



**Application Notes for Configuring Sennheiser
Communications A/S CEHS-AV 03 EHS Adapter and D 10
Phone Headset with Avaya 96x0 Series IP Deskphones
(H.323 and SIP) - Issue 1.1**

Abstract

These Application Notes describe the configuration steps required to integrate Sennheiser CEHS-AV 03 Adapter and D 10 Phone Headset with Avaya 96x0 Series IP 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 96x0 Series IP Deskphones. The D 10 Phone headset is a single-sided wireless DECT headset with base station connected to Avaya 96x0 Series IP Deskphones via the CEHS-AV 03 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 96x0 Series IP 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 and headset to adjust the audio volume.
- Using the mute control button on the Avaya phone and headset 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 96x0 Series IP Deskphones, 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 icon on the phone display and the mute indicator on the D10 Phone base station (flashing red LED) are independent of each other since 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 03 Adapter and D 10 Phone Headset with Avaya 96x0 Series IP 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, Avaya Aura® Messaging as the voicemail system, Avaya Aura® Session Manager providing the SIP registration and proxy as well as the Avaya Aura® System Manager for management.



Figure 1: Avaya 96x0 Series IP Deskphones with Sennheiser D 10 Phone Headset

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager	6.3.7.0 (Build R016x.03.0.124.0-21754)
Avaya Aura® System Manager	6.3 SP9 (6.3.9.1.2538)
Avaya Aura® Session Manager	6.3 SP9 (6.3.9.0.639011)
Avaya Aura® Messaging	6.3.124.321-1.251259
Avaya 9640G IP Deskphone (H.323)	3.220A
Avaya 9640G IP Deskphone (SIP)	2.6.12.1
Sennheiser D10 Phone Headsets	N/A
Sennheiser CEHS-AV 03 Adapter Cable	1.0

5. Configure Avaya Aura® Communication Manager

This section covers the station configuration of Avaya 96x0 Series IP Deskphones for both H.323 and SIP.

5.1. Configure a Station for Avaya 96x0 IP Deskphone (H.323)

The configuration for H.323 is performed entirely via the System Access Terminal (SAT) on Communication Manager.

Use the **add station** command to create a station for the 96x0 IP telephone. Set the **Type** field to the station type to be emulated. In this example, *9640* was used. Set the **Port** field to *IP* and configure a **Security Code** as that password to be used by the Avaya telephone to log in.

Note: To enable Auto Answer on the IP telephone set the **Auto Answer** field on **Page 2** (not shown) to the appropriate value, such as *all*.

```
add station 10007                                     Page 1 of 5
                                                    STATION
Extension: 10007                                     Lock Messages? n          BCC: 0
  Type: 9640                                       Security Code:        TN: 1
  Port: IP                                         Coverage Path 1: 99      COR: 1
  Name: 9600 IP Telephone                           Coverage Path 2:         COS: 1
                                                    Hunt-to Station:        Tests? y
STATION OPTIONS
  Location:                                         Time of Day Lock Table:
  Loss Group: 19                                   Personalized Ringing Pattern: 1
                                                    Message Lamp Ext: 10007
  Speakerphone: 2-way                               Mute Button Enabled? y
  Display Language: english                         Button Modules: 0
Survivable GK Node Name:
  Survivable COR: internal                           Media Complex Ext:
  Survivable Trunk Dest? y                           IP SoftPhone? n
                                                    IP Video? n
Short/Prefixed Registration Allowed: default
                                                    Customizable Labels? y
```

5.2. Configure a Station for Avaya 96x0 IP Deskphone (SIP)

The configuration for SIP station is performed partially via the System Access Terminal (SAT) on Communication Manager. The rest of the configurations are performed via the System Manager. There is an option to generate SIP station entirely without using the SAT when adding a new SIP user using System Manager. The details will not be covered in this document. Please refer to the Application Notes in [3] for details. Below shows the SIP Station with **Type 9640SIP** configured.

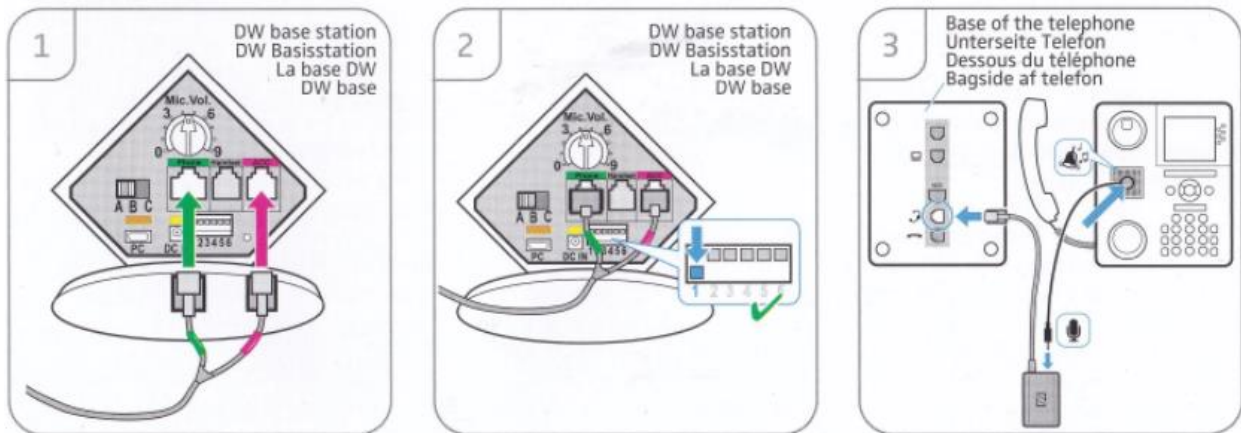
```
display station 10050                                     Page 1 of 6
                                                         STATION
Extension: 10049                                         Lock Messages? n          BCC: 0
  Type: 9640SIP                                         Security Code:           TN: 1
  Port: S00139                                           Coverage Path 1:        COR: 1
  Name: AVAYA, SIP4                                       Coverage Path 2:        COS: 1
                                                         Hunt-to Station:
STATION OPTIONS
  Location:                                               Time of Day Lock Table:
  Loss Group: 19                                         Message Lamp Ext: 10050
  Display Language: english                               Button Modules: 0
  Survivable COR: internal
  Survivable Trunk Dest? y                               IP SoftPhone? n
                                                         IP Video? n
```

6. Connect the Sennheiser Equipment to Avaya 96x0 Series IP Deskphones

During the compliance testing, the Sennheiser Communications A/S CEHS-AV 03 EHS Adapter was used to connect the D 10 Phone headsets to Avaya 96x0 Series IP Deskphones. The Sennheiser Communications A/S CEHS-AV 03 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 03 EHS Adapter to the D 10 Phone wireless headsets and to Avaya 96x0 Series IP Deskphones, refer to the diagram below. Avaya 96x0 Series Deskphones do not provide incoming call notifications to headset. However, with D10 phone headset, ring tone can be heard in the headset from the distance, if the ring tone detector (small pick-up Mic.) is attached to the CEHS-AV03 adapter and is placed on the speaker of the phone as in the 3rd steps below. The ringtone pattern and volume of the Deskphone must be tuned so the incoming calls are detected by the ring tone detector.



7. Verification Steps

Verify that the Sennheiser headset has been connected to Avaya 96x0 Series IP Deskphones. 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 03 EHS Adapter to the D 10 Phone the with Avaya 96x0 Series IP 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] *Avaya one-X® Deskphone H.323 for 9600 Series IP Deskphones Administrator Guide*, Release 3.1.5, Issue 9, Aug 2012, Document Number 16-300698.
- [3] *Application Notes for Configuring Avaya 9600 Series IP Deskphones running Avaya one-X® SIP firmware with Avaya Aura® Session Manager*.
- [4] *Administering Avaya Aura® Session Manager*, Release 6.3, Issue 5, Jun 2014.

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

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

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