



**Application Notes for Configuring Sennheiser  
Communications A/S CEHS-AV 04 EHS Adapter and DW  
Pro1, DW Pro2, DW 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 DW Pro1, DW Pro2, DW 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 when the user is away from their desk. The Sennheiser Communications A/S DW Pro1, DW Pro2, DW 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.

# 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 when the user is away from their desk.
- DW Pro1 – Monaural wireless headset.
- DW Pro 2 – Binaural wireless headset.
- DW Office – Monaural wireless headset.

## 2. General Test Approach and Test Results

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 member's solution.

Avaya's 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's Deskphones or with a different generation of the same Avaya Deskphone.

Since there is no industry standard for handset interfaces, different manufacturers utilize different handset/headset interfaces with their Deskphones. Therefore, any claim made by a headset vendor that its product is compatible with Avaya Deskphones does not equate to a guarantee that the headset will provide adequate safety protection or audio quality.

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 DW Pro1, DW Pro2, DW 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 DW Pro1, DW Pro2, DW Office wireless headsets after restarting the Avaya 9400 and 9500 Series Digital Deskphones.

## 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 good.
- 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.

- 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.

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:

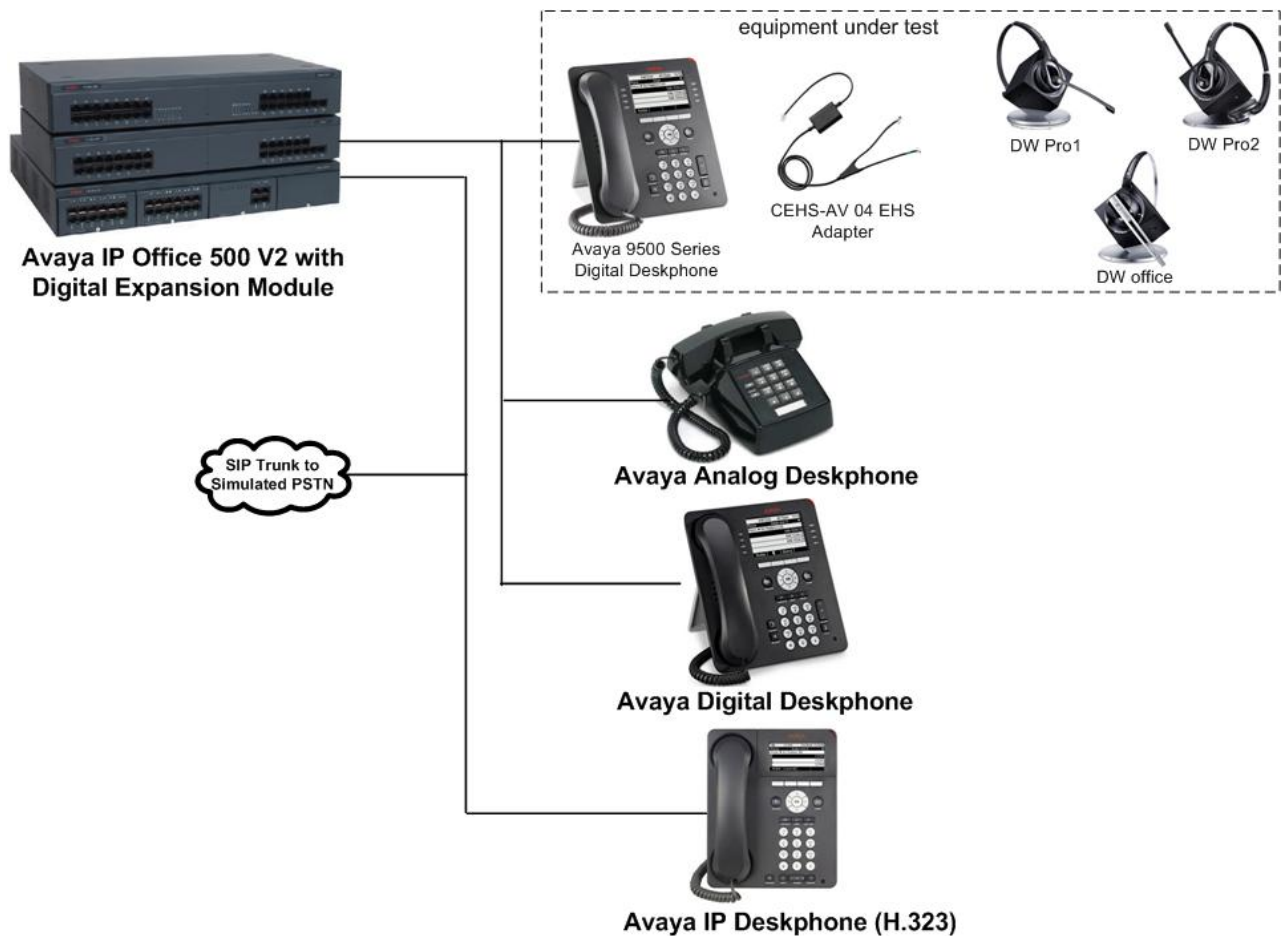
Website: [http://www.sennheisercommunications.com/comm/home\\_en.nsf/root/service](http://www.sennheisercommunications.com/comm/home_en.nsf/root/service)

### 3. Reference Configuration

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

#### 3.1. Avaya IP Office Configuration

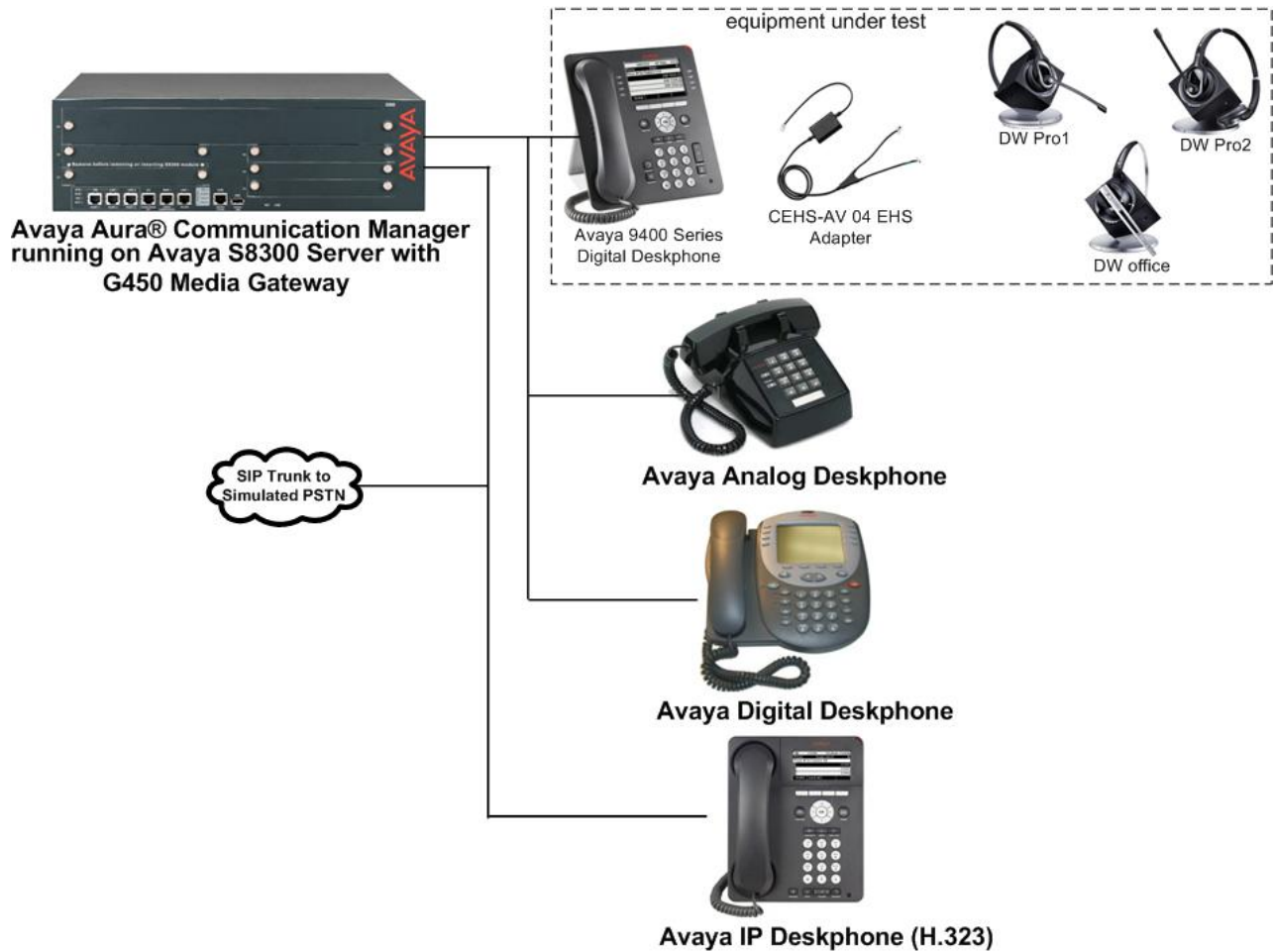
**Figure 1** illustrates the test configuration used to verify the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and DW Pro1, DW Pro2, DW Office wireless headsets with Avaya 9500 Series Digital Deskphones. For the Avaya 9500 Series Digital Deskphone the configuration consisted of an Avaya IP Office 500 V2 and an IP Office Digital expansion module.



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

### 3.2. Avaya Aura® Communication Manager Configuration

**Figure 2** illustrates the test configuration used to verify the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and DW Pro1, DW Pro2, DW Office wireless headsets with Avaya 9400 Series Digital Deskphones. For the Avaya 9400 Series Digital Deskphone the configuration consist of an Avaya S8300 Server running Avaya Aura® Communication Manager with an Avaya G450 Media Gateway.



**Figure 2: Avaya 9400 Series Digital Deskphone with Sennheiser Communications A/SCEHS-AV 04 EHS Adapter and DW Pro1, DW Pro2, DW Office Wireless Headsets.**

## 4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

### 4.1. Avaya IP Office

Equipment/Software	Release/Version
Avaya IP Office 500 V2	8.1(63)
Avaya IP Office Digital Expansion Module	10.1(63)
Avaya 9508 Series Digital Deskphone	0.44
Avaya 9600 Series IP Deskphones (H.323)	Avaya one-X® Desk phone Edition Version 3.105
Avaya Analog Deskphone.	N/A
Sennheiser Communications A/S CEHS-AV 04 EHS Adapter.	N/A
Sennheiser Communications A/S DW Pro1 Wireless Headset.	N/A
Sennheiser Communications A/S DW Pro2 Wireless Headset.	N/A
Sennheiser Communications A/S DW Office Wireless Headset.	N/A

## 4.2. Avaya Aura® Communication Manager

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running Avaya S8300 Server with a G450 Media Gateway	6.2 SP4 (02.0.823.0-20199)
Avaya 9408 Series Digital Deskphone	2.0
Avaya 9600 Series IP Deskphones (H.323)	Avaya one-X® Desk phone Edition Version 3.105
Avaya Analog Deskphone.	N/A
Avaya 2420 Digital Deskphone	6.0
Sennheiser Communications A/S CEHS-AV 04 EHS Adapter.	N/A
Sennheiser Communications A/S DW Pro1 Wireless Headset.	N/A
Sennheiser Communications A/S DW Pro2 Wireless Headset.	N/A
Sennheiser Communications A/S DW Office Wireless Headset.	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.

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 DW Pro1, DW Pro2, DW 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 3046                                     Page 1 of 5
STATION
Extension: 3046                                         Lock Messages? n      BCC: 0
Type: 2420                                             Security Code:        TN: 1
Port: 0010501                                         Coverage Path 1: 1   COR: 1
Name: Digita, Ext 3046                                Coverage Path 2:     COS: 1
                                                       Hunt-to Station:
STATION OPTIONS
Loss Group: 2                                          Time of Day Lock Table:
Data Option: none                                     Personalized Ringing Pattern: 1
Speakerphone: 2-way                                   Message Lamp Ext: 3046
Display Language: english                             Mute Button Enabled? y
                                                       Expansion Module? n
Survivable COR: internal                               Media Complex Ext:
Survivable Trunk Dest? y                             IP SoftPhone? n
                                                       Remote Office Phone? n
                                                       IP Video? n
                                                       Customizable Labels? y
```

## 5.2. Configure 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 DW Pro1, DW Pro2, DW 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.

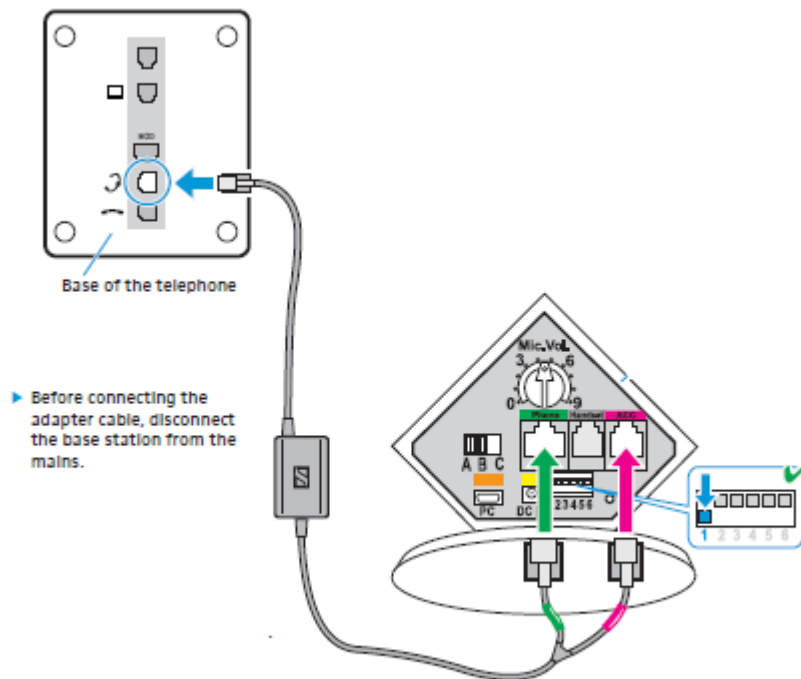
The screenshot shows the 'User' configuration window in Avaya IP Office. The 'User' tab is active, and the configuration is for a user named 'Extrn4012'. The extension is '4012', and the device type is 'Avaya 9508'. The profile is 'Basic User', and the system phone rights are 'None'. The 'User Rights' section is set to 'User data' and the working hours time profile is '<None>'. The 'Flare Mode' is set to 'Standalone'. There are several checkboxes for enabling various services, all of which are currently unchecked.

## 6. Connect the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and DW Pro1, DW Pro2, DW Office Wireless Headsets 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 DW Pro1, DW Pro2 and DW Office wireless headsets to the Avaya 9400 or 9500 Series Digital Deskphones. The Sennheiser Communications A/S CEHS-AV 04 EHS Adapter provides DW Pro1, DW Pro2, DW Office wireless headsets the ability to hear ring tones, answer and end calls, and mute/un-mute calls directly from the wireless headset when the user is away from their desk.

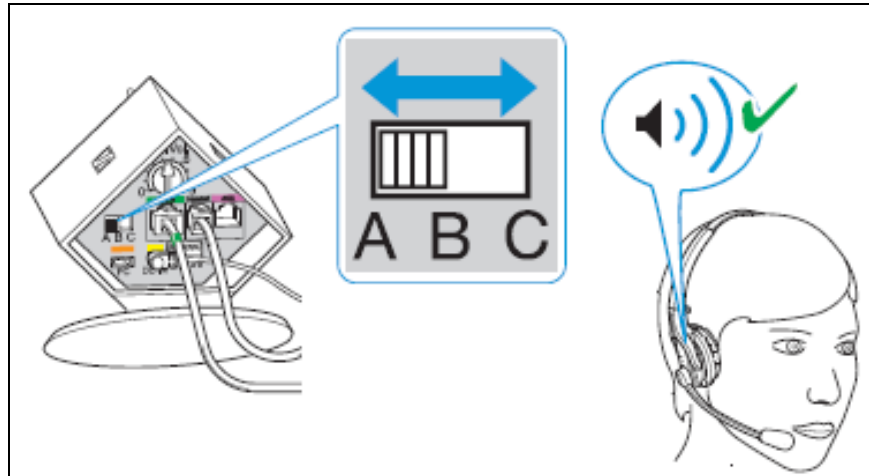
### 6.1. Cable connections

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

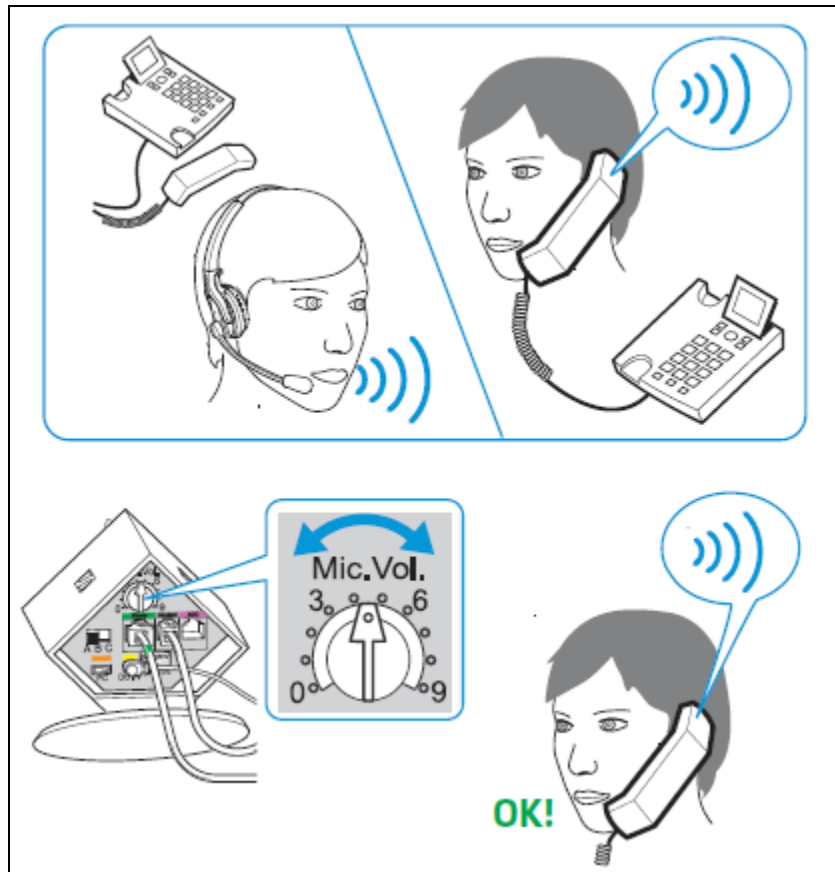


## 7. Configure Sennheiser Communications A/S DW Pro1, DW Pro2, DW Office Wireless Headsets

**To adjust the dial tone of the telephone:** Set the switch on the back of the headset base to position “A”.



**To adjust the microphone sensitivity for outgoing calls:** Make a call, adjust the **Mic. Vol.** dial on the back of the headset base while speaking until the desired microphone level sensitivity is reached.



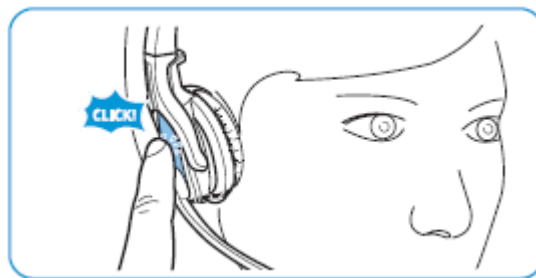
For more information on headset settings refer to the Sennheiser Communications A/S DW Pro1/Pro2, DW Office Quick Guides included with the headsets. For the link to on-line documentation refer to **Section 11**.

## 8. 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 DW Pro1 and DW Pro2 wireless headsets follow the instructions below.

Although the instructions shown below only illustrate the use of the call control buttons on the DW Pro1 and DW Pro2 wireless headsets, the call control buttons on the DW Office wireless headset are similar.

**To Answer a Call:** Press the call control button on the headset.

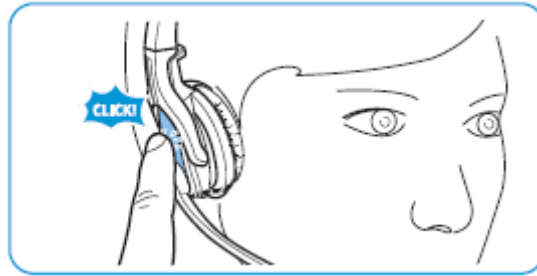


Alternatively, press the telephone icon button on the base of the headset.



**To End a Call:**

Press the call control button on the headset.

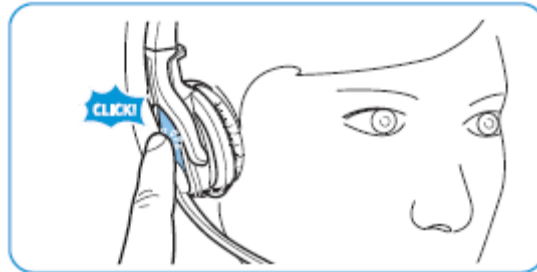


Alternatively, press the telephone icon button on the base of the headset.



**To Place a Call:**

Press the call control button on the headset to get dial tone and dial the number.



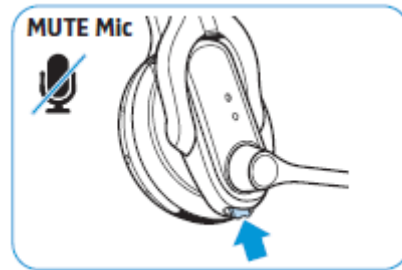
Alternatively, press the telephone icon button on the base of the headset and dial the number.





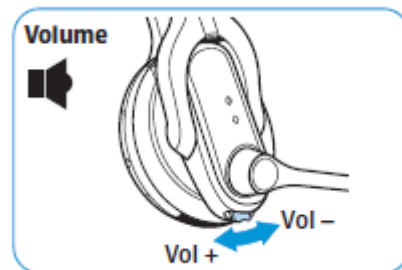
**To Mute:**

Press the MUTE Mic button on the headset.



**To adjust the volume:**

Use the volume control button on the headset



For more information on how to use the headsets refer to the Sennheiser Communications A/S DW Pro1/DW Pro2, DW Office Quick Guides included with the headsets. For the link to on-line documentation refer to **Section 11**.

## 9. Verification Steps

Verify that the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and the DW Pro1, DW Pro2 or DW 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.

## 10. Conclusion

These Application Notes describe the configuration steps required to integrate the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter and the DW Pro1, DW Pro2, DW Office wireless headsets with Avaya 9400 and 9500 Series Digital Deskphones. Testing was completed successfully with observations noted in **Section Error! Reference source not found.**

## 11. 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 6.0, Issue 6.0, June 2010, 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://www.sennheisercommunications.com/comm/home\\_en.nsf/root/service\\_download-area?Open&print=1](http://www.sennheisercommunications.com/comm/home_en.nsf/root/service_download-area?Open&print=1)

- [6] *Quick guide for CEHS-AV 04*
- [7] *DW Pro1 Quick guide.*
- [8] *DW Pro1 User manual.*
- [9] *DW Pro2 Quick guide.*
- [10] *DW Pro2 User manual.*
- [11] *DW Office Quick guide.*
- [12] *DW Office User manual.*

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