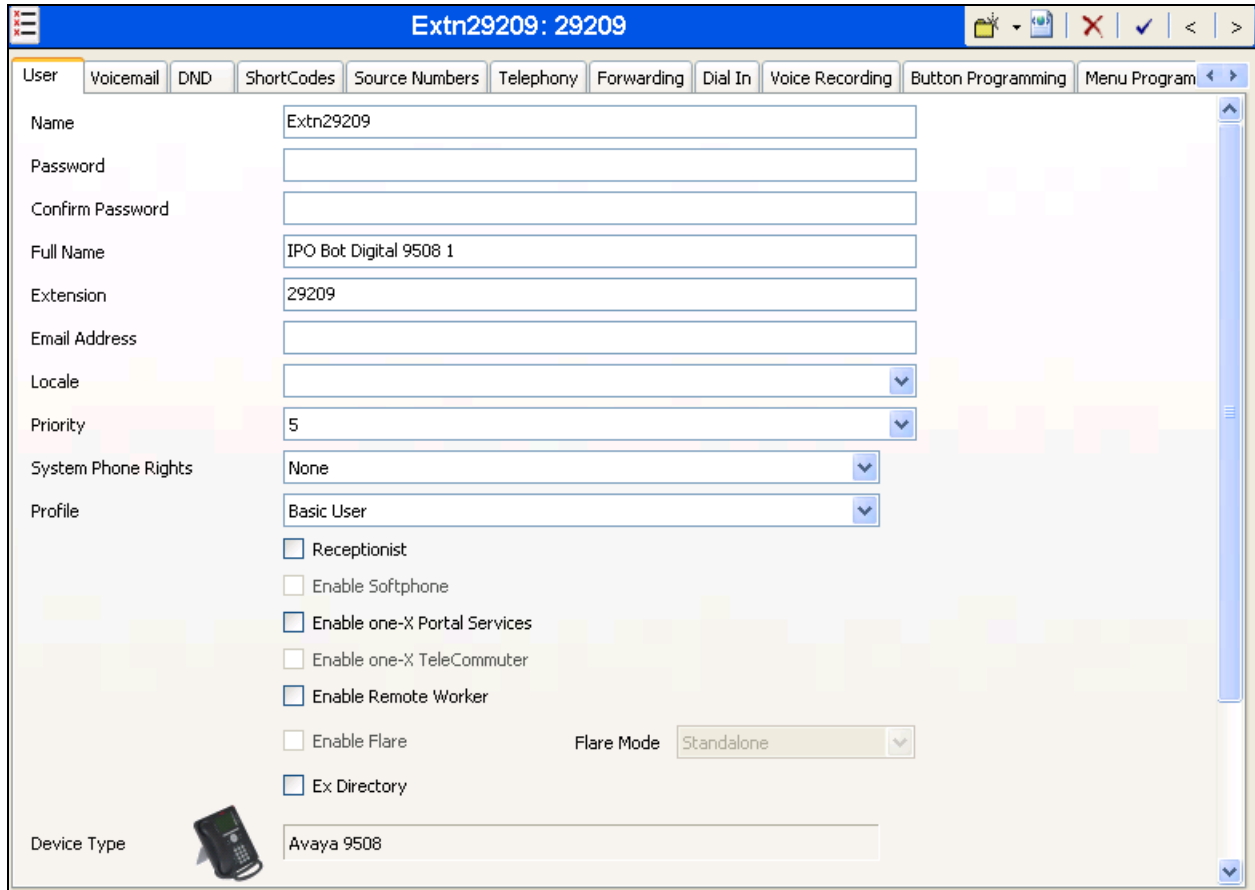
This section displays the station configuration for the Avaya 9400 Digital Deskphone. The configuration is performed via the System Access Terminal (SAT) on Avaya Aura® Communication Manager. See **Section 9 References [1-2]**

These Application Notes assume that the Avaya 9400 Series Digital Deskphones are configured and operational in Avaya Aura® Communication Manager. There are no additional settings required on Avaya Aura® Communication Manager for the connection of the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1, SD Pro2 or SD Office wireless headsets to the Avaya 9400 Series Digital Deskphone. An example of a 9400 Series Digital Station provisioned in Avaya Aura® Communication Manager is illustrated below.

```
display station 53042                                     Page   1 of   5
                                STATION

Extension: 53042                    Lock Messages? n              BCC: 0
     Type: 9408                     Security Code:                 TN: 1
     Port: 01A0503               Coverage Path 1:                 COR: 1
     Name: DCP 54042             Coverage Path 2:                 COS: 1
                                 Hunt-to Station:
STATION OPTIONS
                                       Time of Day Lock Table:
             Loss Group: 2       Personalized Ringing Pattern: 1
                                         Message Lamp Ext: 53042
           Speakerphone: 2-way       Mute Button Enabled? y
       Display Language: english


           Survivable COR: internal
  Survivable Trunk Dest? y                          IP SoftPhone? n
                                        Remote Office Phone? n
                                                   IP Video? n


                                      Customizable Labels? y
```

5.2. Configure Avaya IP Office

These Application Notes assume that the Avaya 9500 Series Digital Telephones are configured and operational in IP Office. There are no additional settings required on IP Office for the connection of the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and SD Pro1, SD Pro2 or SD Office wireless headsets to the Avaya 9500 Series Digital Deskphones.
An example of a 9500 Series Digital Station provisioned in IP Office is illustrated below. For further details please see **Section 9 References [3-5].**

6. Connect the Sennheiser Communications Equipment to Avaya 9400 or 9500 Series Digital Deskphone

During the compliance testing the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter was used to connect the SD Pro1, SD Pro2 and SD Office wireless headsets to the Avaya 9400 or 9500 Series Digital Deskphones. The Sennheiser Communications A/S CEHS-AV 04 EHS Adapter provides SD Pro1, SD Pro2, SD Office wireless headsets the ability to hear ring tones, answer and end calls, and mute/un-mute calls directly from the wireless headset including situations when the user is away from their desk.

6.1. Cable Connections

To connect the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter to the SD Pro1, SD Pro2, SD office wireless headsets and to the Avaya 9400 or 9500 Series Digital Deskphone, refer to the diagram below.
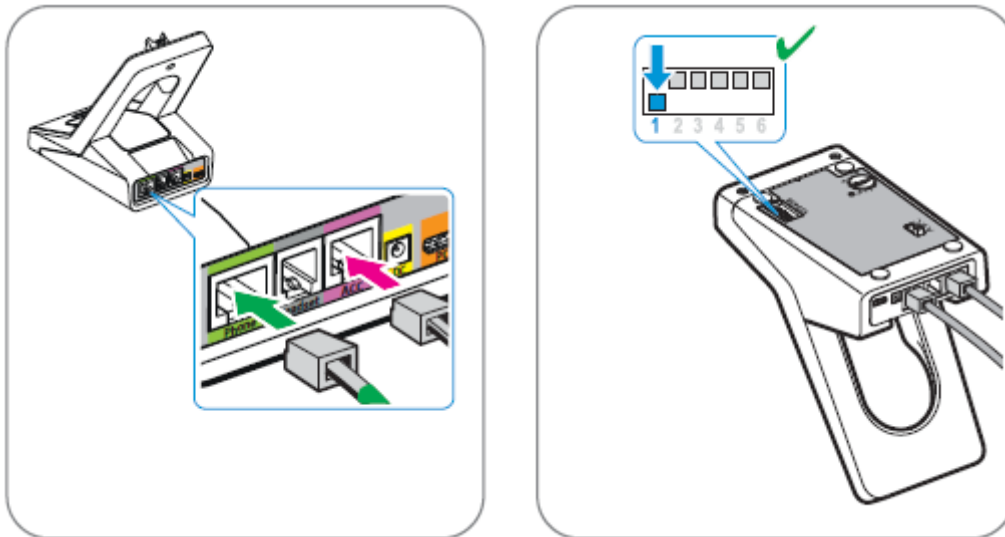
6.2. Configure Sennheiser Communications A/S SD Pro1, SD Pro2 and SD Office Wireless Headsets

To ensure correct wiring connection between the headset base and the deskphone: Set the switch on the back of the headset base to position "A".
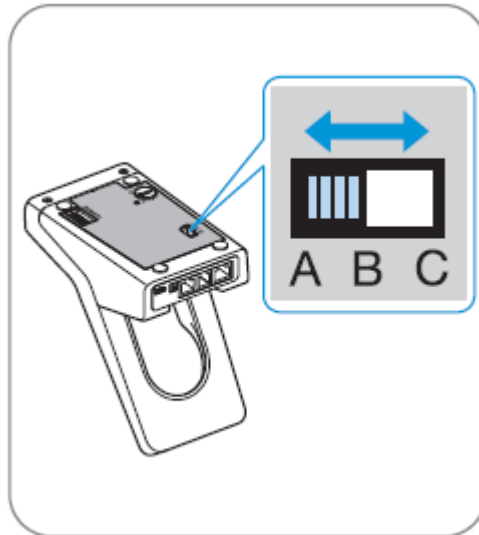
To adjust the microphone sensitivity: Make a call, adjust the Mic. Vol. Dial on the back of the headset base whilst speaking until the desired microphone level sensitivity is reached.
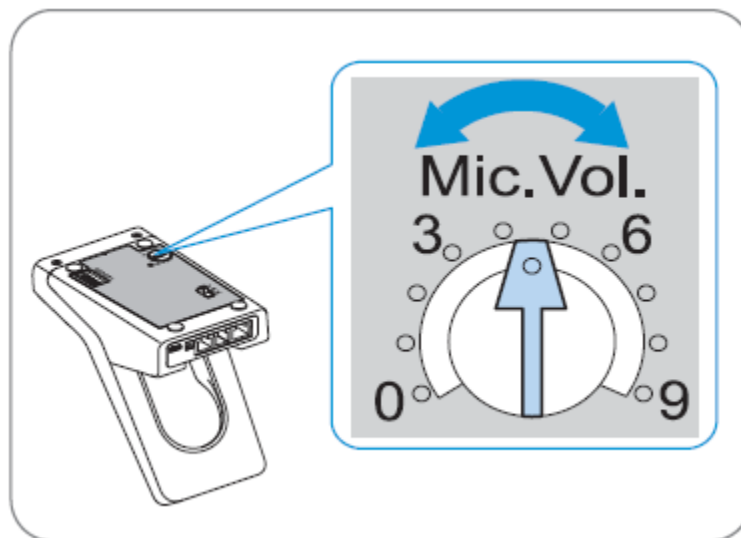

6.3. To Answer, End, Place Calls, Mute and adjust the volume on the Headsets

To Answer, End, Place calls, Mute/Un-Mute and adjust the Volume on the Sennheiser Communications A/S SD Pro1 and SD Pro2 wireless headsets follow the instructions below.

Although the instructions shown below only illustrate the use of the call control buttons on the SD Office wireless headset, the call control buttons on the SD Pro1 and the SD Pro2 wireless headsets are similar.
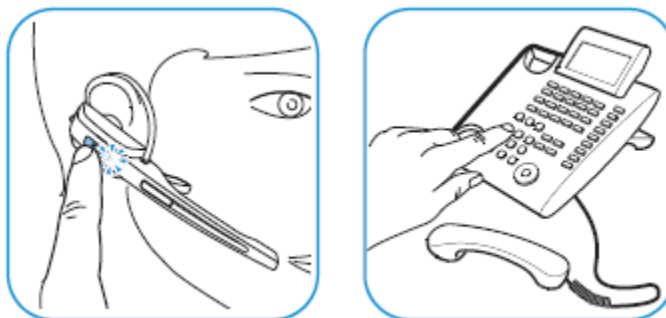
**To Answer a Call**: Press the call control button on the headset.

Alternatively, press the telephone icon button on the base of the headset.
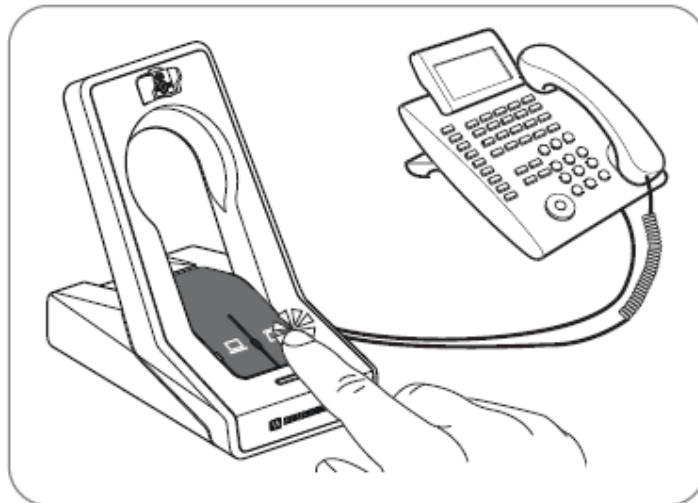
To Place a Call: Press the call control button on the headset to get dial tone and dial the number.

To Mute: Press the Audio button on the headset. When the microphone is muted, the Link LED on the base station flashes red. To Un-mute, press the Audio button again and the beep is heard in the headset to indicate that the mute is canceled.
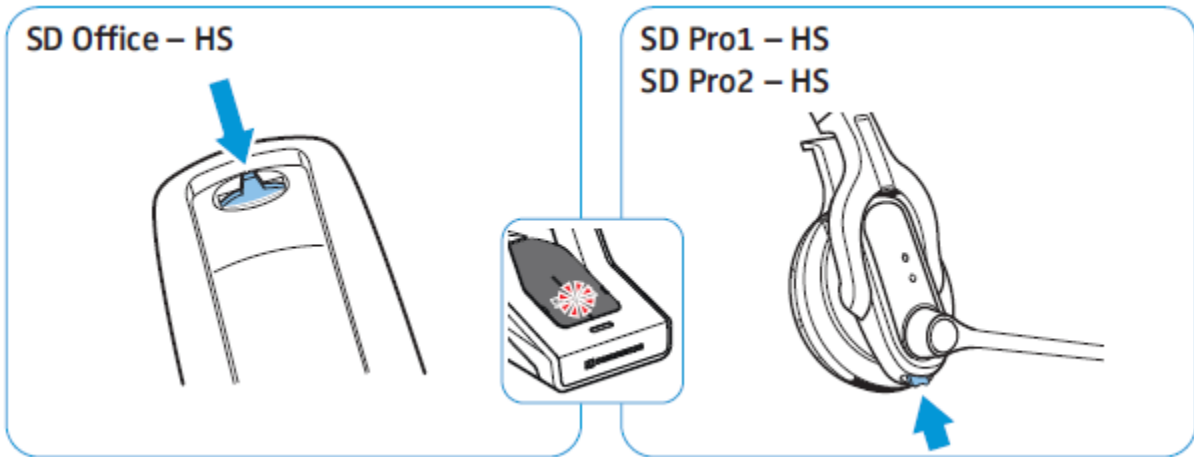
To adjust the volume: move the Audio button as shown in the screenshot. When the minimum or maximum volume is reached, a double beep will be heard in the headset.
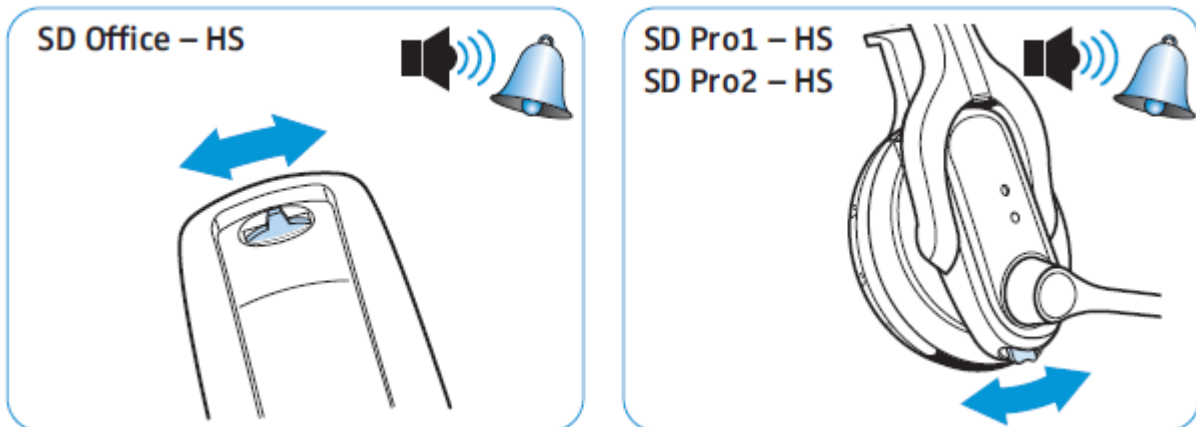
For more information on how to use the headsets refer to the Sennheiser Communications A/S SD Pro1, SD Pro2 and SD Office Quick Guides included with the headsets. For the link to on-line documentation refer to **Section 9.References [6-12]**.

7. Verification

Verify that the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and the SD Pro1, SD Pro2 or SD Office wireless headset has been connected to the Avaya 9400 or 9500 Series Digital Deskphone. Once the adapter and headset are connected to the deskphone, verify that incoming and outgoing calls can be established with two-way audio to the headset and that the headset can get dial tone and end an active call.

8. Conclusion

These Application Notes describe the configuration steps required to integrate the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and the SD Pro1, SD Pro2, SD Office wireless headsets with Avaya 9400 and 9500 Series Digital Deskphones. Testing was completed successfully with observations noted in **Section 2.2**.

9. Additional References

This section references the Avaya and Sennheiser Communications A/S documentation that are relevant to these Application Notes.

The following Avaya product documentation can be found at http://support.avaya.com.
[1] Administering Avaya Aura® Communication Manager, Release 6.3, Issue 6.0, May 2013, Document Number 03-300509.
[2] Avaya 9400 Series Digital Deskphone for Avaya Aura® Communication Manager Installation and Maintenance Guide, Rel. 1.0, August 2011, Document Number 16-603533.
[3] Avaya IP Office 9500 Series User Guide, Issue 05d, April 05, 2012.
[4] IP Office Manager 8.1, Issue 25o, April 2012, Document 15-601011
[5] IP Office 8.1 Installation, Document Number 15-601042 Issue 26f, 30 July 2012.

The following Sennheiser Communications A/S documentation can be found at
http://en-de.sennheiser.com/service-support/services/download-area/
[6] Quick guide for CEHS-AV 04
[7] SD Pro1 Quick guide.
[8] SD Pro1 User manual.
[9] SD Pro2 Quick guide.
[10] SD Pro2 User manual.
[11] SD Office Quick guide.
[12] SD Office User manual.