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Avaya Solution & Interoperability Test Lab

Application Notes for Configuring JPL Headsets from JPL Limited with Avaya 96x1 Series IP Telephones using a HIS Cord – Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning JPL headsets using a HIS cord from JPL Limited with Avaya 96x1 Series IP Telephones using both H.323 and SIP protocols to ensure full interoperability.

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.

PG; Reviewed:
SPOC 8/10/2015

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1 of 16
JPLHIS_96x1

1. Introduction

These Application Notes describe the configuration steps required to integrate JPL Headsets using a HIS cord from JPL Limited with Avaya 96x1 Series IP Telephones using both H.323 and SIP protocols. JPL Limited offers a variety of headsets (listed in **Section 4**) that can be used with the Avaya 96x1 Series Telephone using the HIS cord to connect the headset to the telephone RJ9 headset jack. The headset then provides two-way audio. This solution does not provide call control features directly from the headset, such as answering or terminating a call from the headset. The headsets do not offer volume control or mute functionality.

JPL Limited design and develop professional headsets for the Corporate, Financial, Health, Government, Educational, Industrial, Hotel & Hospitality and Contact Centre market sectors.

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 96x1 Series IP Telephones with each JPL headset attached using the HIS cord and verifying two-way audio. The call types included calls to voicemail, to local extensions, and to the PSTN. The Avaya telephone user should be clearly heard and observed without any distortions or audio issues. The serviceability testing focused on verifying the usability of the JPL headset after restarting the Avaya 96x1 Series IP Telephones and re-connecting the JPL 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 telephones 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.

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2 of 16
JPLHIS_96x1

2.1. Interoperability Compliance Testing

The interoperability compliance testing was carried out on the latest SIP and H323 firmware for Avaya 96x1 Series IP Telephones. The following JPL headsets were used for compliance testing.
- JPL 401
- JPL 402
- JPL 501
- JPL 502
- JPL 611
- JPL 612
- JPL TT3

Note: The TT3 headset comes in three parts, the mic boom, a monaural headband and a binaural headband. This allows the user to swap out the mic boom between headbands.

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 from/to internal extensions to verify two-way audio.
- Placing calls from/to the PSTN to verify two-way audio.
- Hearing ring back tone for outgoing calls.
- Toggling between handset, speakerphone, and headset.
- Using the volume control buttons on the Avaya Telephone to adjust the audio volume.

2.2. Test Results

All compliance test cases passed successfully. The following observations were noted.
- No specific configuration changes were made on the Avaya telephone. The default headset settings that were already in place were used during compliance testing.
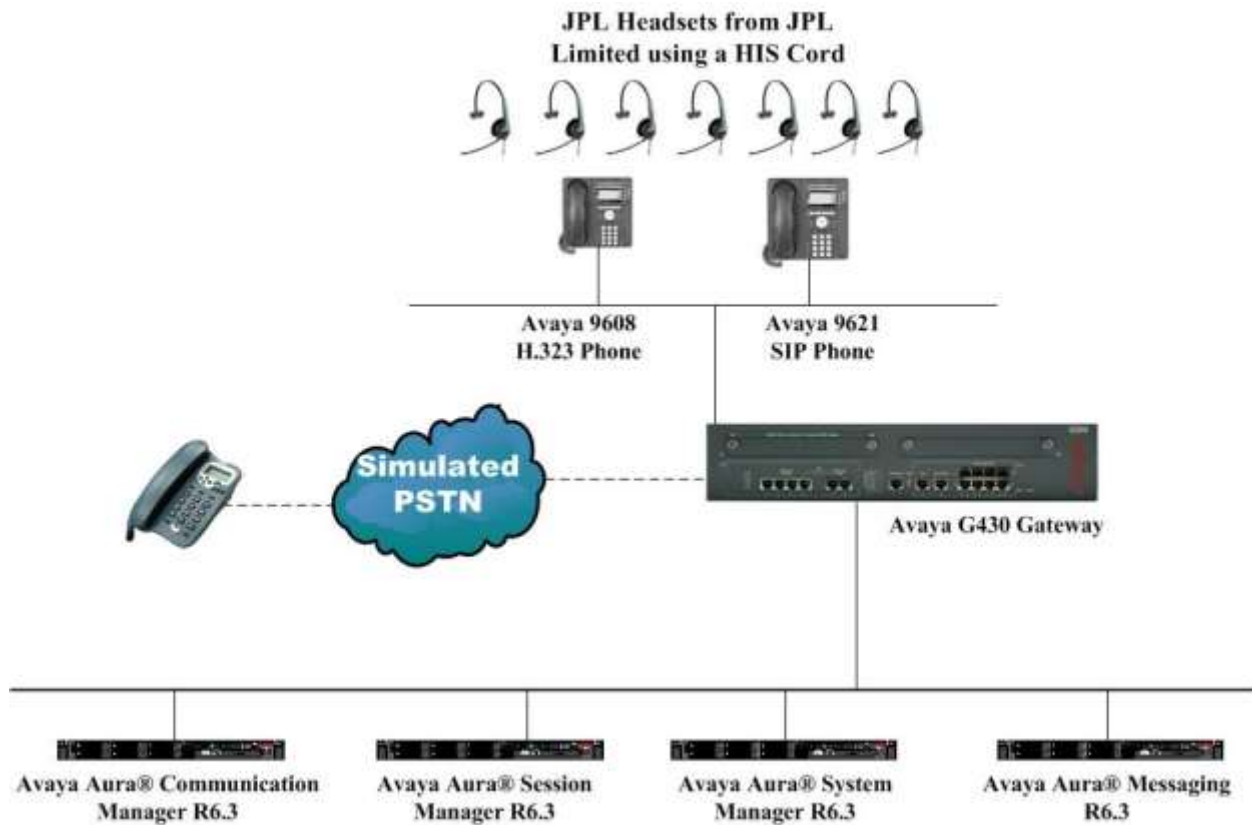
2.3. Support

Support from Avaya is available by visiting the website http://support.avaya.com. Support from JPL Limited is available at:

> JPL Limited
> Unit 1, Church Close Business Park
> Church Close, Todber
> Sturminster Newton
> Dorset DT10 1JH
> England
> Phone: +44(0)1258 820100
> E-Mail: sales@jpl.uk.com

3. Reference Configuration

Figure 1 shows the network topology during compliance testing. The JPL headsets are connected to the RJ9 headset port on the Avaya Telephones using a HIS modular plug supplied by JPL Limited.

Figure 1: Network Solution of the JPL Headsets connecting to Avaya 96x1 Series IP Telephones using a HIS cord

4. Equipment and Software Validated

The following equipment and software was used for the compliance test.

Equipment/Software	Release/Version
Avaya Aura® System Manager running on a virtual server	6.3.11 (SP11) Build No. – 6.3.0.8.5682-6.3.8.3204 Software Update Revision No: 6.3.7.7.2275
Avaya Aura® Communication Manager running on a virtual server	R6.3 SP9 R016x.03.0.124.0
Avaya Aura® Session Manager running on a virtual server	R 6.3 SP11 Build No. – 6.3.11.0.631103
Avaya Aura® Messaging running on a virtual server	R 6.3
Avaya 9608 IP Telephone running Avaya one-X® Deskphone H323	Version 6.6.028
Avaya 9621 IP Telephone running Avaya one-X® Deskphone SIP	Version 6.5.0.17
JPL Headset • JPL 401 • JPL 402 • JPL 501 • JPL 502 • JPL 611 • JPL 612 • JPL TT3	N/A
JPL Limited HIS Cord	N/A

5. Configure Avaya Communication Manager

It is assumed that a fully functioning Communication Manager is in place with the necessary licensing. For further information on the configuration of Communication Manager please see **Section 10** of these Application Notes. This section covers the station configuration for the Avaya 96x1 IP Telephones. The configuration is performed via the System Access Terminal (SAT) on Communication Manager or via Avaya Aura® System Manager for SIP stations.

5.1. Configure Avaya 96x1 Series H323 Telephone

Note: To enable Auto-Answer on the IP telephone set the **Auto Answer** field on **Page 2** to the appropriate value, such as **all**.

```
display station 2016                                          Page   2 of   5
                                   STATION
FEATURE OPTIONS
              LWC Reception: spe          Auto Select Any Idle Appearance? n
            LWC Activation? y                     Coverage Msg Retrieval? y
    LWC Log External Calls? n                            Auto Answer: all
               CDR Privacy? n                          Data Restriction? n
      Redirect Notification? y           Idle Appearance Preference? n
   Per Button Ring Control? n            Bridged Idle Line Preference? n
      Bridged Call Alerting? n                 Restrict Last Appearance? y
     Active Station Ringing: single

                                                    EMU Login Allowed? n
          H.320 Conversion? n      Per Station CPN - Send Calling Number?
         Service Link Mode: as-needed               EC500 State: enabled
           Multimedia Mode: enhanced         Audible Message Waiting? n
    MWI Served User Type:                  Display Client Redirection? n
               AUDIX Name:               Select Last Used Appearance? n
                                             Coverage After Forwarding? s
                                               Multimedia Early Answer? n
                                         Direct IP-IP Audio Connections? y
    Emergency Location Ext: 2016      Always Use? n IP Audio Hairpinning? n
```

5.2. Configure Avaya 96x1 Series SIP Telephone

The SIP station was configured automatically through System Manager. Use the **display station** command to view the station for the 9621 IP deskphone.

Note: To enable Auto Answer on the IP deskphone set the **Auto Answer** field on **Page 2** to the appropriate value, such as **all**.

Note: On the SIP deskphone, the Headset Profile was set to '1'. To set the Headset Profile, press the **Menu** button on the phone and then navigate to **Options & Settings →Options & Settings → Advanced Options… → Headset Profile…** Select the **Profile1** option.

```
display station 1000                                          Page   2 of   6
                                STATION
FEATURE OPTIONS
          LWC Reception: spe
          LWC Activation? y                          Coverage Msg Retrieval? y
                                                            Auto Answer: all
             CDR Privacy? n                               Data Restriction? n
                                                  Idle Appearance Preference? n
 Per Button Ring Control? n              Bridged Idle Line Preference? n
   Bridged Call Alerting? n                    Restrict Last Appearance? y
 Active Station Ringing: single

        H.320 Conversion? n         Per Station CPN - Send Calling Number?
                                                      EC500 State: enabled

    MWI Served User Type:
            AUDIX Name:
                                               Coverage After Forwarding? s

                                              Direct IP-IP Audio Connections? y
  Emergency Location Ext: 1000      Always Use? n IP Audio Hairpinning? n
```

6. Configuring Avaya Telephones

The headset can be used with the Avaya 96x1 Series IP Telephones settings all left as default. Calls can be made and answered using the headset button on the telephone set. Some settings can be changed to allow the headset be the default answering device for all incoming calls if required.

6.1. Setting the audio path on an Avaya 96x1 IP Telephone

Each Avaya 96x1 IP telephone can be set to go off-hook on the speaker or the headset when an on-hook call is made .If auto-answer is set up, incoming calls are also answered on the default audio path designated here. This setting also determines whether the voice dialling feature gets its input from the speaker or the headset. Procedure is as follows.
1. Press Avaya Menu.
2. Select Options & Settings.
3. Press Select or OK.
4. Select Call Settings.
5. Press Select or OK.
6. Select Audio Path.
7. Press Change or OK or use the Right/Left arrows to change the speaker or headset setting. Press Save.

6.2. Configure 46xxsettings.txt File

For H.323 Deskphone Only
In the 46xxsettings.txt file, the HEADSETBIDIR parameter needs to be set to '1' so that switch hook and alerting are enabled for the H.323 deskphone only. This allows incoming call alert to be heard through the headset. Alternatively, the switch hook and alerting options can be enabled through the 96x1 phone menu. Press the **Menu** button on the phone and then navigate to **Options & Settings →Call Settings → Headset Signaling**. Select the **Switchhook & Alerting** option. Below is an example for setting this parameter.

```
############  HEADSET SETTINGS (H.323 ONLY)  ###############
##
## HEADSETBIDIR specifies whether bidirectional signaling
##  on the headset interface will be enabled or disabled.
##  Value  Operation
##   0    Disabled (default)
##   1    Switchhook and alerting signaling are both enabled
##   2    Only switchhook signaling is enabled
##  This parameter is supported by:
##      96x1 H.323 R6.3 and later (values 0-2)
##      96x1 H.323 R6.2.1 and later (values 0-1)
##  Note that 96x1 H.323 R6.2 only supported signaling for alerting.
SET HEADSETBIDIR 1
```

For H.323 and SIP Deskphones

In the 46xxsettings.txt file, the HEADSYS parameter needs to be set appropriately depending on whether the headset button should be deactivated automatically if the far-end drops the call. For stations configured with auto-answer, set this parameter to '1' so that the headset button is not deactivated when the far-end drops the call. This allows the subsequent call to be answered automatically through the headset. Below is an example for setting this parameter. In this example, the parameter is set to '0', which would cause the headset button to be deactivated when the far-end drops the call first.

```
#################### CALL CENTER SETTINGS  #################
##
## HEADSYS specifies whether the telephone will go on-hook if the headset is active
##  when a Disconnect message is received.
## Value  Operation
##   0   The telephone will go on-hook if a Disconnect message is received when the headset is active
##   1   Disconnect messages are ignored when the headset is active
## Note: a value of 2 has the same effect as a value of 0, and
##       a value of 3 has the same effect as a value of 1.
## This parameter is supported by:
##     96x1 H.323 R6.2.1 and later (the default value is 0 unless the value
##        of CALLCTRSTAT is set to 1, in which case the default value is 1)
##     96x1 H.323 R6.1 and R6.2 ignore this parameter, and will ignore Disconnect messages
##        if the user is logged in as a call center agent. If the user is not logged in
##        as a call center agent, the telephone will go on-hook if a Disconnect message
##        is received when the headset is active.
##     96x1 H.323 releases prior to R6.1 (the default value is 1)
##     96x1 SIP  R6.4 and later (the default value is 0)
##     96x1 SIP  R6.0 and later up to R6.4 (not included) (the default value is 1)
##     96x0 H.323 R1.2 and later (the default value is 1)
##     96x0 SIP  R1.0 and later (the default value is 1)
##     16xx H.323 R1.3 and later (the default value is 1)
SET HEADSYS 0
```

7. Configure JPL Headsets to work with Avaya Telephones

There are several RJ9 cords available to connect the headset to the Avaya telephone depending on the telephone in question. For the Avaya 96x1 series telephones a HIS cord is used.

7.1. Connecting to Avaya 96x1 Series Telephones

In connecting the JPL headset to the Avaya 96x1 series telephone the suggested cord to use is the HIS cord. Connect each headset to the HIS cord, and then connect the HIS cord directly to the headset port of the Avaya 96x1 Series IP Telephone.

8. Verification Steps

The following steps can be taken to ensure that connections between the JPL headsets and Avaya telephones are achieved.
1. When the headset is connected to the telephone set press the headset key on the telephone set. The headset LED should light up and dial tone should be heard.
2. To answer a call press the headset key when the telephone is ringing again the headset LED should be lit.
3. If Auto Answer has been set as per **Section 5**, then the call should be automatically answered when the telephone extension is called.

9. Conclusion

These Application Notes outline the steps necessary to configure the JPL headsets from JPL Limited using a HIS cord to allow full interoperability with Avaya 96x1 Series IP Telephones with both H323 and SIP firmware. Please refer to **Section 2.2** of these Application Notes for test results and observations.

10. Additional References

This section references documentation relevant to these Application Notes. Product documentation for Avaya products may be found at http://support.avaya.com

[1] *Administering Avaya Aura® Communication Manager,* Document Number 03-300509.
[2] *Avaya Aura® Communication Manager Feature Description and Implementation,* Document Number 555-245-205.
[3] *Administering Avaya Aura® Session Manager*, Doc ID 03-603324
[4] *Avaya one-X® Deskphone Edition for 96x1 Series IP Telephones Installation and Maintenance Guide*, Release 3.1, Issue 7, Document Number 16-300694.

JPL headset product documentation can be found at http://www.jpltele.com

Appendix

Avaya 9608 H323 IP Deskphone

```
display station 2016                                            Page   1 of   5
                                   STATION

Extension: 2016                          Lock Messages? n                BCC: M
     Type: 9608                          Security Code: *                 TN: 1
     Port: S00102                     Coverage Path 1:                    COR: 1
     Name: CCT Agent2                 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: 2016
          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? y

                                         IP Video Softphone? y
                      Short/Prefixed Registration Allowed: default

                                        Customizable Labels? y
```

```
display station 2016                                            Page   2 of   5
                                   STATION
FEATURE OPTIONS
          LWC Reception: spe          Auto Select Any Idle Appearance? n
         LWC Activation? y                      Coverage Msg Retrieval? y
 LWC Log External Calls? n                               Auto Answer: none
           CDR Privacy? n                            Data Restriction? n
    Redirect Notification? y            Idle Appearance Preference? n
 Per Button Ring Control? n            Bridged Idle Line Preference? n
    Bridged Call Alerting? n                 Restrict Last Appearance? y
 Active Station Ringing: single

                                                   EMU Login Allowed? n
       H.320 Conversion? n      Per Station CPN - Send Calling Number?
      Service Link Mode: as-needed                 EC500 State: enabled
        Multimedia Mode: enhanced          Audible Message Waiting? n
  MWI Served User Type:                   Display Client Redirection? n
            AUDIX Name:                    Select Last Used Appearance? n
                                          Coverage After Forwarding? s
                                             Multimedia Early Answer? n
 Remote Softphone Emergency Calls: as-on-local Direct IP-IP Audio Connections? y
  Emergency Location Ext: 2016        Always Use? n IP Audio Hairpinning? n
```

```
display station 2016                                         Page   3 of   5
                                  STATION

             Conf/Trans on Primary Appearance? n
   Bridged Appearance Origination Restriction? n     Offline Call Logging? y
          Require Mutual Authentication if TLS? n

              Call Appearance Display Format: disp-param-default
                             IP Phone Group ID:
 Enhanced Callr-Info Display for 1-Line Phones? n

                         ENHANCED CALL FORWARDING
                                Forwarded Destination         Active
  Unconditional For Internal Calls To: 2015                      n
                 External Calls To: 2015                         n
         Busy For Internal Calls To:                             n
                 External Calls To:                              n
     No Reply For Internal Calls To: 2015                        n
                 External Calls To: 2015                         n

            SAC/CF Override: n
```

```
display station 2016                                         Page   4 of   5
                                  STATION
 SITE DATA
      Room:                                       Headset? n
      Jack:                                       Speaker? n
     Cable:                                       Mounting: d
     Floor:                                    Cord Length: 0
  Building:                                      Set Color:

 ABBREVIATED DIALING
    List1:                  List2:                   List3:




 BUTTON ASSIGNMENTS
  1: call-appr                      5:
  2: call-appr                      6:
  3: call-appr                      7:
  4:                                8:

     voice-mail
```

Avaya 9621 SIP IP Deskphone

```
display station 1000                                     Page   1 of   6
                              STATION

Extension: 1000                      Lock Messages? n            BCC: 0
     Type: 9621SIP                   Security Code: *             TN: 1
     Port: S00002                  Coverage Path 1:              COR: 1
     Name: SIP, EXT1000            Coverage Path 2:              COS: 1
                                   Hunt-to Station:
STATION OPTIONS
              Location:                   Time of Day Lock Table:
           Loss Group: 19
                                           Message Lamp Ext: 1000

      Display Language: english

        Survivable COR: internal
  Survivable Trunk Dest? y                           IP SoftPhone? y

                                            IP Video Softphone? n
                        Short/Prefixed Registration Allowed: default
```

```
display station 1000                                     Page   2 of   6
                              STATION
FEATURE OPTIONS
           LWC Reception: spe
           LWC Activation? y                    Coverage Msg Retrieval? y
                                                        Auto Answer: none
            CDR Privacy? n                            Data Restriction? n
                                             Idle Appearance Preference? n
 Per Button Ring Control? n          Bridged Idle Line Preference? n
   Bridged Call Alerting? n                    Restrict Last Appearance? y
 Active Station Ringing: single

       H.320 Conversion? n       Per Station CPN - Send Calling Number?
                                              EC500 State: enabled

   MWI Served User Type: qsig-mwi

                                        Coverage After Forwarding? s

 Remote Softphone Emergency Calls: as-on-local Direct IP-IP Audio Connections? y
  Emergency Location Ext: 1000           Always Use? n IP Audio Hairpinning? n
```

```
display station 1000                                          Page   3 of   6
                                   STATION


   Bridged Appearance Origination Restriction? n    Offline Call Logging? y



                        IP Phone Group ID:


                        ENHANCED CALL FORWARDING
                                    Forwarded Destination      Active
 Unconditional For Internal Calls To:                              n
                 External Calls To:                                n
        Busy For Internal Calls To:                                n
                 External Calls To:                                n
    No Reply For Internal Calls To:                                n
                 External Calls To:                                n

          SAC/CF Override: n
```

```
display station 1000                                          Page   4 of   6
                                   STATION
 SITE DATA
      Room:                                      Headset? n
      Jack:                                      Speaker? n
     Cable:                                      Mounting: d
     Floor:                                   Cord Length: 0
  Building:                                     Set Color:

 ABBREVIATED DIALING
     List1:                    List2:                       List3:




 BUTTON ASSIGNMENTS
 1: call-appr                          5: call-pkup
 2: call-appr                          6: ec500       Timer? n
 3: call-appr                          7: extnd-call
 4: call-park                          8:
```