



Avaya Solution & Interoperability Test Lab

Application Notes for Extron DMP 128 Plus C V with Avaya Aura® Communication Manager and Avaya Aura® Session Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate Extron DMP 128 Plus C V with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. The Extron DMP 128 Plus C V is a digital matrix processor suitable for conferencing applications. These Application Notes also apply to the Extron DMP 128 Plus C V AT (although not explicitly tested), which only differs in that it provides DANTE support.

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

These Application Notes describe the configuration steps required to integrate Extron DMP 128 Plus C V with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. The Extron DMP 128 Plus C V is a digital matrix processor suitable for conferencing applications. Configuration is performed via the Extron DSP Configurator, which provides a GUI for easy visualization of all the signal paths within a single window and the ability to adjust all input levels, DSP processing parameters, mixing points, and output levels. Extron DMP 128 Plus C V registers to Avaya Aura® Session Manager as a SIP endpoint. These Application Notes also apply to the Extron DMP 128 Plus C V AT (although not explicitly tested), which only differs in that it provides DANTE support.

The Extron DMP Plus Series also includes the products detailed in **Attachment 1**. Since the products share the same firmware version, these Application Notes also apply to them.

2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. The feature testing focused on establishing calls between DMP 128 Plus, Avaya SIP/H.323 desk phones and the PSTN, and exercising basic telephony features, such as hold, mute, and conference. Additional telephony features, such as call forward, follow me, and call pickup were also verified using Communication Manager Features Access Codes (FACs).

The serviceability testing focused on verifying that DMP 128 Plus returned to service after re-connecting the Ethernet cable or rebooting DMP 128 Plus.

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 recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in this DevConnect Application Note included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and Extron DMP 128 Plus C V did not include use of any specific encryption features as requested by Extron.

2.1. Interoperability Compliance Testing

Interoperability compliance testing covered the following features and functionality:

- SIP registration of DMP 128 Plus with Session Manager.
- Calls between DMP 128 Plus and Avaya SIP/H.323 deskphones with Direct IP Media (Shuffling) disabled.
- Calls between DMP 128 Plus and the PSTN.
- UDP transport protocol.
- Support of G.711μ-law, G.729, and G.722 codecs.
- Proper recognition of DTMF tones.
- Basic telephony features, including hold, mute, redial, multiple calls, conference, and long duration calls.
- Extended telephony features using Communication Manager FACs for Call Forward, Follow Me, Call Unpark, and Call Pickup.
- Proper system recovery after a restart of DMP 128 Plus and loss of IP connectivity.

2.2. Test Results

All test cases passed with the following observations noted:

- During the compliance test, the Phone Dialer tool, available through the Extron DSP Configurator, was used for placing and answering calls. The Phone Dialer is designed for basic test purposes only. Typically, customers would use the Extron CCI Pro 700 TouchLink Pro Conference Room Control Interface, or one of Extron's many other customizable touchpanel devices, which provides a more robust experience and audio tone feedback for each call.
- For this solution, Direct IP Media (Shuffling) should be disabled for calls to the DMP 128 Plus. Currently, DMP 128 Plus doesn't support receiving a re-INVITE without SDP, which could have adverse effects on shuffled calls and various hold scenarios.
- DMP 128 Plus does not support call transfer.
- DMP 128 Plus supported conferencing by configuring the DSP to automatically mix audio from all active call appearances.
- Only one codec should be configured on DMP 128 Plus for compatibility with Communication Manager to prevent audio issues during call establishment.

2.3. Support

For technical support on the Extron DMP 128 Plus C V, contact the Extron Support Hotline via phone or website.

- **Phone:** +1 (800) 633-9876
- **Web:** <https://www.extron.com/company/contactus.aspx>

3. Reference Configuration

Figure 1 illustrates a sample configuration with an Avaya SIP-based network that includes the following products:

- Avaya Aura® Communication Manager running in a virtual environment with an Avaya G450 Media Gateway. The Avaya G450 Media Gateway was connected to the PSTN via an ISDN-PRI trunk (not shown).
- Media resources in the Avaya G450 Media Gateway and Avaya Aura® Media Server.
- Avaya Aura® Session Manager connected to Communication Manager via a SIP trunk and acting as a Registrar/Proxy for SIP telephones.
- Avaya Aura® System Manager used to configure Session Manager.
- Avaya 96x1 Series H.323 and SIP Deskphones.
- Avaya J100 Series SIP Deskphones.
- Extron DMP 128 Plus C V, Extron DSP Configurator with Phone Dialer for establishing calls.

Extron DMP 128 Plus C V registered with Session Manager and was configured as Off-PBX Stations (OPS) on Communication Manager.

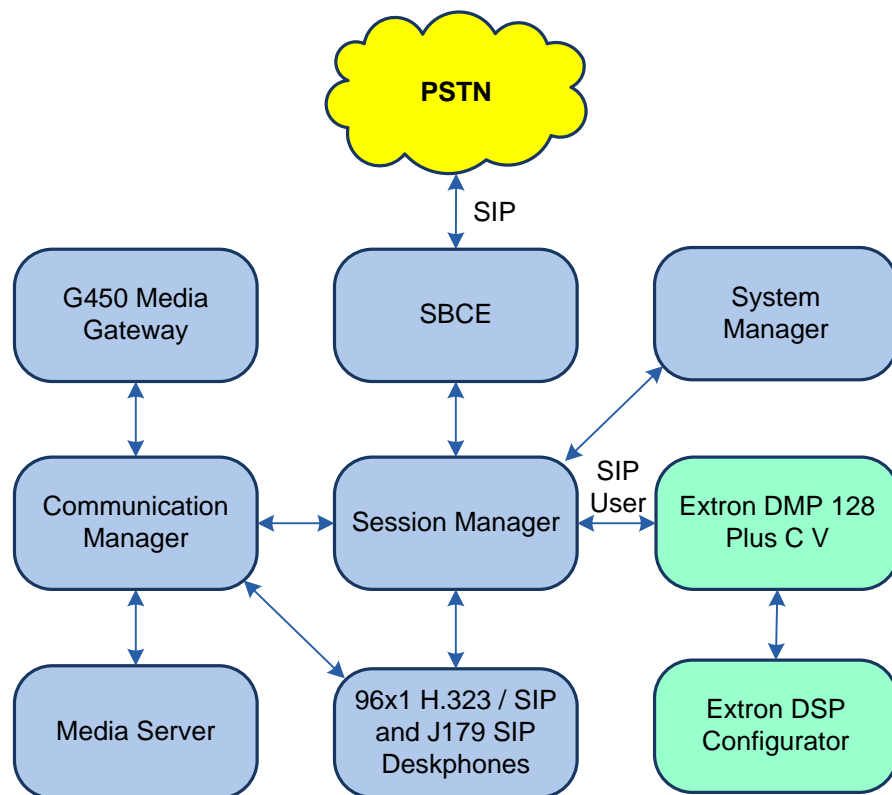


Figure 1: Avaya SIP-based Network with Extron DMP 128 Plus C V

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	8.1.1.0.0-FP1
Avaya G450 Media Gateway	FW 40.25.0
Avaya Aura® Media Server	v.8.0.1.121
Avaya Aura® Session Manager	8.1.0.0 Build No. – 8.1.0.0.733078 Software Update Revision No: 8.1.0.0.079814
Avaya Aura® System Manager	8.1.0.0.810007
Avaya 96x1 Series IP Deskphone	6.8304 (H.323) 7.1.7.0.11 (SIP)
Avaya J100 Series SIP Deskphone	4.0.3.1.4
Extron DMP 128 Plus C V	v1.06.0001-b001
Extron DSP Configurator	2.23.1.42

5. Configure Avaya Aura® Communication Manager

This section provides the procedure for configuring Communication Manager. The procedure includes the following areas:

- Verify Communication Manager license
- Administer IP Network Region and IP Codec Set

Use the System Access Terminal (SAT) to configure Communication Manager and log in with appropriate credentials.

Note: It is assumed that basic configuration of Communication Manager has already been completed, such as the SIP trunk to Session Manager. However, implementers should ensure sufficient Maximum Administered SIP Trunks licenses are available to accommodate the traffic between Communication Manager and Session Manager. The SIP station configuration for Extron DMP 128 Plus C V is configured through System Manager in **Section 6.2**.

5.1. Verify License

Using the SAT, verify that the Off-PBX Telephones (OPS) option is enabled on the **system-parameters customer-options** form. The license file installed on the system controls these options. If a required feature is not enabled, contact an authorized Avaya sales representative.

On **Page 1**, verify that the number of OPS stations allowed in the system is sufficient for the number of SIP endpoints that will be deployed.

display system-parameters customer-options				Page	1 of 12
OPTIONAL FEATURES					
G3 Version: V18		Software Package: Enterprise			
Location: 2		System ID (SID): 1			
Platform: 28		Module ID (MID): 1			
				USED	
Platform Maximum Ports:		48000		86	
Maximum Stations:		36000		25	
Maximum XMOBILE Stations:		36000		0	
Maximum Off-PBX Telephones - EC500:		41000		0	
Maximum Off-PBX Telephones - OPS:		41000		14	
Maximum Off-PBX Telephones - PBFMC:		41000		0	
Maximum Off-PBX Telephones - PVFMC:		41000		0	
Maximum Off-PBX Telephones - SCCAN:		0		0	
Maximum Survivable Processors:		313		0	
(NOTE: You must logoff & login to effect the permission changes.)					

5.2. Administer IP Network Region and IP Codec Set

In the **IP Network Region** form, the **Authoritative Domain** field is configured to match the domain name configured on Session Manager. In this configuration, the domain name is *avaya.com*. **IP-IP Direct Audio** (shuffling) should be disabled to enforce media resources in the Avaya G450 Media Gateway or Avaya Aura® Media Server to be used. The **IP Network Region** form also specifies the **IP Codec Set** to be used for calls routed over the SIP trunk to Session Manager.

Note: Refer to the second bullet item in **Section 2.2** on shuffling.

change ip-network-region 1		Page 1 of 20
IP NETWORK REGION		
Region: 1		
Location: 1	Authoritative Domain: avaya.com	
Name:	Stub Network Region: n	
MEDIA PARAMETERS	Intra-region IP-IP Direct Audio: no	
Codec Set: 1	Inter-region IP-IP Direct Audio: no	
UDP Port Min: 2048	IP Audio Hairpinning? n	
UDP Port Max: 50999		
DIFFSERV/TOS PARAMETERS		
Call Control PHB Value: 46		
Audio PHB Value: 46		
Video PHB Value: 26		
802.1P/Q PARAMETERS		
Call Control 802.1p Priority: 6		
Audio 802.1p Priority: 6		
Video 802.1p Priority: 5	AUDIO RESOURCE RESERVATION PARAMETERS	
H.323 IP ENDPOINTS	RSVP Enabled? n	
H.323 Link Bounce Recovery? y		
Idle Traffic Interval (sec): 20		
Keep-Alive Interval (sec): 5		
Keep-Alive Count: 5		

In the **IP Codec Set** form, select the audio codec type supported for calls routed over the SIP trunk to DMP 128 Plus. The form is accessed via the **change ip-codec-set 1** command. Note that IP codec set '1' was specified in IP Network Region '1' shown above. DMP 128 Plus was tested using G.711MU, G.729, and G.722 codecs. The following IP Codec Set is shown configured with the G.711MU codec.

change ip-codec-set 1

Page 1 of 2

IP MEDIA PARAMETERS

Codec Set: 1

	Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size (ms)
1:	G.711MU	n	2	20
2:				
3:				
4:				
5:				
6:				
7:				

Media Encryption

Encrypted SRTCP: best-effort

1: 1-srtp-aescm128-hmac80
2: none
3:
4:
5:

6. Configure Avaya Aura® Session Manager

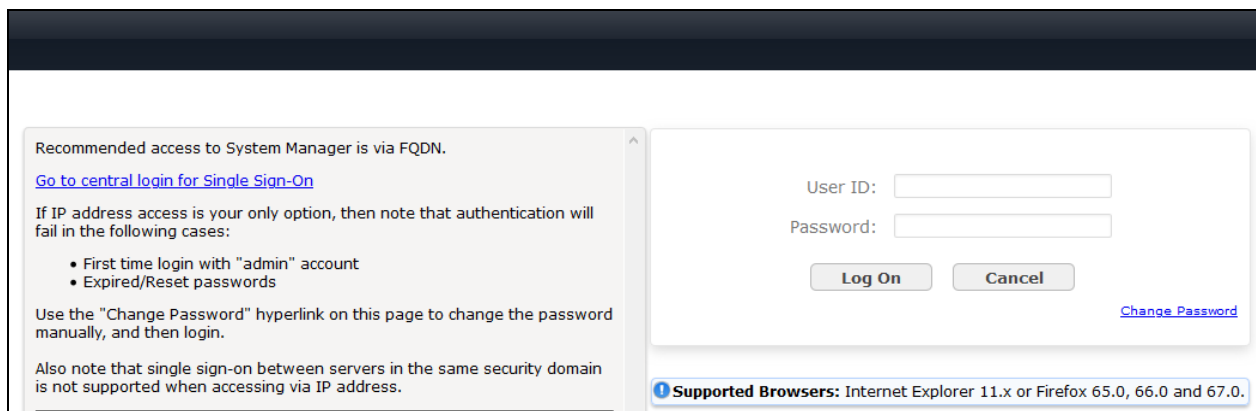
This section provides the procedure for configuring Session Manager. The procedures include the following areas:

- Launch System Manager
- Set Network Transport Protocol for DMP 128 Plus
- Administer SIP User

Note: It is assumed that basic configuration of Session Manager has already been performed. This section will focus on the configuration of a SIP user for DMP 128 Plus.

6.1. Launch System Manager

Access the System Manager web interface by using the URL “https://ip-address” in an Internet browser window, where “ip-address” is the IP address of the System Manager server. Log in using the appropriate credentials.



Recommended access to System Manager is via FQDN.
[Go to central login for Single Sign-On](#)

If IP address access is your only option, then note that authentication will fail in the following cases:

- First time login with "admin" account
- Expired/Reset passwords

Use the "Change Password" hyperlink on this page to change the password manually, and then login.

Also note that single sign-on between servers in the same security domain is not supported when accessing via IP address.

User ID:

Password:

[Change Password](#)

Supported Browsers: Internet Explorer 11.x or Firefox 65.0, 66.0 and 67.0.

6.2. Set Network Transport Protocol for Extron DMP 128 Plus

From the System Manager **Home** screen, select **Elements** → **Routing** → **SIP Entities** and edit the SIP Entity for Session Manager shown below.

The screenshot shows the Avaya Aura System Manager 8.1 interface. The top navigation bar includes 'Users', 'Elements', 'Services', 'Widgets', 'Shortcuts', a search bar, and a user profile 'admin'. The left sidebar shows a tree view with 'Routing' selected, and 'SIP Entities' highlighted. The main content area is titled 'SIP Entity Details' and contains two sections: 'General' and 'Monitoring'. In the 'General' section, the 'Name' is 'devcon-sm', 'IP Address' is '10.64.102.117', 'SIP FQDN' is empty, 'Type' is 'Session Manager', 'Notes' is empty, 'Location' is 'Thornton', 'Outbound Proxy' is empty, 'Time Zone' is 'America/New_York', 'Minimum TLS Version' is 'Use Global Setting', and 'Credential name' is empty. In the 'Monitoring' section, 'SIP Link Monitoring' and 'CRLF Keep Alive Monitoring' are both set to 'Use Session Manager Configuration'. 'Commit' and 'Cancel' buttons are at the top right.

General	
Name	devcon-sm
IP Address	10.64.102.117
SIP FQDN	
Type	Session Manager
Notes	
Location	Thornton
Outbound Proxy	
Time Zone	America/New_York
Minimum TLS Version	Use Global Setting
Credential name	

Monitoring	
SIP Link Monitoring	Use Session Manager Configuration
CRLF Keep Alive Monitoring	Use Session Manager Configuration

Scroll down to the **Listen Ports** section and verify that the transport network protocol used by DMP 128 Plus is specified in the list below. For the compliance test, DMP 128 Plus used UDP network transport.

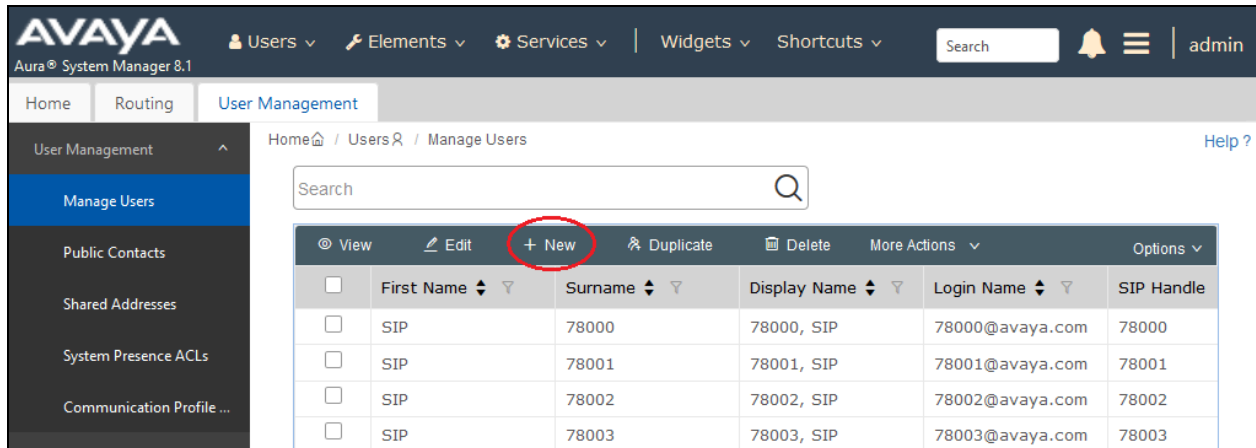
The screenshot shows the 'Listen Ports' section of the Avaya Aura System Manager 8.1 interface. It includes 'Add' and 'Remove' buttons, a '3 Items' indicator, and a 'Filter: Enable' button. A table lists three listen ports: 5060 (TCP), 5060 (UDP), and 5061 (TLS). The UDP entry is highlighted with a red rectangle. The table has columns for 'Listen Ports', 'Protocol', 'Default Domain', 'Endpoint', and 'Notes'. At the bottom, there is a 'Select : All, None' option.

Listen Ports	Protocol	Default Domain	Endpoint	Notes
<input type="checkbox"/> 5060	TCP	avaya.com	<input type="checkbox"/>	
<input type="checkbox"/> 5060	UDP	avaya.com	<input type="checkbox"/>	
<input type="checkbox"/> 5061	TLS	avaya.com	<input type="checkbox"/>	

Select : All, None

6.3. Administer SIP User

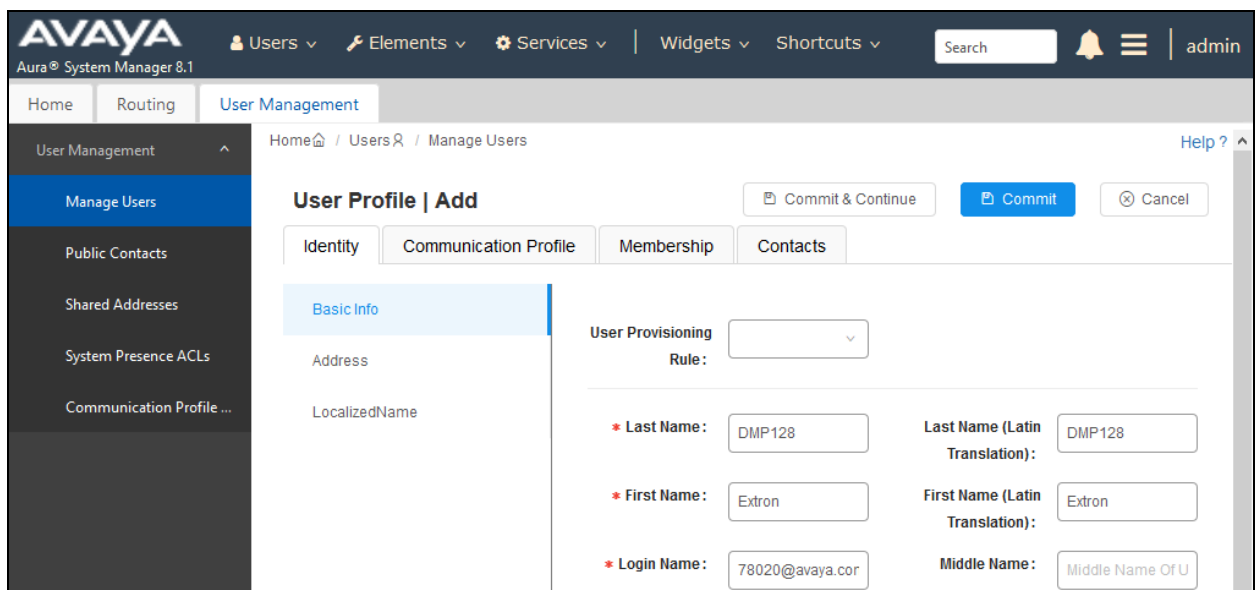
In the subsequent screen (not shown), select **Users** → **User Management** → **Manage Users** to display the **User Management** screen below. Click **New** to add a user.



View	Edit	+ New	Duplicate	Delete	More Actions	Options
<input type="checkbox"/>	First Name	Surname	Display Name	Login Name	SIP Handle	
<input type="checkbox"/>	SIP	78000	78000, SIP	78000@avaya.com	78000	
<input type="checkbox"/>	SIP	78001	78001, SIP	78001@avaya.com	78001	
<input type="checkbox"/>	SIP	78002	78002, SIP	78002@avaya.com	78002	
<input type="checkbox"/>	SIP	78003	78003, SIP	78003@avaya.com	78003	

6.3.1. Identity

The **New User Profile** screen is displayed. Enter desired **Last Name** and **First Name**. For **Login Name**, enter “<ext>@<domain>”, where “<ext>” is the desired DMP 128 Plus SIP extension and “<domain>” is the applicable SIP domain name from **Section 5.2**. Retain the default values in the remaining fields.



User Profile | Add

Commit & Continue Commit Cancel

Identity Communication Profile Membership Contacts

Basic Info

Address

LocalizedName

User Provisioning Rule: DMP128

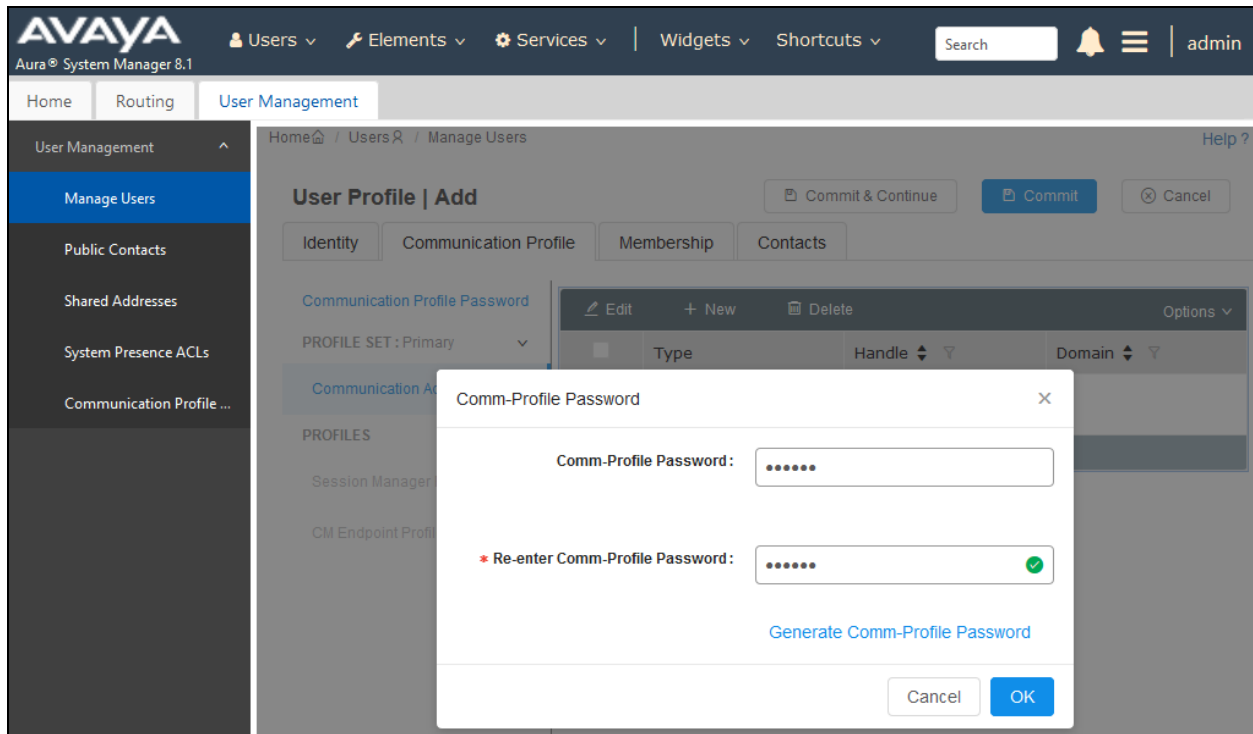
* Last Name: DMP128 Last Name (Latin Translation): DMP128

* First Name: Extron First Name (Latin Translation): Extron

* Login Name: 78020@avaya.cor Middle Name: Middle Name Of U

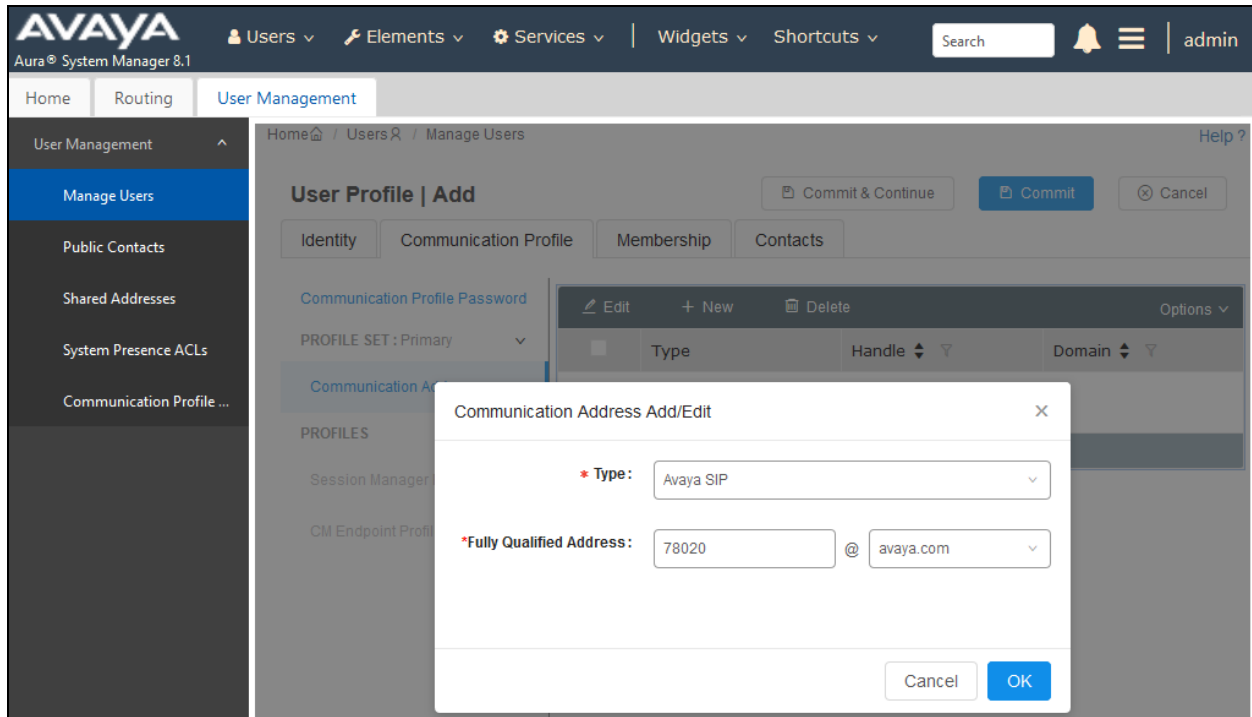
6.3.2. Communication Profile

Select the **Communication Profile** tab. Next, click on **Communication Profile Password**. For **Comm-Profile Password** and **Re-enter Comm-Profile Password**, enter the desired password for the SIP user to use for registration. Click **OK**.



6.3.3. Communication Address

Click on **Communication Address** and then click **New** to add a new entry. The **Communication Address Add/Edit** dialog box is displayed as shown below. For **Type**, retain *Avaya SIP*. For **Fully Qualified Address**, enter and select the SIP user extension and domain name to match the login name from **Section 6.3.1**. Click **OK**.



6.3.4. Session Manager Profile

Click on toggle button by **Session Manager Profile**. For **Primary Session Manager**, **Origination Application Sequence**, **Termination Application Sequence**, and **Home Location**, select the values corresponding to the applicable Session Manager and Communication Manager. Retain the default values in the remaining fields.

Avaya Aura System Manager 8.1

Users Elements Services Widgets Shortcuts

Home Routing User Management

User Management

Manage Users

Public Contacts

Shared Addresses

System Presence ACLs

Communication Profile ...

Home / Users / Manage Users

Help ?

User Profile | Add

Commit & Continue Commit Cancel

Identity Communication Profile Membership Contacts

Communication Profile Password

PROFILE SET : Primary

Communication Address

PROFILES

Session Manager Profile ☒

CM Endpoint Profile ☐

SIP Registration

Primary Session Manager : devcon-sm

Secondary Session Manager : Start typing...

Survivability Server : Start typing...

Max. Simultaneous Devices : Select

Block New Registration When Maximum Registrations ☐

Application Sequences

Origination Sequence : DEVCON-CM App Seque...

Termination Sequence : DEVCON-CM App Seque...

Scroll down to the **Call Routing Settings** section to configure the **Home Location**.

Call Routing Settings

Home Location : Thornton

Conference Factory Set : Select

6.3.5. Communication Manager Endpoint Profile

Click on the toggle button by **CM Endpoint Profile**. For **System**, select the value corresponding to the applicable Communication Manager. For **Extension**, enter the SIP user extension from **Section 6.3.3**. For **Template**, select *9641SIP_DEFAULT_CM_8_1*. For **Port**, click and select *IP*. Retain the default values in the remaining fields. Click on the Endpoint Editor (i.e, Edit icon in **Extension** field) to configure four call appearances in the **Button Assignment** tab.

The screenshot displays the Avaya Aura System Manager 8.1 web interface. The top navigation bar includes the Avaya logo, 'Aura® System Manager 8.1', and various menu items like 'Users', 'Elements', 'Services', 'Widgets', and 'Shortcuts'. A search bar and user profile 'admin' are also present. The left sidebar shows a tree view with 'User Management' expanded, containing 'Manage Users', 'Public Contacts', 'Shared Addresses', 'System Presence ACLs', and 'Communication Profile...'. The main content area is titled 'User Profile | Add' and features tabs for 'Identity', 'Communication Profile', 'Membership', and 'Contacts'. The 'Communication Profile' tab is active. On the left of this tab, there's a 'Communication Profile Password' section with 'PROFILE SET : Primary' and a 'Communication Address' field. Below this, a 'PROFILES' section shows 'Session Manager Profile' and 'CM Endpoint Profile' (which is selected and highlighted in blue). The main form area contains several fields: 'System' (dropdown, value: devcon-cm), 'Profile Type' (dropdown, value: Endpoint), 'Extension' (text input, value: 78020, with an edit icon), 'Template' (dropdown, value: 9641SIP_DEFAULT_CM_8_1), 'Set Type' (text input, value: 9641SIP), 'Security Code' (text input, placeholder: Enter Security Code), 'Port' (dropdown, value: IP), 'Voice Mail Number' (text input), 'Preferred Handle' (dropdown, value: Select), 'Calculate Route Pattern' (checkbox, checked), 'SIP URI' (dropdown, value: Select), 'Enhanced Callr-Info Display for 1-line phones' (checkbox, unchecked), 'Delete on Unassign from User or on Delete User' (checkbox, checked), 'Override Endpoint Name and Localized Name' (checkbox, checked), and 'Allow H.323 and SIP Endpoint Dual Registration' (checkbox, unchecked). At the top right of the form, there are buttons for 'Commit & Continue', 'Commit', and 'Cancel'.

Navigate to the **Button Assignment** tab and configure four call appearances as shown below. DMP 128 Plus was configured with four call appearances in **Section 7.4**. Click **Done** to return to the previous web page and then **Commit** to save the configuration (not shown).

The screenshot shows a web interface for configuring button assignments. At the top, there are tabs: General Options (G) with a red star, Feature Options (F), Site Data (S), Abbreviated Call Dialing (A), Enhanced Call Fwd (E), Button Assignment (B) (selected), Profile Settings (P), and Group Membership (M). Below these are sub-tabs: Main Buttons (selected), Feature Buttons, and Button Modules. The main content area is divided into two sections: Endpoint Configurations and Button Configurations.

Endpoint Configurations

	Favorite	Button Label
1	<input type="checkbox"/>	<input type="text"/>
2	<input type="checkbox"/>	<input type="text"/>
3	<input type="checkbox"/>	<input type="text"/>
4	<input type="checkbox"/>	<input type="text"/>
5	<input type="checkbox"/>	<input type="text"/>
6	<input type="checkbox"/>	<input type="text"/>
7	<input type="checkbox"/>	<input type="text"/>

Button Configurations

Button Feature	Argument-1	Argument-2	Argument-3
call-appr <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
call-appr <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
call-appr <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
call-appr <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
None <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
None <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
None <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

7. Configure Extron DMP 128 Plus C V

This section provides the procedures for configuring DMP 128 Plus. The procedures fall into the following areas:

- Launch Web Interface
- Administer Network Settings
- Administer SIP Settings
- Configure the DSP

7.1. Launch Web Interface

DMP 128 Plus was configured via the web interface by using the URL “https://ip-address/www/voip.html” in an Internet browser window, where “ip-address” is the DMP 128 Plus IP address. The web page displayed in the following section is displayed.

7.2. Administer Network Settings

To configure IP network settings, navigate to **Network** → **Interface** and configure the **LAN 1** settings. For the compliance test, a static IP address, *192.168.100.230*, was assigned to DMP 128 Plus as shown below. Alternatively, DHCP may be used. Click **Apply**.

The screenshot displays the web interface for the Extron DMP 128 Plus C V. The header includes the device name, model, and firmware version (v1.06.0001), along with the Extron logo. A navigation bar at the top contains tabs for Home, Network, Line 1 through Line 8, Logs, and System. The 'Network' tab is selected, and the 'Interface' sub-tab is active. The main configuration area shows settings for 'VoIP Interface: LAN 1'. Below this, there are fields for 'DNS 1 (Optional): 192.168.1.1' and 'DNS 2 (Optional):'. A section titled 'LAN 1' is expanded, showing 'IP Address' set to 'Static' (selected) instead of 'DHCP'. The 'IP Address' field is populated with '192.168.100.230', the 'Subnet Mask' is '255.255.255.0', and the 'Default Gateway' is '192.168.100.1'. Below the LAN 1 section, there is a collapsed section for 'LAN 2' and a 'VLAN' section. An 'Apply' button is located at the bottom right of the interface.

7.3. Administer SIP Settings

To configure SIP settings, select the **Network** tab followed by the **Transport** sub-tab. Click **Configuration** and then select the **SIP** tab. Configure the following fields:

- **Transport** Specify the *UDP* transport protocol.
- **Listening Port** Specify port 5060.
- **Use Secure RTP (AES CTR)** Disable SRTP.

Click **Apply**.

The screenshot shows the web interface of the Extron DMP 128 Plus C V. The header includes the device name, description ("Digital audio matrix processor with AEC and VoIP"), firmware version ("v1.06.0001"), and the Extron logo. A navigation bar at the top contains tabs for Home, Network, Line 1 through Line 8, Logs, and System. Below this is a sub-navigation bar with tabs for Interface, QoS/LLDP-MED, Transport, and NAT Traversal. The main content area is titled "Transport" and contains the following configuration options:

- Transport:** Three radio buttons are present: ☒ UDP, ☐ TCP, and ☐ TLS.
- Listening Port:** A dropdown menu showing the value "5060".
- Use Secure RTP (AES CTR):** A checkbox that is currently unchecked.
- Apply:** A button located at the bottom right of the configuration area.

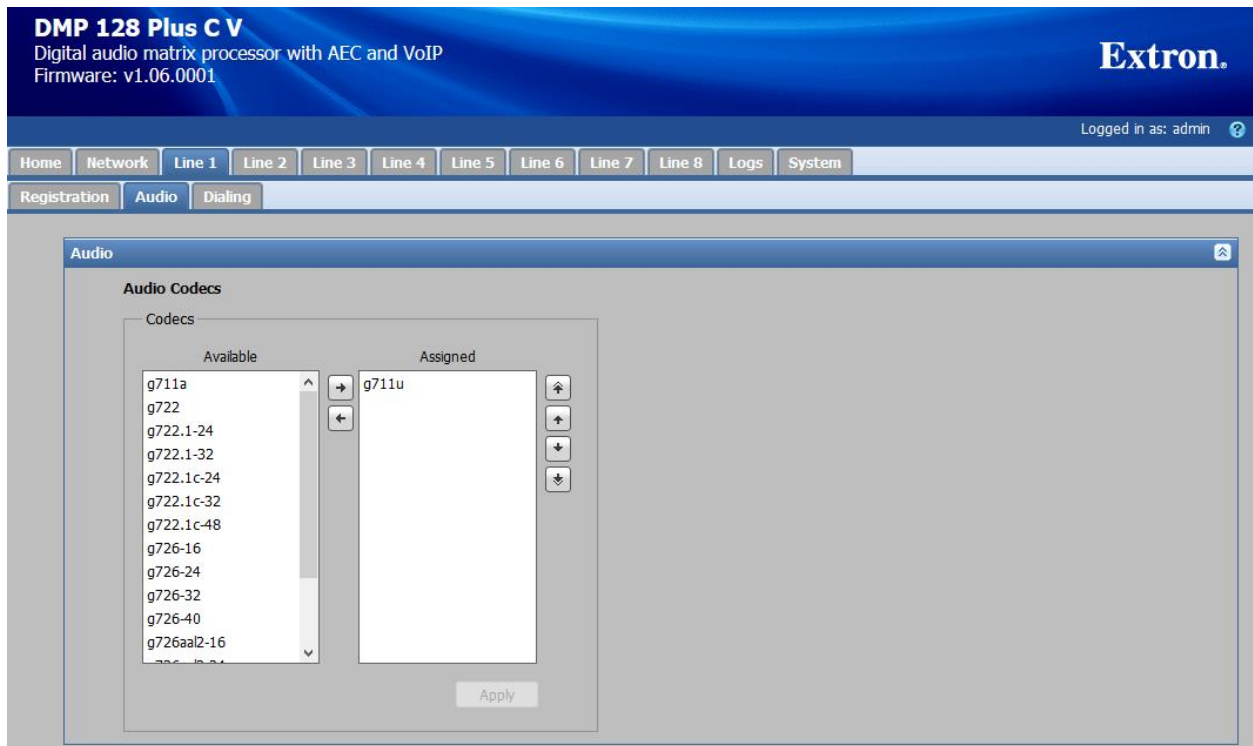
Navigate to **Line 1** tab to configure the SIP registration settings. Configure the following fields:

- **User Name** Specify the SIP extension configured on Session Manager.
- **Authentication User Name** Specify a user name.
- **Authentication Password** Specify the SIP password used to register with Session Manager.
- **Display Name** Provide a display name.
- **Primary Proxy Name/IP** Specify the Session Manager IP address (10.64.102.117).
- **Primary Proxy Port** Specify SIP port 5060.

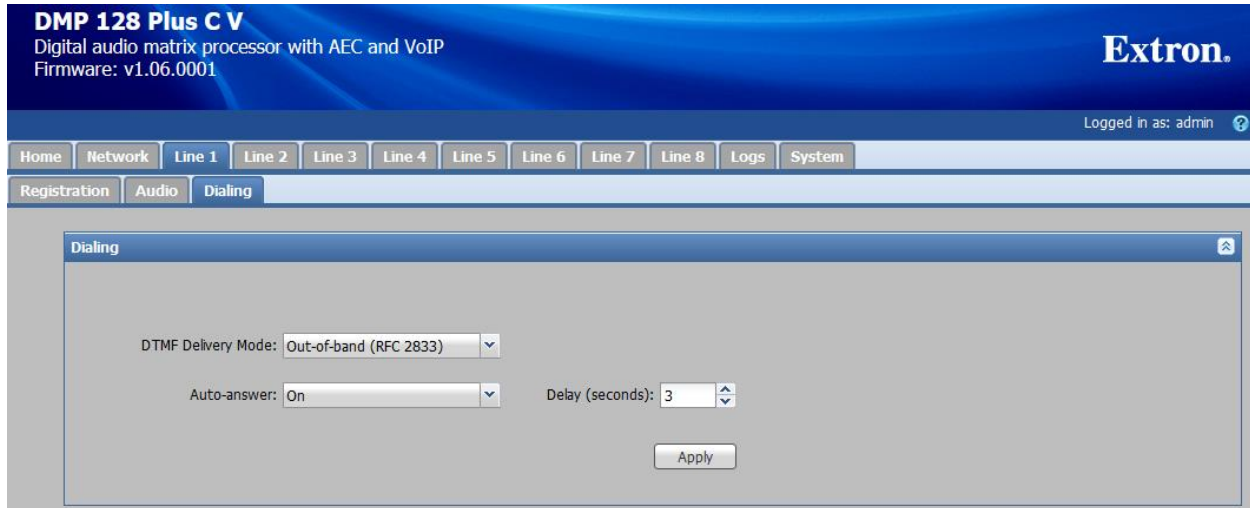
Click **Apply** to submit the changes and then click the **Register** button to register DMP 128 Plus with Session Manager after all the configuration is in place.

The screenshot shows the web interface of the Extron DMP 128 Plus C V. The header includes the device name, model, and firmware version (v1.06.0001), along with the Extron logo and a login status (Logged in as: admin). The navigation menu includes tabs for Home, Network, Line 1 through Line 8, Logs, and System. The 'Line 1' tab is selected, and the 'Registration' sub-tab is active. The 'Registration' form contains the following fields: * User Name (78020), Authentication User Name (78020), Authentication Password (masked with dots), Display Name (DMP128), * Primary Proxy Name/IP (10.64.102.117), and Primary Proxy Port (5060). A note indicates that an asterisk denotes a required field. At the bottom of the form are 'Clear' and 'Apply' buttons. Below the form is an 'Advanced' section with a dropdown arrow. At the very bottom, there are 'Register' and 'Unregister' buttons, and a status indicator showing 'Status: Not Registered'.

In the **Audio** sub-tab, specify the desired codec, G.711, G.729, or G.722, but not more than once. Refer to the note on codec negotiation in **Section 2.2**. Click **Apply**.



In the **Dialing** sub-tab, accept the default settings shown below.



DMP 128 Plus C V
Digital audio matrix processor with AEC and VoIP
Firmware: v1.06.0001

Extron.

Logged in as: admin

Home Network Line 1 Line 2 Line 3 Line 4 Line 5 Line 6 Line 7 Line 8 Logs System

Registration Audio **Dialing**

Dialing

DTMF Delivery Mode: Out-of-band (RFC 2833)

Auto-answer: On Delay (seconds): 3

Apply

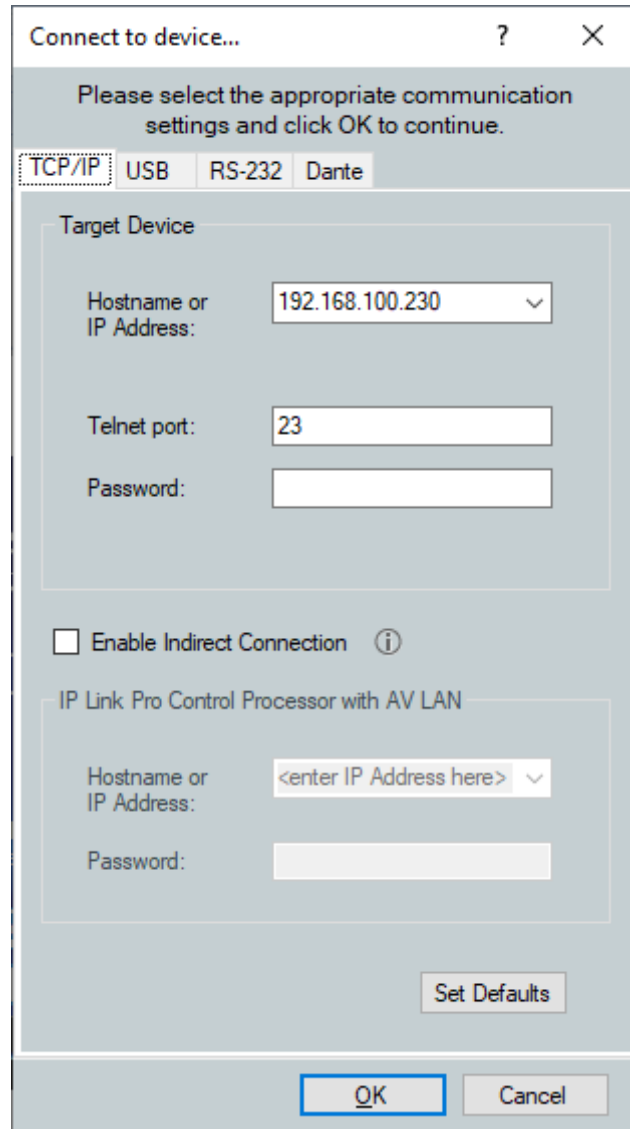
7.4. Configure the DSP

Although the DSP configuration is outside the scope of these Application Notes, the following information is provided for informational purposes only.

Launch the **DSP Configurator**, select **Connect...** in the drop-down field, and click **OK**.



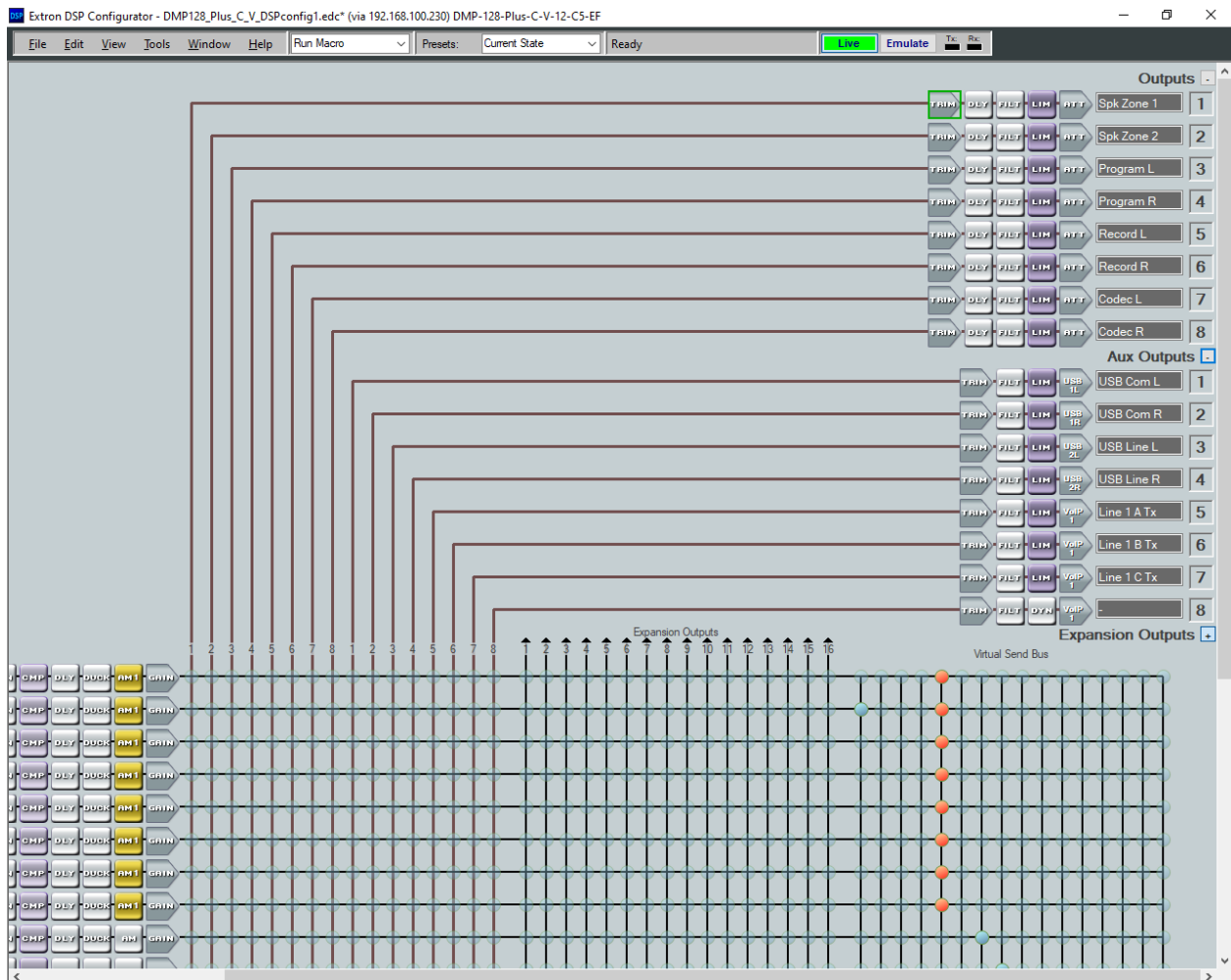
In the **Connect to device...** window shown below, enter the DMP 128 Plus IP address in the **Hostname or IP Address** field and click **OK**.



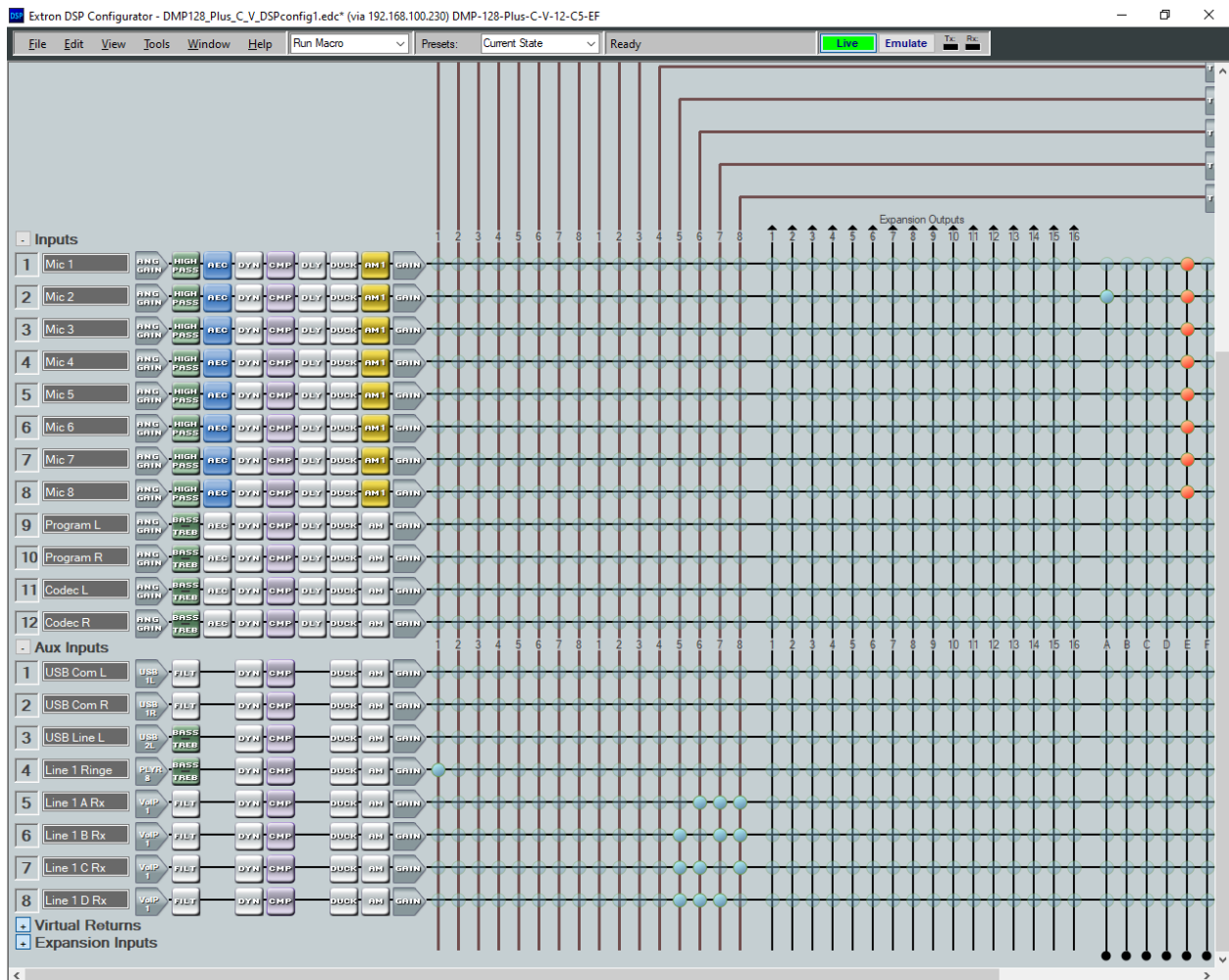
The image shows a 'Connect to device...' dialog box with a title bar containing a question mark and a close button. The main area has a light blue background and contains the following elements:

- A message: "Please select the appropriate communication settings and click OK to continue."
- Four tabs: "TCP/IP" (selected and highlighted with a dotted border), "USB", "RS-232", and "Dante".
- A section titled "Target Device" containing:
 - A label "Hostname or IP Address:" followed by a dropdown menu showing "192.168.100.230".
 - A label "Telnet port:" followed by a text input field containing "23".
 - A label "Password:" followed by an empty text input field.
- A checkbox labeled "Enable Indirect Connection" with an information icon (i) to its right.
- A section titled "IP Link Pro Control Processor with AV LAN" containing:
 - A label "Hostname or IP Address:" followed by a dropdown menu showing "<enter IP Address here>".
 - A label "Password:" followed by an empty text input field.
- A "Set Defaults" button located below the "IP Link Pro" section.
- At the bottom, two buttons: "OK" (highlighted with a blue border) and "Cancel".

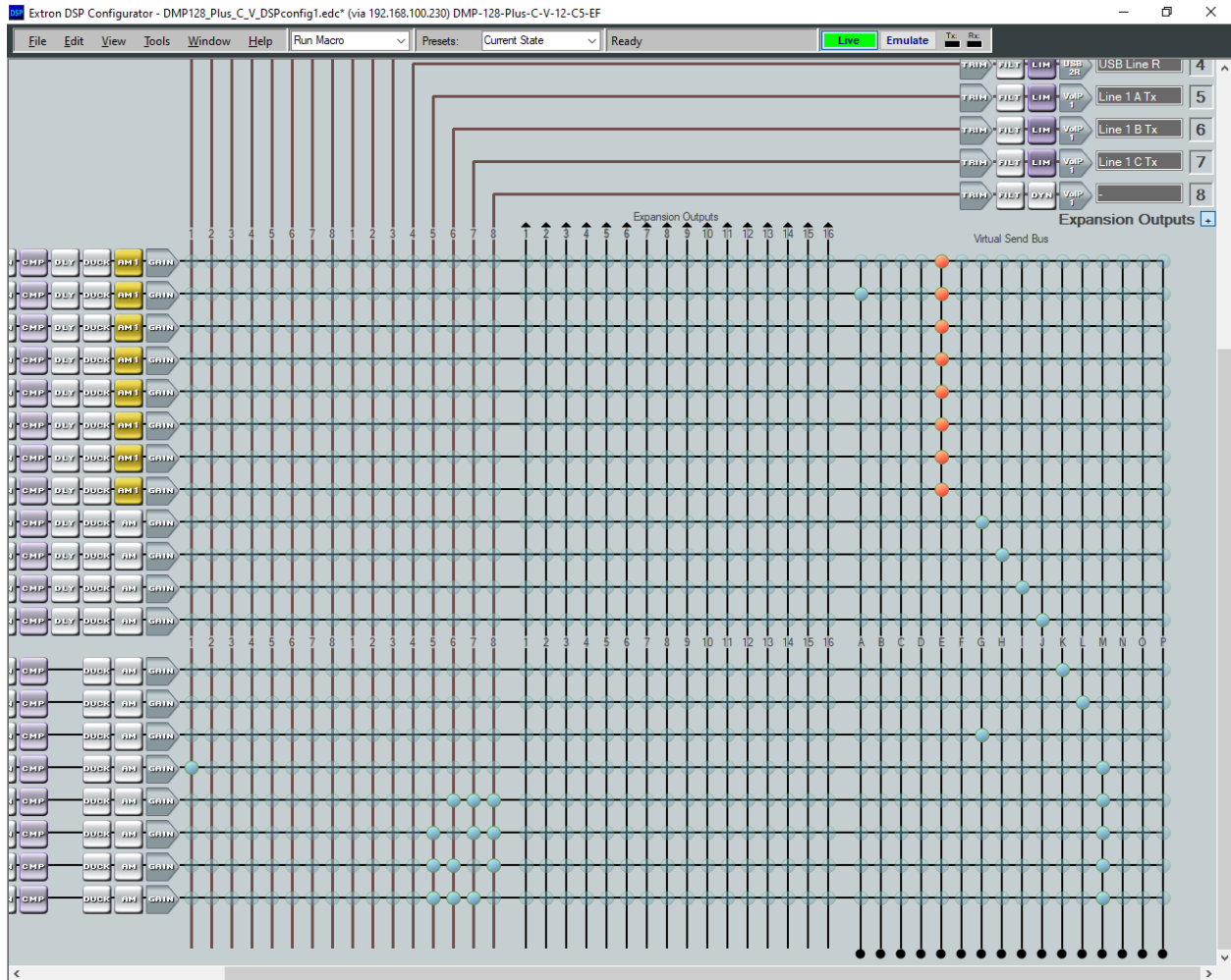
Once connected to DMP 128 Plus, the **DSP Configurator** is displayed as shown below. The following displays the top portion of the screen.



Scrolling down shows that four call appearances were configured for the SIP line and that the audio call appearances were mixed together. This results in all calls being conferenced together automatically.



Scrolling to the right displays the rest of the screen.



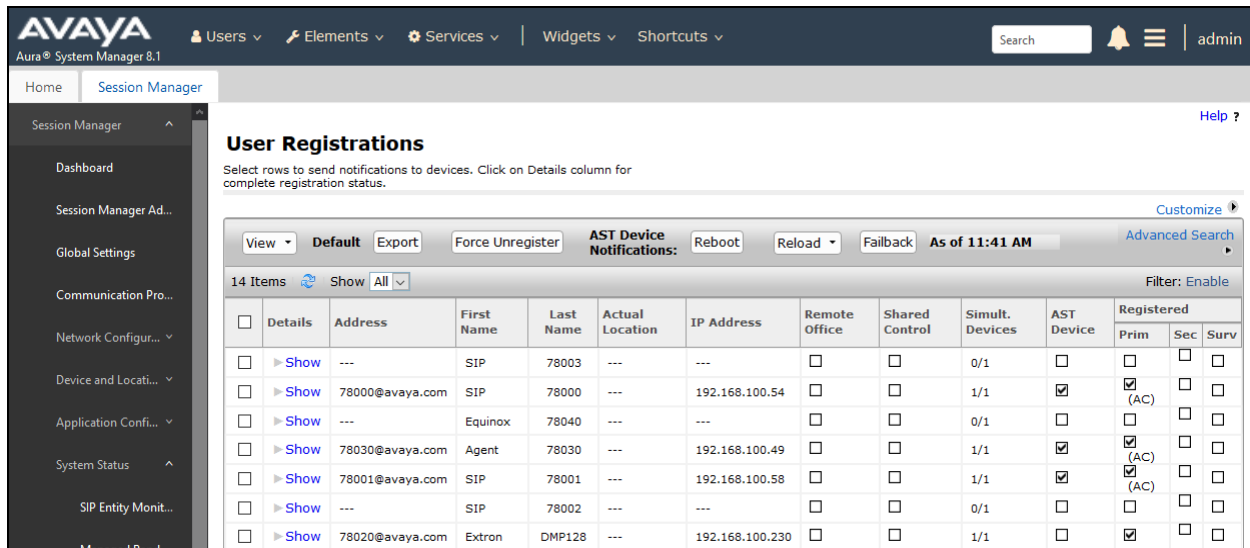
Calls were originated and answered using the **Phone Dialer** accessible from the **DSP Configurator** menu (i.e., **Tools → Phone Dialer**). Typically, the **Extron CCI Pro 700 TouchLink Pro Conference Room Control Interface** or another Extron customizable touchpanel device would be used by customers for this purpose, which would provide audio tone feedback for each call.



8. Verification Steps

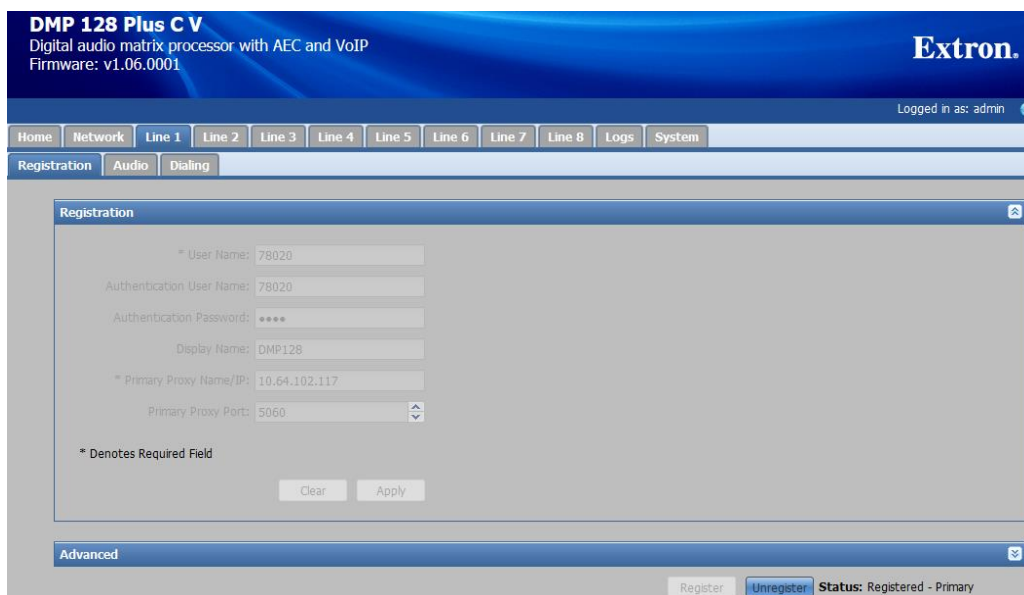
This section provides the tests that can be performed to verify proper configuration of Communication Manager, Session Manager, and DMP 128 Plus C V.

1. Verify that DMP 128 Plus has successfully registered with Session Manager. In System Manager, navigate to **Elements** → **Session Manager** → **System Status** → **User Registrations** to check the registration status.



View	Default	Export	Force Unregister	AST Device Notifications:	Reboot	Reload	Failback	As of 11:41 AM	Customize	Advanced Search
14 Items	Show	All							Filter: Enable	
Details	Address	First Name	Last Name	Actual Location	IP Address	Remote Office	Shared Control	Simult. Devices	AST Device	Registered
<input type="checkbox"/>	---	SIP	78003	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	78000@avaya.com	SIP	78000	---	192.168.100.54	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	---	Equinox	78040	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	78030@avaya.com	Agent	78030	---	192.168.100.49	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	78001@avaya.com	SIP	78001	---	192.168.100.58	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	---	SIP	78002	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	78020@avaya.com	Extron	DMP128	---	192.168.100.230	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2. Alternatively, the registration status may be viewed on the DMP 128 Plus web interface in the **Registration** tab or in the **Phone Dialer** shown on the next page.



DMP 128 Plus C V
Digital audio matrix processor with AEC and VoIP
Firmware: v1.06.0001

Extron.

Logged in as: admin

Home Network Line 1 Line 2 Line 3 Line 4 Line 5 Line 6 Line 7 Line 8 Logs System

Registration Audio Dialing

Registration

* User Name: 78020

Authentication User Name: 78020

Authentication Password: ****

Display Name: DMP128

* Primary Proxy Name/IP: 10.64.102.117

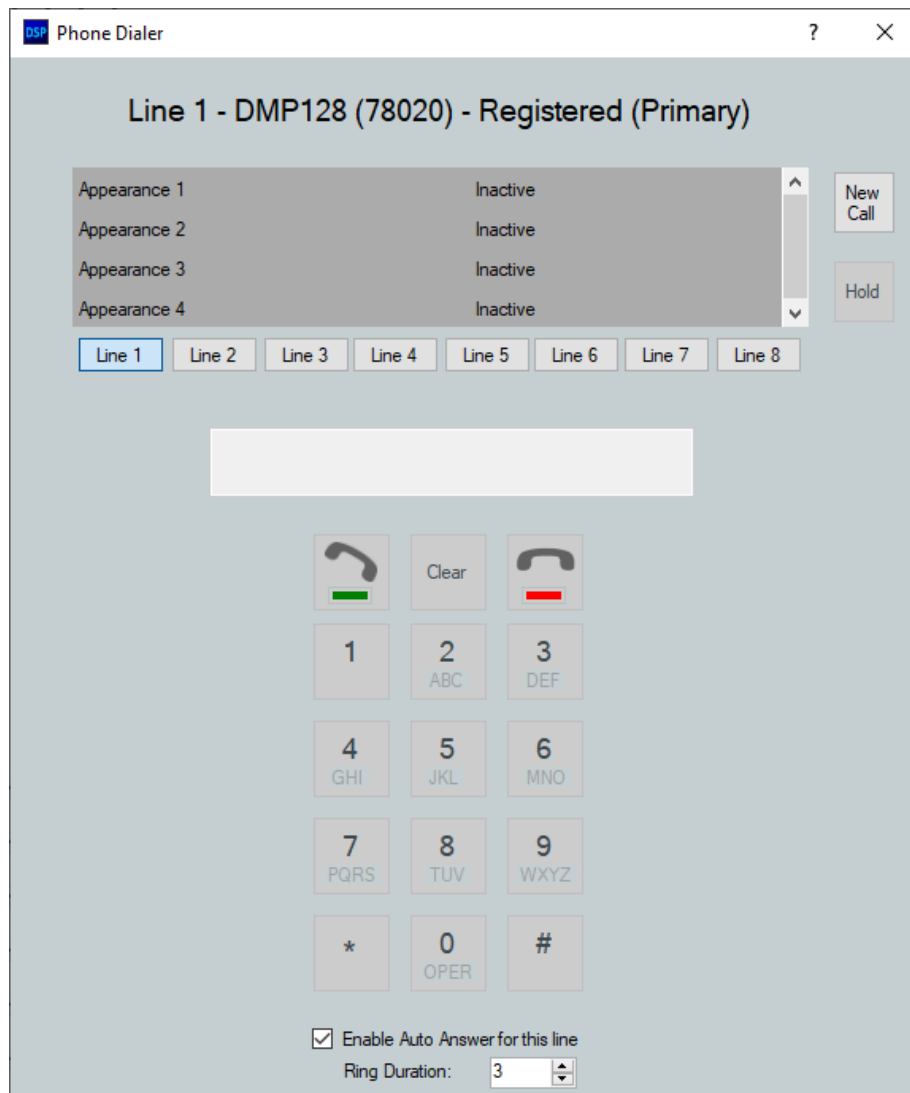
Primary Proxy Port: 5060

* Denotes Required Field

Clear Apply

Advanced

Register Unregister Status: Registered - Primary



3. Verify basic telephony features by establishing calls between DMP 128 Plus and local phones.

9. Conclusion

These Application Notes described the configuration steps required to integrate Extron DMP 128 Plus C V with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. Extron DMP 128 Plus C V was able to establish calls with H.323 stations, SIP stations, and the PSTN. In addition, basic telephony features were verified. All feature and serviceability test cases were completed successfully with observations noted in **Section 2.2**.

10. Additional References

This section references the Avaya and Extron documentation relevant to these Application Notes. The Avaya product documentation is available at <http://support.avaya.com> and the Extron documentation is available at <https://www.extron.com>.

- [1] *Administering Avaya Aura® Communication Manager*, Release 8.1.x, Issue 6, March 2020.
- [2] *Administering Avaya Aura® System Manager 8.1.x*, Issue 5, March 2020.
- [3] *Administering Avaya Aura® Session Manager*, Release 8.1.x, Issue 5, March 2020.
- [4] *Extron DMP 128 Plus User Guide*, 68-2826-01 Rev. H, 12 19.
- [5] *Extron DMP 128 Plus Series Avaya Configuration Guide*, Revision 1.2, March 27, 2020.

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