



**Avaya Solution & Interoperability Test Lab**

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**Application Notes for Configuring Sennheiser  
Communications A/S CEHS-AV 04 EHS Adapter and D 10  
Phone Headset with Avaya 9400 and 9500 Series Digital  
Deskphones - Issue 1.0**

**Abstract**

These Application Notes describe the configuration steps required to integrate Sennheiser CEHS-AV 04 Adapter and D 10 Phone Headset with Avaya 9400 and 9500 Series Digital Deskphones.

Readers should pay attention to Section 2; in particular the scope of testing as outlined in Section 2.1 as well as the observations noted in Section 2.2, to ensure that their own use cases are adequately covered by this scope and results.

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

The Sennheiser Communications A/S D 10 Phone Headset is an auxiliary audio input/output device that augments Avaya 9400 and 9500 Series Digital Deskphones. The D 10 Phone headset is a single-sided wireless DECT headset with base station connected to Avaya 9400 and 9500 Series Digital Deskphones via the CEHS-AV 04 Adapter Cable. This headset has a 2-in-1 wearing style (headband or ear hook).

## 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 Avaya 9400 and 9500 Series Digital Deskphones using the Sennheiser headset 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 D 10 Phone Headset.

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 telephone.

Since there is no industry standard for handset interfaces, different manufacturers utilize different handset/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 good.
- Placing calls to internal extensions to verify two-way audio.
- Placing calls to the PSTN to verify two-way audio.
- Hearing ringing tone for incoming and ring back for outgoing calls.
- Answering and ending calls using the call control button on the Avaya phone.
- Using the volume control buttons on the Avaya phone to adjust the audio volume.
- Using the mute control button on the Avaya phone to mute and un-mute the audio.
- Using the hold control button on the Avaya phone to hold and un-hold the call.
- Switching between the D 10 Phone Headset, the phone handset and speaker while in conversation.

For the serviceability testing, this include restarting Avaya 9400 and 9500 Series Digital Deskphone, reconnecting the base station to the headset port of the phone, cycle power the base station and moving far away from the base station where connectivity is lost.

## 2.2. Test Results

An observation was that the mute button light on the phone and the mute indicator on the D10 Phone base station (flashing red LED) are independent of each other. The Avaya EHS signaling does not communicate mute functionality. All other test cases were completed successfully.

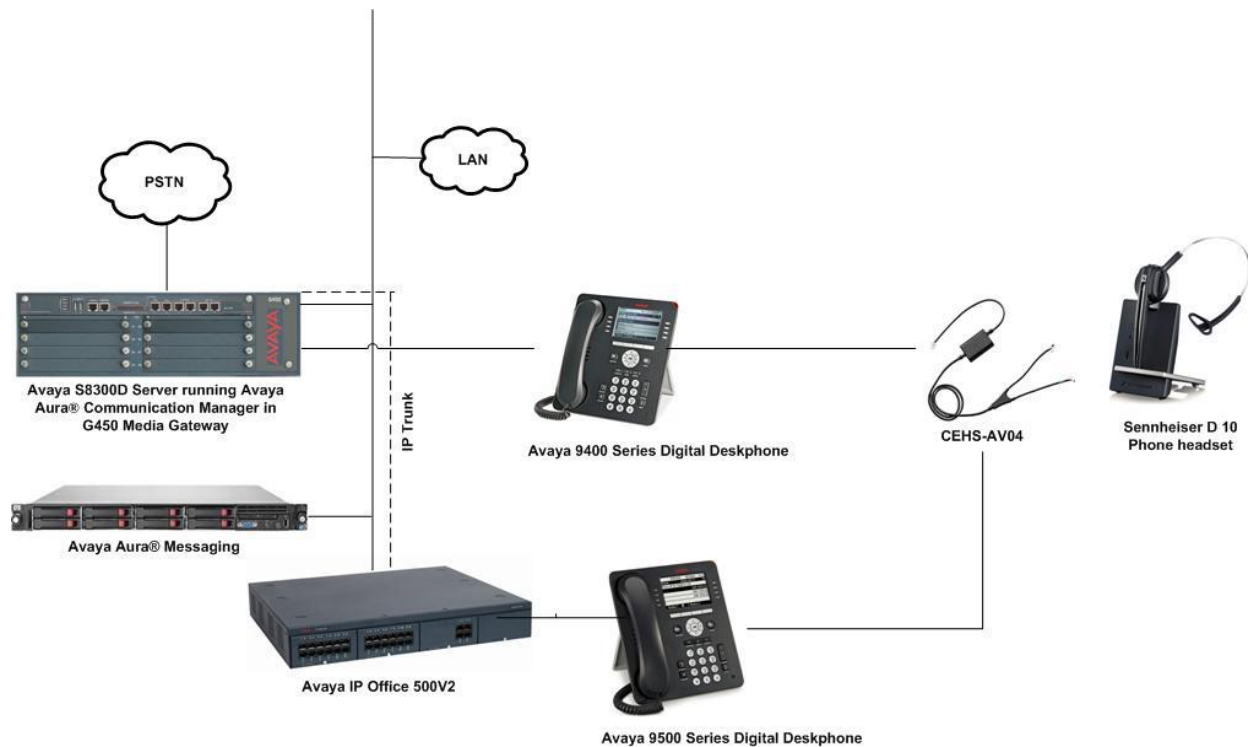
## 2.3. Support

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/>
- Phone: +1-866-697-8757

### 3. Reference Configuration

**Figure 1** illustrates the test configuration used to verify the Sennheiser CEHS-AV 04 Adapter and D 10 Phone Headset with Avaya 9400 and 9500 Series Digital Deskphones. The configuration consists of an Avaya S8300D Server running Avaya Aura® Communication Manager with an Avaya G450 Media Gateway providing connectivity to the PSTN via an ISDN-PRI trunk and Avaya Aura® Messaging as the voicemail system. Avaya 9400 Series Digital Deskphone connects to the MM712AP DCP Media Module. Avaya IP Office 500V2 is also configured with Avaya 9500 Series Digital Deskphones connected. An IP Trunk is setup between Avaya Aura® Communication Manager and Avaya IP Office 500V2 to allow outbound calls to PSTN from IP Office users.



**Figure 1: Avaya 9400 and 9500 Series Digital Deskphones with Sennheiser D 10 Phone Headset**

## 4. Equipment and Software Validated

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

| <b>Equipment/Software</b>          | <b>Release/Version</b>                    |
|------------------------------------|---|
| Avaya Aura® Communication Manager  | 6.3.7.0<br>(Build R016x.03.0.124.0-21754) |
| Avaya IP Office 500 V2             | 9.0.4.0.965                               |
| G450 Media Gateway<br>MM 712AP     | 36.9.0<br>HW4 FW15                        |
| Avaya Aura® Messaging              | 6.3.124.321-1.251259                      |
| Avaya 9404 Digital Deskphone       | 2.0 SP3 (R12)                             |
| Avaya 9408 Digital Deskphone       | 2.0 SP3 (R12)                             |
| Avaya 9508 Digital Deskphone       | R55                                       |
| Sennheiser D10 Phone Headsets      | N/A                                       |
| Sennheiser CEHS-AV04 Adapter Cable | 1.0                                       |

## **5. Configure Avaya Aura® Communication Manager**

It is assumed that a fully functioning Communication Manager and Avaya IP Office are in place with the necessary licensing. For further information on the configuration of Communication Manager and IP Office, please see **Section 9** of these Application Notes.

### **5.1. Configure a Station for Avaya 9400 and 9500 Digital Deskphones**

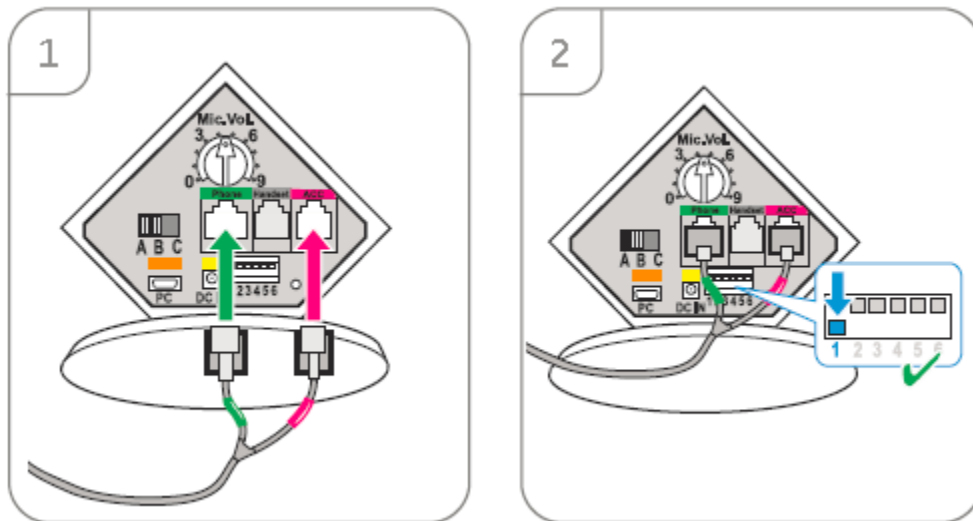
These Application Notes assume that the Avaya 9400 and 9500 Series Digital Deskphones are configured and operational in Avaya Aura® Communication Manager and Avaya IP Office. There are no additional settings required for the connection of the Sennheiser CEHS-AV 04 Adapter and D10 Phone headsets to the Avaya 9400 and 9500 Series Digital Deskphones. For further information on how to configure these Avaya Digital Deskphones refer to **Section 9** of these Application Notes.

## 6. Connect the Sennheiser Equipment to Avaya 9400 and 9500 Series Digital Deskphone

During the compliance testing the Sennheiser Communications A/S CEHS-AV 04 EHS Adapter was used to connect the D 10 Phone headset to Avaya 9400 or 9500 Series Digital Deskphone. The Sennheiser Communications A/S CEHS-AV 04 EHS Adapter provides D 10 Phone wireless headsets with the functionality 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 D 10 Phone wireless headsets and to Avaya 9400 or 9500 Series Digital Deskphone, refer to the diagram below.



## 7. Verification Steps

Verify that the Sennheiser headset has been connected to Avaya 9400 or 9500 Series Digital Deskphone. Once the headset is connected to the phone, verify that incoming and outgoing calls are 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 Sennheiser Communications A/S CEHS-AV 04 EHS Adapter to the D 10 Phone the with Avaya 9400 and 9500 Series Digital Deskphones. All test cases were completed successfully with observations in **Section 2.2**.

## 9. Additional References

This section references the Avaya and Sennheiser 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 10.0, Jun 2014, Document Number 03-300509.
- [2] *Installing and maintaining Avaya 9400 Series Digital Deskphone – Connected to the Integral Enterprise*, Issue 1, Mar 2011, Document Number 16-603573.
- [3] *IP Office Documentation Library*, Release 9.0, Issue 1, Sep 2013, Document Number 15-604278.

The following Sennheiser Communications A/S documentation can be found at <http://en-de.sennheiser.com/>.

- [4] *D 10 Phone Quick Guide*.
- [5] *D 10 Series Wireless DECT headset system*.



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