Avaya Solution & Interoperability Test Lab

Application Notes for Tiger Communications Innovation 2020 v2.7.5 with Avaya Communication Manager 4.0.1 Using Analog Mode Code Integration - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Tiger Communications Innovation 2020 v2.7.5 to interoperate with Avaya Communication Manager 4.0.1. The Tiger Innovation 2020 feature set is particularly suited for hospitality applications and includes voice mail and a Property Management System (PMS) interface. During compliance testing only the voice mail was tested.

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

1. Introduction

These Application Notes describe a compliance-tested messaging solution comprised of Avaya Communication Manager 4.0.1 and the Tiger Innovation 2020 using analog mode code integration. The Tiger Innovation 2020 feature set is particularly suited for hospitality applications and includes voice mail and a Property Management System (PMS) interface. Only voice mail was tested during compliance testing. However, the use of a PMS and Tiger Innovation 2020 in combination provides an integrated Voice Mail capability by virtue of the PMS integration with Avaya Communication Manager. This allows voice mailboxes to be logically connected to occupants rather than to the physical telephony device.

The Tiger Innovation 2020 system is comprised of both hardware and software running on Microsoft Windows XP. Internally, it utilizes Intel Dialogic voice boards to support 4 - 48 analog voice ports that provide the means of connectivity to Avaya Communication Manager. Each analog port on the Tiger Innovation 2020 is connected to an analog station port administered on Avaya Communication Manager and configured as type VMI (voice mail interface). Each time a call is routed to an extension associated with a port connected to the Tiger Innovation 2020, Avaya Communication Manager sends a series of DTMF tones to the Tiger Innovation 2020 port before the call path is connected between the calling party and the Tiger Innovation 2020. These tones, known as mode codes, provide information about the call to the Tiger Innovation 2020. For the compliance test, all the extensions associated with the ports connected to the Tiger Innovation 2020 were placed in a hunt group. This hunt group number was used as the general access number for Tiger Innovation 2020. All calls to the Tiger Innovation 2020 messaging access number were answered with an internal voice mail greeting that allowed users to retrieve voice mail. All calls that were not answered by the intended destination were covered to the Tiger Innovation 2020. The Tiger Innovation 2020 answered these calls with a personal greeting recorded by the user and allowed the caller to leave a voice mail message. Upon successful recording of the message, the Tiger Innovation 2020 used the Leave Word Calling (LWC) Send A Message feature access code to turn on the Message Waiting Indicator (MWI) of the intended destination. When the recipient retrieved the message, the Tiger Innovation 2020 used the LWC Cancel A Message feature access code to turn off the MWI.

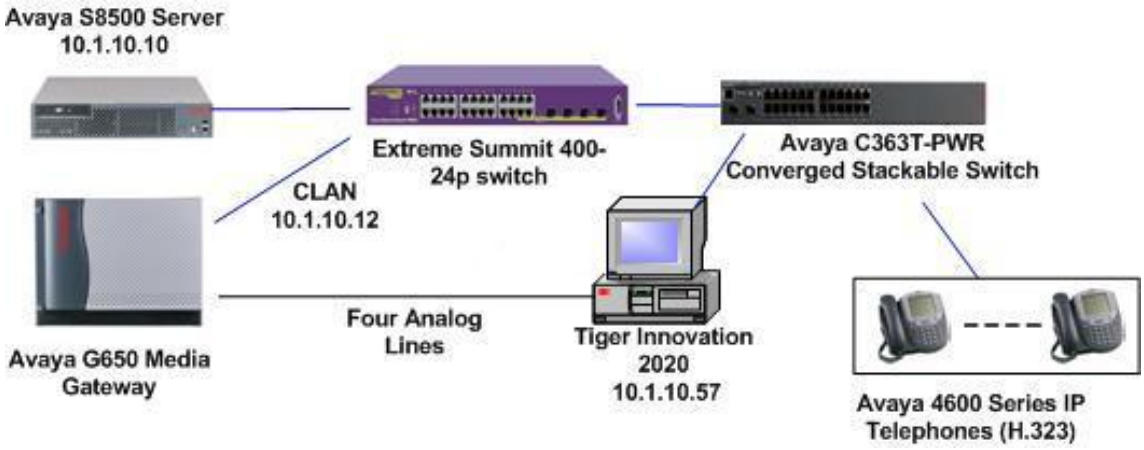


Figure 1: Avaya Communication Manager with Tiger Innovation 2020

2. Equipment and Software Validated

Below is a list of the equipment and software versions used within the compliance-tested network.

Equipment	Software
Avaya S8500 Server running Avaya Communication Manager	4.0.1 (4.00.1.731.2)
Avaya G650 Media Gateway TN2312BP IPSI TN799DP C-LAN TN2302AP Medpro	 HW 7, FW 39 HW 1, FW24 HW 20, FW116
Extreme Summit 400-24p Switch	Extremeware 7.5e.2.8
Avaya C363T-PWR Converged Stackable Switch	4.3.12
Tiger Communications Innovation 2020 Server Tiger Communications 2020 Database	V2.7.5 MySQL v4.1

3. Configure Avaya Communication Manager

This section describes the procedure for configuring mode code operation and VMI stations on Avaya Communication Manager. These steps are performed through the System Access Terminal (SAT).

Step	Description
1.	Enter the **change system-parameters features** command to turn on the mode code interface by setting the **Mode Code Interface** field to "y". change system-parameters features Page 6 of 17 FEATURE-RELATED SYSTEM PARAMETERS Public Network Trunks on Conference Call: 5 Auto Start? n Conference Parties with Public Network Trunks: 6 Auto Hold? y Conference Parties without Public Network Trunks: 6 Attendant Tone? y Night Service Disconnect Timer (seconds): 180 Bridging Tone? n Short Interdigit Timer (seconds): 3 Conference Tone? n Unanswered DID Call Timer (seconds): Intrusion Tone? n Line Intercept Tone Timer (seconds): 30 **Mode Code Interface? y** Long Hold Recall Timer (seconds): 0 Reset Shift Timer (seconds): 0 Station Call Transfer Recall Timer (seconds): 0 Recall from VDN? n DID Busy Treatment: tone Allow AAR/ARS Access from DID/DIOD? n Allow ANI Restriction on AAR/ARS? n Use Trunk COR for Outgoing Trunk Disconnect? n 7405ND Numeric Terminal Display? n 7434ND? n DISTINCTIVE AUDIBLE ALERTING Internal: 1 External: 2 Priority: 3 Attendant Originated Calls: external
2.	Enter the **change feature-access-codes** command to enter a feature access code for **Leave Word Calling Send A Message** and **Leave Word Calling Cancel A Message**. The values chosen must be consistent with the dial plan for valid feature access codes. For the purposes of the compliance test, **Leave Word Calling Send A Message** was set to *39 and **Leave Word Calling Cancel A Message** was set to *40. These values must match the values configured in Tiger Innovation 2020. Refer to Section 4, Step 5. change feature-access-codes Page 3 of 6 FEATURE ACCESS CODE (FAC) **Leave Word Calling Send A Message: *39** **Leave Word Calling Cancel A Message: *40** Limit Number of Concurrent Calls Activation: Deactivation: Malicious Call Trace Activation: Deactivation: Meet-me Conference Access Code Change:

3.	Enter the **display system-parameters mode-code** command to verify that the mode code parameters are set to the default values shown below. display system-parameters mode-code MODE CODE RELATED SYSTEM PARAMETERS MODE CODES (FROM SWITCH TO VMS) **Direct Inside Access: #00** **Direct Dial Access - Trunk: #01** **Internal Coverage: #02** **External Coverage: #03** **Refresh MW Lamp: #06** **System In Day Service: #11** **System In Night Service: #12** OTHER RELATED PARAMETERS DTMF Duration - On (msec): 100 Off (msec): 100 Sending Delay (msec): 100 VMS Hunt Group Extension: Remote VMS Extensions - First: Second:
4.	Add analog extensions that will connect to Tiger Innovation 2020. This is done by entering the **add station x** command where **x** is the extension to be added. The example shows extension 10701 being added. The **Type** field is set to "VMI". The **Port** field is set to the identifier for the physical port on the analog board (TN746B) that will be associated to the new extension. The example shows the **Port** field is set to "01A0201", which indicates that cabinet 01, carrier A, slot 2, port 1 is associated with the new extension. The **Name** field can be set to any arbitrary name but is useful if it indicates that this extension connects to the voice mail system. The **Tests** field is set to "n". add station 10701 Page 1 of 4 STATION Extension: 10701 Lock Messages? n BCC: 0 **Type: VMI** Security Code: TN: 1 **Port: 01A0201** COR: 1 **Name: tiger1** COS: 1 **Tests? n** STATION OPTIONS Time of Day Lock Table: Loss Group: 1 Off Premises Station? n Survivable COR: internal Survivable Trunk Dest? y

5.	On Page 2 of the same command, verify the following settings: • **LWC Activation** y • **Switchhook Flash** y • **Data Restriction** n • **Adjunct Supervision** y change station 10701 Page 2 of 4 STATION FEATURE OPTIONS **LWC Activation? y** Coverage Msg Retrieval? y LWC Log External Calls? n Auto Answer: none CDR Privacy? n **Data Restriction? n** Redirect Notification? y Per Button Ring Control? n Bridged Call Alerting? n Distinctive Audible Alert? y **Switchhook Flash? y** **Adjunct Supervision? y** Ignore Rotary Digits? n H.320 Conversion? n Per Station CPN - Send Calling Number? Service Link Mode: as-needed Multimedia Mode: basic MWI Served User Type: AUDIX Name: Coverage After Forwarding? s
6.	Repeat the previous two steps for each extension to be connected to Tiger Innovation 2020.
7.	Enter the **add hunt-group x** command, where **x** is the hunt group number to be added for the Tiger Innovation 2020 extensions. The **Group Name** can be set to any arbitrary name. The **Group Extension** can be any valid extension consistent with the dial plan. This will be the pilot number to the voice mail. The **Group Type** is set to "ucd-mia". The **Queue** field is set to "y". change hunt-group 97 Page 1 of 60 HUNT GROUP Group Number: 97 ACD? n **Group Name: tiger** **Queue? y** **Group Extension: 16097** Vector? n **Group Type: ucd-mia** Coverage Path: TN: 1 Night Service Destination: COR: 1 MM Early Answer? n Security Code: Local Agent Preference? n ISDN/SIP Caller Display: Queue Limit: unlimited Calls Warning Threshold: Port: Time Warning Threshold: Port:

8. On Page 3 of the same command, enter the extensions of the ports that will connect to the Tiger Innovation 2020 ports under the **Ext** column in the **Group Member Assignments** section.

```
change hunt-group 97                                          Page   3 of  60
                                  HUNT GROUP
         Group Number: 97   Group Extension: 16097         Group Type: ucd-mia
  Member Range Allowed: 1 - 1500       Administered Members (min/max): 1   /2
                                           Total Administered Members: 2
GROUP MEMBER ASSIGNMENTS
      Ext           Name(19 characters)       Ext           Name(19 characters)
   1: 10701         tiger1                14:
   2: 10702         tiger2                15:
   3: 10703         tiger3                16:
   4: 10704         tiger4                17:
```

9. Enter the **add coverage path x** command, where **x** is the coverage path number to be added for the Tiger Innovation 2020 hunt group. Set a coverage point by entering the hunt group number created in Step 7 for **Point1**: for this example it would be "h97".

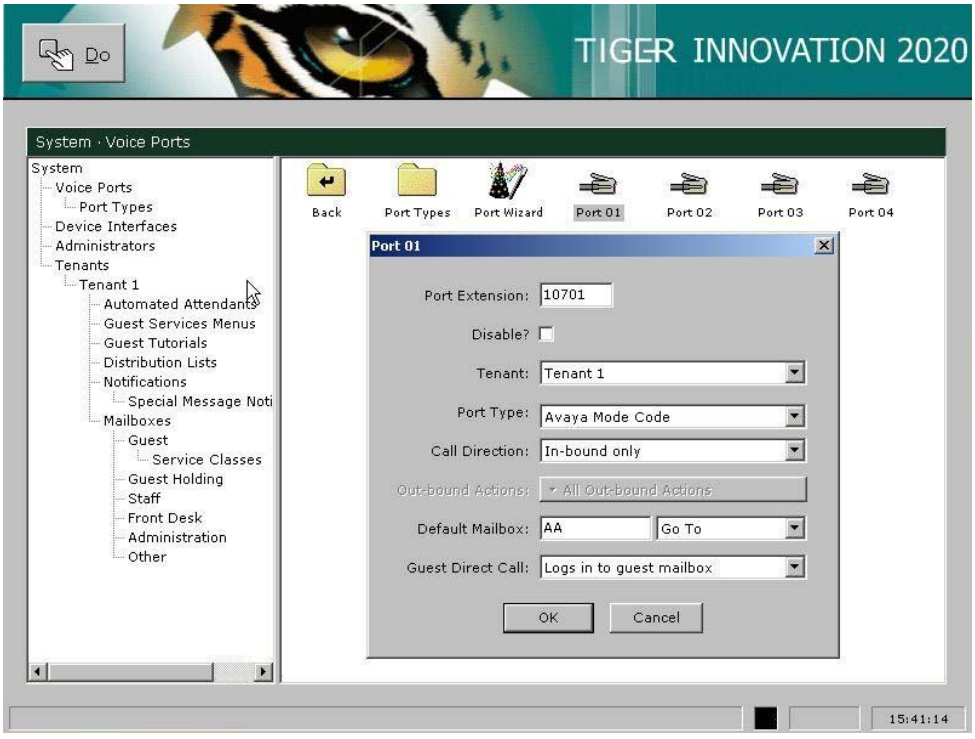
```
change coverage path 97                                       Page   1 of   1
                               COVERAGE PATH

                  Coverage Path Number: 97
                                                  Hunt after Coverage? n
                      Next Path Number:           Linkage

COVERAGE CRITERIA

    Station/Group Status    Inside Call     Outside Call
              Active?             n               n
                Busy?             y               y
       Don't Answer?              y               y         Number of Rings: 2
                 All?             n               n
 DND/SAC/Goto Cover?              y               y
   Holiday Coverage?              n               n

COVERAGE POINTS
    Terminate to Coverage Pts. with Bridged Appearances? n
  Point1: h97            Rng:    Point2:
  Point3:                        Point4:
  Point5:                        Point6:
```

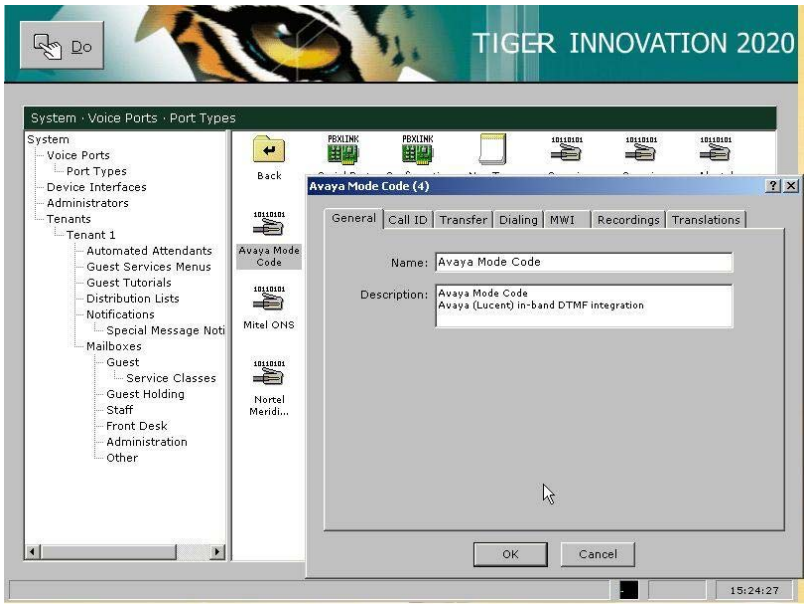
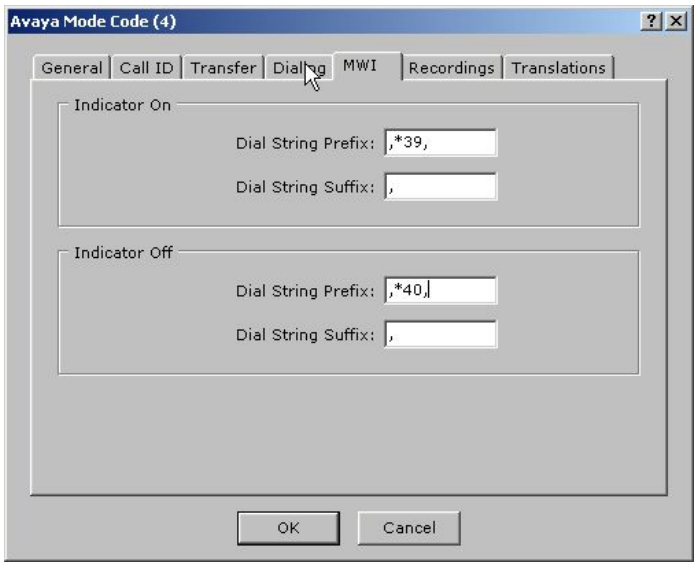
10. The coverage path for each user station that will be using the Tiger Innovation 2020 for voice mail must be set to the coverage path defined in the previous step. Enter the **change station x** command, where **x** is the extension number, to set the coverage path value created in the previous step. The example below shows the **Coverage Path 1** field being set to "97" for user extension 10001.

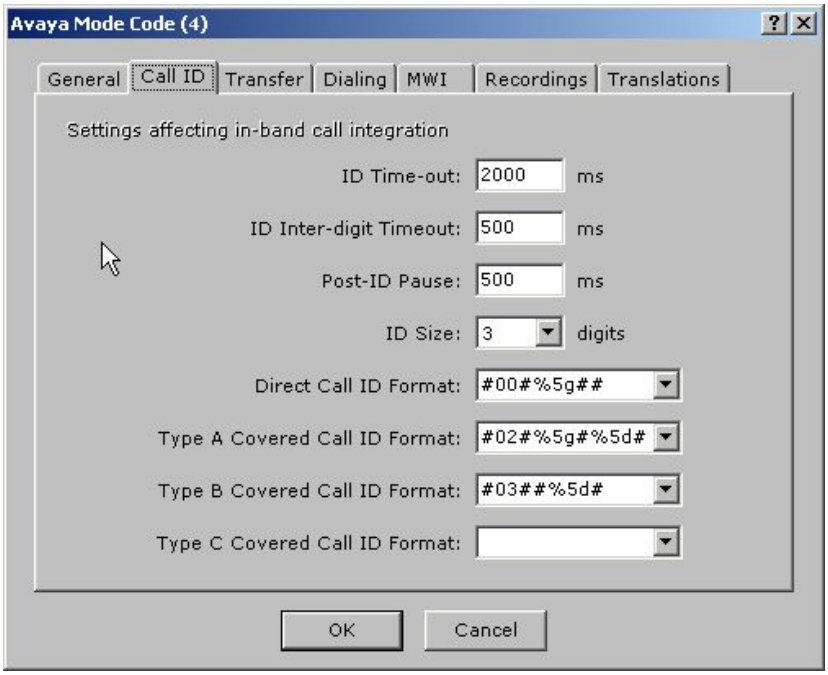
```
change station 10001                                          Page   1 of   5
                                    STATION

Extension: 10001                        Lock Messages? n               BCC: 0
     Type: 4620                         Security Code: 12345            TN: 1
     Port: S00018                     Coverage Path 1: 97              COR: 1
     Name: 10001 avaya 1              Coverage Path 2:                 COS: 1
                                      Hunt-to Station:
STATION OPTIONS
                                           Time of Day Lock Table:
              Loss Group: 19         Personalized Ringing Pattern: 1
                                               Message Lamp Ext: 10001
           Speakerphone: 2-way              Mute Button Enabled? y
        Display Language: english              Expansion Module? n
 Survivable GK Node Name:
          Survivable COR: internal               Media Complex Ext:
   Survivable Trunk Dest? y                           IP SoftPhone? y

                                                 IP Video Softphone? n
```

4. Configure the Tiger Innovation 2020 Server

The configuration information provided in this section describes the steps required to set up Tiger Innovation 2020 to interoperate with Avaya Communication Manager.

Step	Description
1.	On the Tiger Innovation 2020 server, navigate to d:\Innline\bin\ and click on **innline.exe** to launch the Tiger Innovation 2020 voice mail configuration. Click on **Do → Configure System**. 
2.	Expand the tree configuration menu on the left by clicking on **System → Voice Ports**. In the main screen on the right double-click **Port 01**. Enter the **Port Extension** to match the configured analog extension configured in Section 3, Step 4. Select "Avaya Mode Code" from the **Port Type** drop down list. The remaining parameters can be left with their default settings. Click OK. 

Step	Description
3.	Repeat the previous step for the number of Ports configured on Avaya Communication Manager.
4.	Expand the tree configuration menu on the left by clicking on **System → Voice Ports → Port types**. In the main screen on the right double-click **Avaya mode Code**. 
5.	Click on the **MWI** tab. In the Indicator On section, enter the Leave Word Calling Send A Message feature access code configured in Section 3, Step 2 in the **Dial String Prefix** field followed by a comma. In the Indicator Off section, enter the Leave Word Calling Cancel A Message feature access code configured in Section 3, Step 2 for the **Dial String Prefix** field followed by a comma. 

Step	Description
6.	Click on the **Call ID** tab, and select the following parameters from the drop down list for a five digit dialing plan that was used during compliance testing. **Direct Call ID Format:** "#00#%5g##" **Type A covered call ID Format:** "#02#%5g#%5d#" **Type B covered call ID Format:** #03##%5d#" The remaining parameters can be left with their default settings. Click **OK**. 

5. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing. The feature testing focused on exercising voice mail features of the Tiger Innovation 2020 to validate the interface to Avaya Communication Manager via mode codes and the analog ports. The serviceability testing introduced failure scenarios to verify operation of the Tiger Innovation 2020 after failure recovery.

5.1. General Test Approach

The general test approach was to manually place intra-switch calls and inbound trunk calls to extension covered to voice mail as well as directly to the voice mail pilot number. All unanswered inbound calls were routed by Avaya Communication Manager to the Tiger Innovation 2020 hunt group, which were answered by the Tiger Innovation 2020 with the automated attendant greeting. Internal calls placed to the voice mail pilot number directly were answered by the Tiger Innovation 2020 with the voice mail menu of the originating extension with an option to retrieve messages. For serviceability testing, the Tiger Innovation 2020 and Avaya Communication Manager were each restarted separately.

5.2. Test Results

All test cases passed. The Tiger Innovation 2020 properly interpreted the analog mode codes sent by Avaya Communication Manager in each of the call scenarios and responded as expected. Voice mail messages could be recorded and retrieved. It was verified that the Message Waiting Indicator was activated when a new message was left and was deactivated when the message was retrieved. The Tiger Innovation 2020 was able to resume processing of calls after being restarted and after Avaya Communication Manager was restarted.

6. Verification Steps

The following steps may be used to verify the configuration:

- Verify that calls are routed properly to the Tiger Innovation 2020 hunt group and that mode codes are being sent.

  Connect an analog phone to one of the extensions assigned to the Tiger Innovation 2020 hunt group. Dial this extension from another phone on Avaya Communication Manager. Verify the phone rings and then answer the call.
- Verify that users can leave voice messages.

  Place an internal call to an extension with a mailbox on the Tiger Innovation 2020 and let the call go to coverage. Verify that the caller is connected to the voice mailbox of the destination extension and record a message. Verify that the Message Waiting Indicator is activated on the recipient extension.
- Verify that users can access their voice mailboxes.

  From an extension with a mailbox on the Tiger Innovation 2020 that has an active Message Waiting Indicator, call the Tiger Innovation 2020 hunt group extension. Verify that the user is connected to the voice mailbox for that extension and can retrieve the message. Verify the Message Waiting Indicator is deactivated.

7. Support

If technical support is required for the Tiger Communications Innovation 2020, contact the Technical Support Department using the following:

Email: support@tigercomms.com

Phone: +44 1425 891 000 (When prompted select Option 2)

8. Conclusion

These Application Notes describe the procedures for configuring the Tiger Innovation 2020 V2.7.5 to integrate with Avaya Communication Manager 4.0.1 using analog mode codes. The Tiger Innovation 2020 V2.7.5 successfully passed all compliance testing.

9. Additional References

Avaya product documentation can be found at http://support.avaya.com.

- *Administrator Guide for Avaya Communication Manager (4.0)*, Document ID 03-300509, Issue 3.1, February 2007.

Tiger Communications Innovation 2020 Product information available from www.tigercomms.com

- Sales Brochure for Tiger Innovation 2020 (Innovation Pro.pdf)

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya Developer*Connection* Program at devconnect@avaya.com.