



Application Notes for Algo 8028 SIP Doorphone Version 2.7.4 with Avaya IP Office Release 11 - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Algo 8028 SIP Doorphone to interoperate with Avaya IP Office. Algo 8028 SIP Doorphone is device that integrates into the Avaya IP Office and enables conversations and remote entry using door release features.

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 for Algo 8028 SIP Doorphone to interoperate with Avaya IP Office. Algo 8028 SIP Doorphone is a SIP-based device that can register with Avaya IP Office as SIP endpoint using UDP protocol.

Algo 8028 SIP Doorphone (hereafter referred as 8028) is outdoor rated IP intercom compatible with premise based and hosted SIP communication servers. By connecting to Avaya IP Office, arriving visitors and guests can be greeted from any telephone or client and allowed entry by a simple key press.

In the compliance testing, Avaya IP Office Server Edition system (IP Office) consists of Avaya IP Office Primary Linux running on Virtualized Environment and a 500V2 Expansion.

2. General Test Approach and Test Results

The feature test cases were performed manually. The focus of this interoperability compliance testing was to verify if the 8028 can register as a SIP endpoint on the IP Office and able to make a call to and from a telephone on the IP Office and able to open the door when the key is pressed on the phone.

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 only (private network side). 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 this Application Note, the interface between Avaya systems and the Algo 8028 did not include use of any specific encryption features as requested by Algo.

2.1. Interoperability Compliance Testing

Compliance testing verified that the 8028 was able to interoperate with the telephones residing on the IP Office system. The following interoperability areas were covered:

- The 8028 can register to IP Office as a SIP endpoint.
- The 8028 can make a call to an endpoint on IP Office and establish a clear speech path.
- Avaya Endpoints on IP Office can call the extension assigned to the 8028 and establish speech path.
- Avaya Endpoints on the IP Office can send required DTMF tones and therefore ensure the remote door release features work successfully.

The serviceability testing focused on verifying the ability of the 8028 to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable to the device.

2.2. Test Results

The objectives outlined in **Section 2.1** were verified. All test cases passed, the following observations were made during the compliance testing:

- A call between the 8028 and Avaya endpoint (H.323, SIP, and digital) cannot be transferred by Avaya endpoint to Avaya SIP endpoint. This feature is currently not supported on Algo 8028.

2.3. Support

Technical support on Algo 8028 SIP Doorphone can be obtained through the following:

- Phone: + 1 604 454 3792
- Web: <http://www.algosolutions.com/support/support.html>
- Email: support@algosolutions.com

3. Reference Configuration

Figure 1 illustrates the test configuration used during the compliance testing between the Avaya IP Office and the 8028. The 8028 communicated with IP Office through Avaya switch with Power over Ethernet (PoE) and registered with Avaya IP Office as SIP endpoint. The PRI T1 trunk was also configured to connect from IP Office to PSTN for test cases off-net via PRI T1 trunk.

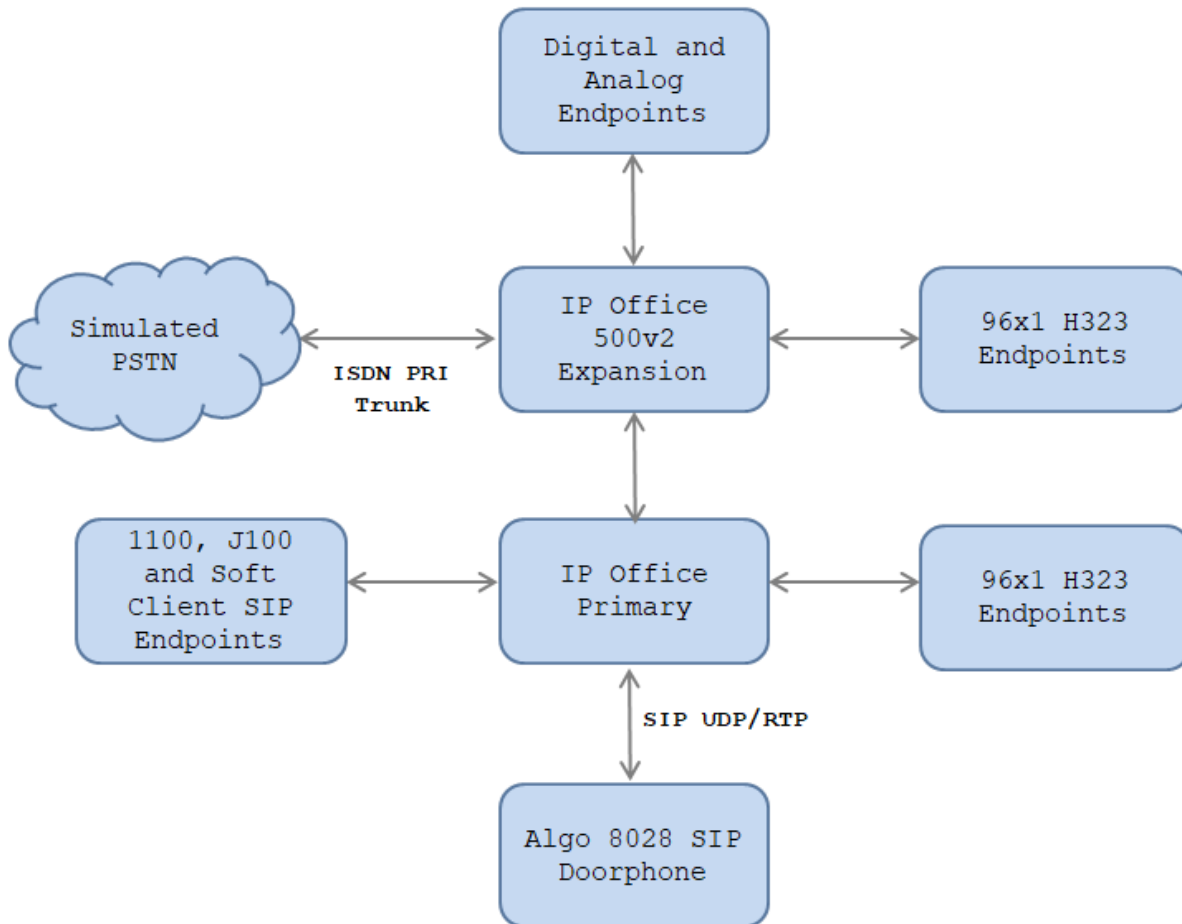


Figure 1: Test Configuration Diagram

The following table indicates the IP addresses that were assigned to the systems in the test configuration diagram:

Description	IP Address
IP Office Primary Server Edition	10.10.97.110
IP Office 500V2 Expansion	10.10.97.230
Avaya SIP and H323 Endpoint	10.33.5.30-10.33.5.36
Algo 8028 SIP Doorphone	10.33.5.50

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office Primary Server Edition running on Virtual Environment	11.0.0.2.0 Build 23
Avaya IP Office 500v2 Expansion	11.0.0.2.0 Build 23
Avaya IP Office DIG DCPx16 V2	11.0.0.2.0 Build 23
Avaya IP Office Manager	11.0.0.2.0 Build 23
Avaya 96x1 Series IP Deskphones (H.323)	Version 6.6604
Avaya 1140E IP Deskphones (SIP)	SIP1140e Ver. 04.04.23.00
Avaya J129 SIP Deskphone	3.0.0.16
Avaya Equinox™ for Windows	3.4.4.45.14
Algo 8028 SIP Doorphone	
Firmware Version	2.7.4
Kernel Version	1.5

Note: Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500v2 and also when deployed with all configurations of IP Office Server Edition.

5. Configure Avaya IP Office

This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify IP Office license
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users

5.1. Verify IP Office License

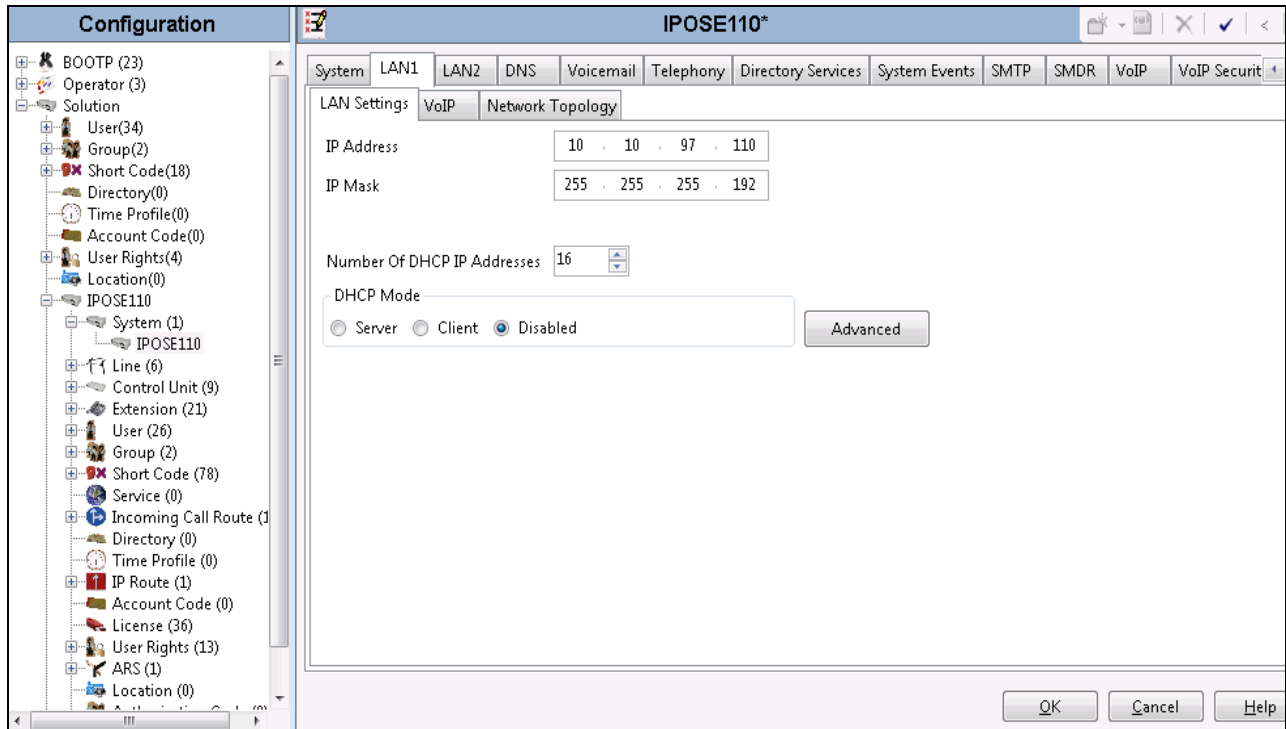
From a PC running the Avaya IP Office Manager application, select **Start** → **Programs** → **IP Office** → **Manager** to launch the Manager application. Select the proper IP Office system, and log in using the appropriate credentials.

The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **License**, the list of license displayed in the right panel. Verify that the **3rd Party IP Endpoints** status is “Valid”.

Feature	Instances	Status	Expiration Date	Source
Power User	384	Valid	Never	PLDS Nodal
Avaya IP endpoints	384	Valid	Never	PLDS Nodal
IP500 Voice Networking Channels	32	Obsolete	Never	PLDS Nodal
SIP Trunk Channels	512	Valid	Never	PLDS Nodal
IP500 Universal PRI (Additional cha...	100	Obsolete	Never	PLDS Nodal
CTI Link Pro	5	Valid	Never	PLDS Nodal
Wave User	16	Obsolete	Never	PLDS Nodal
3rd Party IP Endpoints	384	Valid	Never	PLDS Nodal
Centralized Endpoints	100	Obsolete	Never	PLDS Nodal
Essential Edition	5	Obsolete	Never	PLDS Nodal
R8+ Preferred Edition (VM Pro)	5	Obsolete	Never	PLDS Nodal
Server Edition	5	Valid	Never	PLDS Nodal
UMS Web Services	100	Valid	Never	PLDS Nodal
WebLM Model	1	Obsolete	Never	PLDS Nodal
WebLM Model 9.1	1	Obsolete	Never	PLDS Nodal
Avaya Mac Softphone	100	Valid	Never	PLDS Nodal
SM Trunk Channels	128	Valid	Never	PLDS Nodal
Web Collaboration	64	Valid	Never	PLDS Nodal
Avaya Contact Center Select	5	Valid	Never	PLDS Nodal

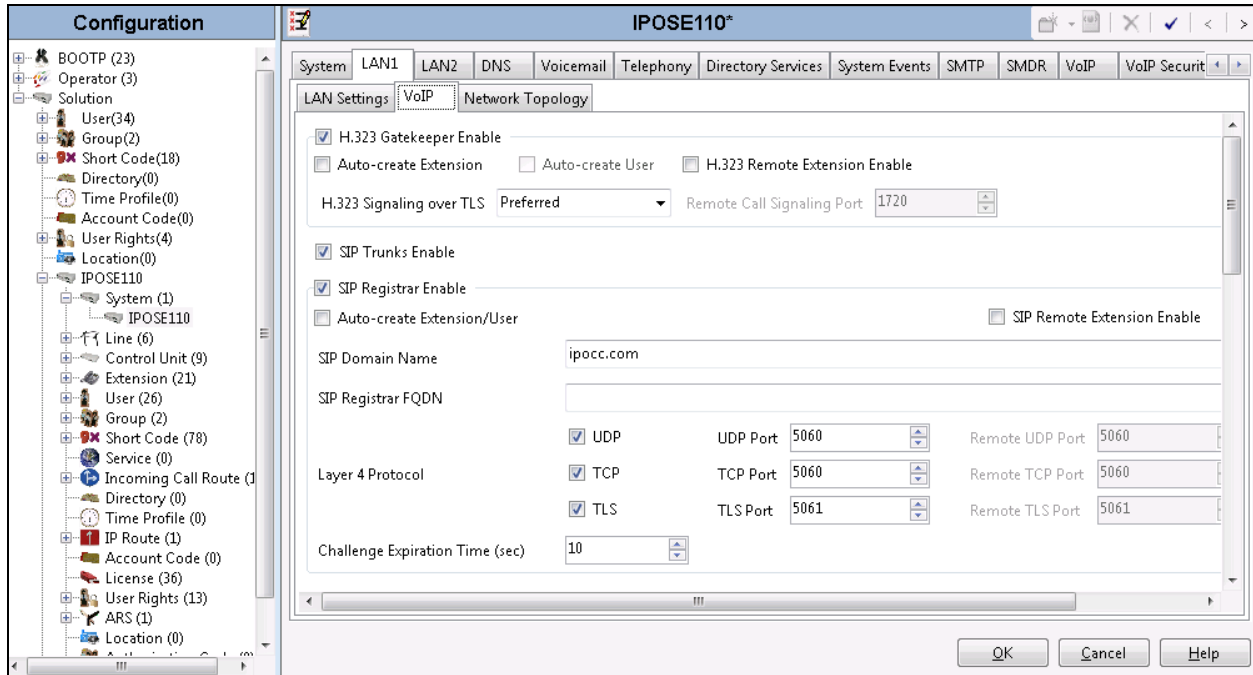
5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select System to display the **IPOSE110** screen in the right pane. Select the LAN1 tab, followed by the LAN Settings sub-tab in the right pane. Make a note of the IP Address, which will be used later to configure Algo. Note that IP Office can support SIP extensions on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.



5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below. Enter a valid sip domain name for SIP endpoints to use for registration with IP Office. In the compliance testing, the sip domain name **ipocc.com** was used so the SIP endpoints used the sip domain name for registration.



5.4. Administer SIP Extensions

From the configuration tree in the left pane, right-click on **Extension** and select **New** → **SIP Extension** from the pop-up list to add a new SIP extension. For **Base Extension**, enter the SIP door extension “**4309**”. Retain the default values in the remaining fields.

The screenshot shows the configuration window for a SIP extension. The left pane displays a tree view of the configuration hierarchy, with 'Extension (21)' selected. The main pane shows the 'Extension' tab with the following fields:

- Extension ID: 11213
- Base Extension: 4309
- Phone Password: (empty)
- Confirm Phone Password: (empty)
- Caller Display Type: On
- Reset Volume After Calls:
- Device Type: Unknown SIP device
- Location: Automatic
- Fallback As Remote Worker: Auto
- Module: 0
- Port: 0
- Disable Speakerphone:

Select the **VoIP** tab, select **Disabled** in the **Media Security** field and retain other fields at default values. Repeat this section to add additional SIP extensions as desired.

The screenshot shows the configuration window for a SIP extension, now on the 'VoIP' tab. The 'Media Security' field is highlighted with a red box and set to 'Disabled'. The 'Codec Selection' field is set to 'System Default'. The 'Unused' list contains 'G.711 ALAW 64K' and the 'Selected' list contains 'G.722 64K', 'G.711 ULAW 64K', and 'G.729(a) 8K CS-ACELP'. Other fields include:

- Reserve License: None
- Fax Transport Support: None
- DTMF Support: RFC2833/RFC4733
- 3rd Party Auto Answer: None
- Media Security: Disabled
- Local Hold Music:
- Re-invite Supported:
- Codec Lockdown:
- Allow Direct Media Path:

5.5. Administer SIP User

From the configuration tree in the left pane; right-click on **User** tab and select **New** from the pop-up list. Enter desired values for **Name**. For **Extension**, enter the 8028 extension from **Section 5.4**. Remember these values as they will be needed to register the 8028 to IP Office. Enter desired values for **Password** and **Confirm Password**.

The screenshot shows the Avaya IP Office configuration interface. The left pane displays a configuration tree with 'User (26)' selected. The main pane shows the configuration for extension 4309. The 'User' tab is active, and the 'Basic User' profile is selected. The configuration fields are as follows:

Field	Value
Name	4309
Password	••••••
Confirm Password	••••••
Unique Identity	
Conference PIN	
Confirm Audio Conference PIN	
Account Status	Enabled
Full Name	SIP 3RD 4309
Extension	4309
Email Address	
Locale	
Priority	5
System Phone Rights	None
Profile	Basic User

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab, and enter a desired **Login Code**. This **Login Code** is needed to register the 8028 to IP Office. Note: if the **Phone Password** in the **Extension** tab in **Section 5.4** is configured, the password in the Phone Password must be used for the registration, in case the **Phone Password** is left blank then the code in the **Login Code** is used for the registration. The difference between Phone Password and Login Code is that the Phone Password can combine letter and number while Login Code only allows number.

The screenshot shows the Avaya IP Office configuration interface with the 'Telephony' tab selected. The 'Supervisor Settings' sub-tab is active. The configuration fields are as follows:

Field	Value	Option
Login Code	•••••	<input type="checkbox"/> Force Login
Confirm Login Code	•••••	
Login Idle Period (sec)		<input type="checkbox"/> Force Account Code
Monitor Group	<None>	<input type="checkbox"/> Force Authorization Code
Coverage Group	<None>	<input type="checkbox"/> Incoming Call Bar
Status on No-Answer	Logged On (No change)	<input type="checkbox"/> Outgoing Call Bar
IPOCC Agent Type	<None>	<input type="checkbox"/> Inhibit Off-Switch Forward/Transfer
Privacy Override Group	<None>	<input type="checkbox"/> Can Intrude
Reset Longest Idle Time		<input checked="" type="checkbox"/> Cannot Be Intruded
	<input checked="" type="radio"/> All Calls	<input type="checkbox"/> Can Trace Calls
	<input type="radio"/> External Incoming	<input type="checkbox"/> Deny Auto Intercom Calls

6. Configure 8028 SIP Doorphone

This section provides the procedures for configuring Algo 8028 SIP Doorphone. The procedures include the following areas.

6.1. Launch Web Interface

Access the 8028 SIP Doorphone web-based interface by using the URL “http://ip-address” in an Internet browser window, where “ip-address” is the IP address of the 8028 SIP Doorphone. The IP address can obtain initially from the call button on the 8028 Door station. The **Welcome to the Algo 8028 SIP Doorphone Control Panel** screen is displayed, as shown below. Log in using the appropriate credentials.

ALGO 8028 SIP Doorphone Control Panel Firmware: 2.7.4

Welcome to the Algo 8028 SIP Doorphone Control Panel

Setting up your SIP Doorphone:

Step 1: Configure your SIP Doorphone
Log in with the default password and use the Basic Settings pages to set up the basic information.

Step 2: Check network settings (Optional)
Use the Network page under the Advanced Settings tab to change network settings. The default setting for the device is to obtain its IP address from a DHCP server. Contact your Network System administrator if you plan to assign a static IP address, Mask, and Gateway to the device.

Step 3: Secure your SIP Doorphone (Optional)
Use the Admin page under the Advanced Settings tab to change the administrator password.
⚠ Changing the password is extremely important if the device is directly connected to a public network.

Step 4: Register your SIP Doorphone (Optional)
Please register your product using the link below:
<http://www.algosolutions.com/8028reg>
Registration ensures your access to the latest upgrades to this product and important service notices.

Login

Password (default: algo)

Status

Device Name	doorphone
Extension	4309
SIP Registration	Successful
Call Status	Idle
Provisioning Status	None Found
Door Relay	Closed
Door Station	Model 3201 Firmware 2
MAC	00:22:EE:03:2B:C7
IP	172.16.99.14
Netmask	255.255.255.0
Date/Time	Sun Jan 2 23:20:04 EST 2000

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6.2. Administer Algo 8028

Select **Basic Settings** → **SIP** from the top menu, to display the screen below. Configure the **SIP Account** section toward the bottom of the screen as desired to match the configuration. Enter the following values for the specified fields, and retain the default values in the remaining fields.

- **SIP Domain (Proxy Server):** Enter the sip domain name of IP Office as configured in **Section 5.2**.
- **Extension:** Enter the SIP base extension as configured in **Section 5.4**.
- **Authentication ID:** Enter the SIP user name as configured in **Section 5.5**.
- **Authentication password:** The SIP extension password in **Section 5.4** or SIP user login code in **Section 5.5**.
- **Dialing Extension:** Enter an extension on the IP Office for dialing out from the call button in the 8028 Door station.

The screenshot displays the '8028 SIP Doorphone Control Panel' interface. At the top, the 'ALGO' logo is on the left, the title '8028 SIP Doorphone Control Panel' is in the center, and 'Firmware: 2.7.4' is on the right. Below the title bar, there are navigation tabs: 'Status', 'Basic Settings' (selected), 'Advanced Settings', 'System', and 'Logout'. Under 'Basic Settings', there are sub-tabs: 'SIP' (selected), 'Audio', and 'Door Relay'. The main content area is titled 'SIP Settings' and contains the following fields:

SIP	
SIP Domain (Proxy Server)	ipocc.com <small>Default port is 5060. To specify a different port, enter PROXY:PORT, e.g. my_proxy.com:5070, or 192.168.1.10:5080.</small>
Extension	4309
Authentication ID	4309
Authentication Password	*****
Dialing Extension	4300 <small>Phone number to be dialed when the call button on the door station is pressed.</small>

At the bottom right of the settings area, there is a green checkmark icon and the text 'Save'. At the very bottom of the page, the copyright notice reads: '© Copyright 2016 Algo Communication Products Ltd.'

Navigate to **Advanced Settings** → **Advanced SIP**, the **Advanced SIP Settings** is displayed.
Enter the IP address of LAN1 IP Office in the **Outbound Proxy** and keep other values at default.

The screenshot displays the ALGO 8028 SIP Doorphone Control Panel interface. The top navigation bar includes the ALGO logo, the title "8028 SIP Doorphone Control Panel", and the firmware version "Firmware: 2.7.4". Below the navigation bar, there are tabs for "Status", "Basic Settings", "Advanced Settings" (which is selected), "System", and "Logout". Underneath, a secondary menu contains "Network", "Admin", "Time", "Provisioning", "Call", "Auxiliary I/O", "Security", and "Advanced SIP" (which is also selected). The main content area is titled "Advanced SIP Settings" and is divided into two sections: "SIP" and "Server Redundancy".

SIP Settings:

- Outbound Proxy:
- STUN Server:
- Register/Subscribe Period (seconds):
- Keep-alive Method: None Double CRLF

Server Redundancy Settings:

- Server Redundancy Feature (Multiple SIP Server Support): Enabled Disabled

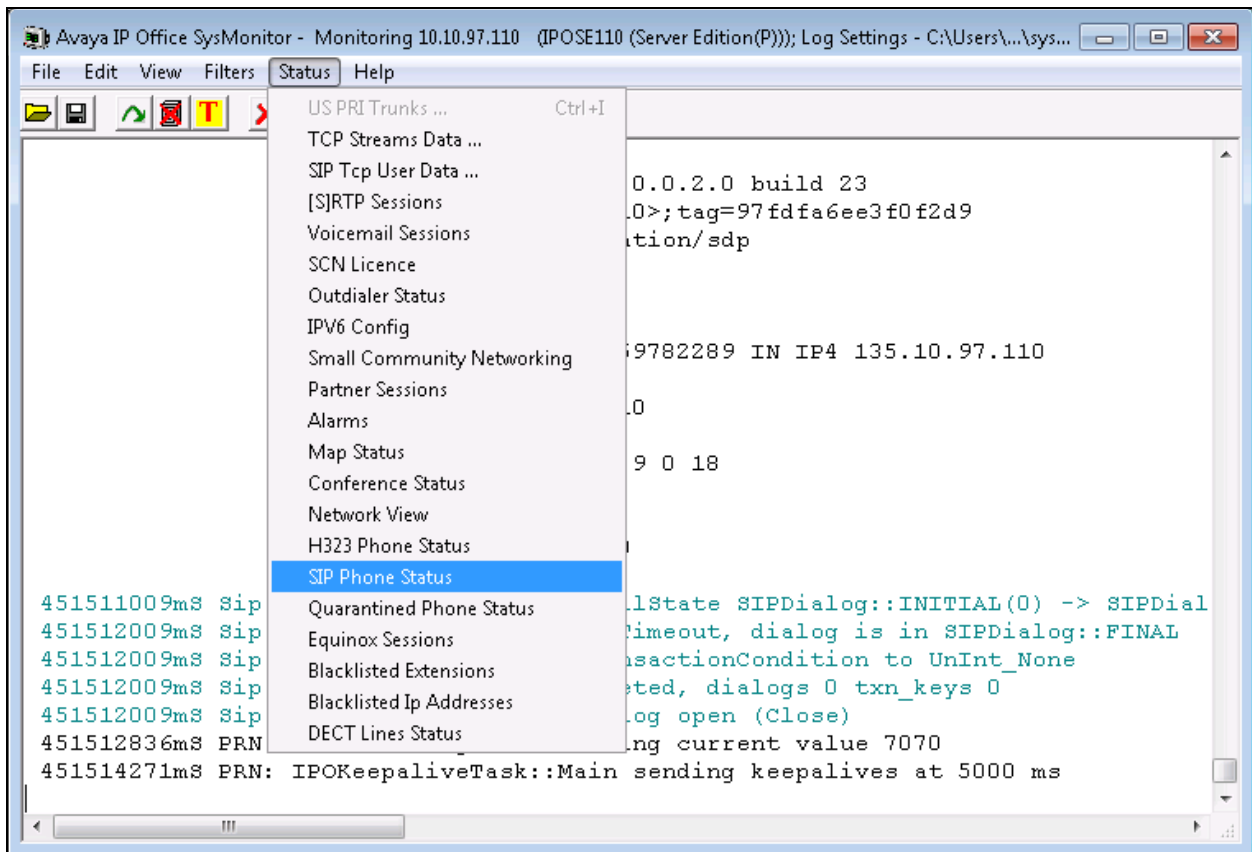
A "Save" button with a green checkmark is located at the bottom right of the settings area. At the bottom of the page, the copyright notice reads: "© Copyright 2016 Algo Communication Products Ltd."

7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and Algo 8028 SIP Doorphone.

7.1. Verify Avaya IP Office

From a PC running the Avaya IP Office Monitor application, select **Start → Programs → IP Office → System Monitor** to launch the application. The **Avaya IP Office SysMonitor** screen is displayed, as shown below. Select **Status → SIP Phone Status** from the top menu.



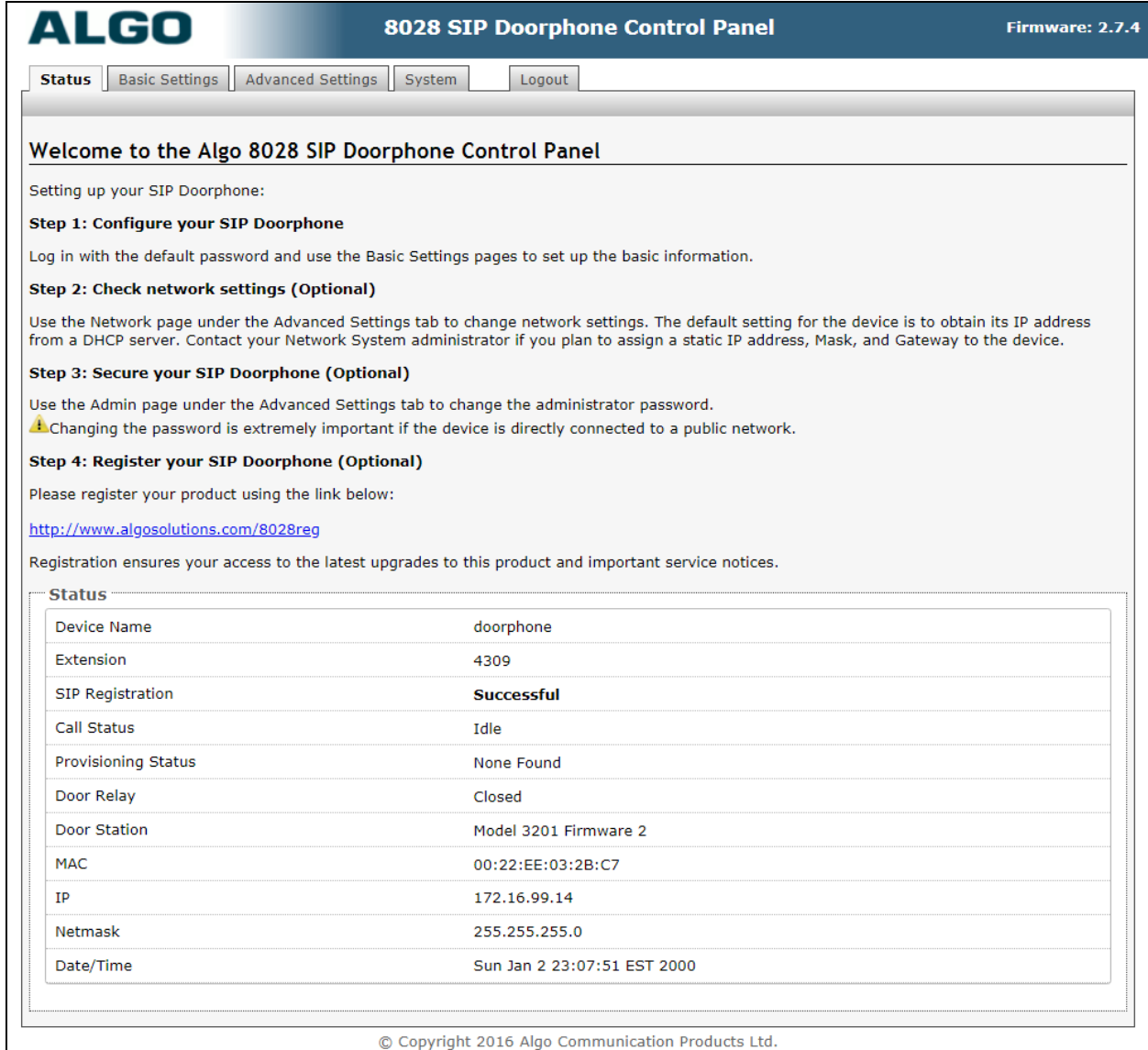
The **SIPPhoneStatus** screen is displayed and select the **Registered** radio button in the **Display Options** area it displays all SIP users currently register to IP Office. Verify that there is an entry for the **Algo-8028/2.7.4** in the list.

The screenshot shows the SIPPhoneStatus application window. At the top, it indicates 'Total Configured: 15' and 'Total Registered: 7'. A progress bar for 'Registered Status' is shown with 7 blue bars. Below this is a table with columns: Extn Num, User Num, Phone Type, Security, Behind..., IP Address, Private Addr..., Transport, User Agent, Licensed, and SI. The row for '4309' is highlighted in blue, showing 'SIP' phone type, 'disable' security, and 'Algo-8028/2.7.4 Kernel/r5' user agent. At the bottom, the 'Display Options' section has 'Registered' selected with a radio button. Other options include 'Show All' and 'UnRegistered'. Buttons for 'Save Page', 'Reset Phones', 'Reregister Phones', and 'Cancel' are also present.

Extn Num	User Num	Phone Type	Security	Behind...	IP Address	Private Addr...	Transport	User Agent	Licensed	SI
4303	4303	J179 SIP	best effort		172.16.99.15		TLS	Avaya J179 IP Phone 1.5.0.0...	Avaya IP	RI
4304	4304	1140E_SIP	best effort		10.33.5.51		TLS	Avaya IP Phone 1140E (SIP1...	Avaya IP	RI
4306	4306	1140E_SIP	best effort		172.16.99.3		TCP	Avaya IP Phone 1140E (SIP1...	Avaya IP	RI
4307	4307	SIP	best effort		172.16.99.12		UDP	Algo-8180G2/1.7	3rd Party IP	R
4308	4308	SIP	disable		172.16.99.12		UDP	Algo-8180G2/1.7	3rd Party IP	R
4309	4309	SIP	disable		172.16.99.14		UDP	Algo-8028/2.7.4 Kernel/r5	3rd Party IP	RI
\$1.4307	4307	EQNX_D...	best effort		172.16.99.100		TLS	Avaya Communicator/3.0 (3.4...	Avaya Softph...	RI

7.2. Verify Algo 8028

From the 8028 web-based interface, select **Status** from the top menu. Verify that **SIP Registration** displays “Successful” in the **SIP Registration** as shown below.



The screenshot shows the 'Status' page of the Algo 8028 SIP Doorphone Control Panel. The page title is '8028 SIP Doorphone Control Panel' with 'Firmware: 2.7.4' in the top right. The navigation menu includes 'Status', 'Basic Settings', 'Advanced Settings', 'System', and 'Logout'. The main content area is titled 'Welcome to the Algo 8028 SIP Doorphone Control Panel' and contains instructions for setting up the device, including steps for configuring SIP, network settings, and registration. A table titled 'Status' provides the following information:

Status	
Device Name	doorphone
Extension	4309
SIP Registration	Successful
Call Status	Idle
Provisioning Status	None Found
Door Relay	Closed
Door Station	Model 3201 Firmware 2
MAC	00:22:EE:03:2B:C7
IP	172.16.99.14
Netmask	255.255.255.0
Date/Time	Sun Jan 2 23:07:51 EST 2000

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The following tests were conducted to verify the solution between the 8028 and IP Office.

- Verify that when the call button on the 8028 is pressed, the endpoint on the IP Office rings and a clear speech path is established.
- Verify that the solution works with different Avaya endpoints (e.g. digital, analog, IP etc) and that DTMF tones generated from these different endpoints are able to unlock the door release.
- Verify that the 8028 goes into an idle state when the call is completed.
- Verify that the 8028 re-register without issues if the Ethernet cable is unplugged and plugged back in.

8. Conclusion

These Application Notes describe the procedures required to configure Algo 8028 SIP Doorphone to interoperate with Avaya IP Office Server Edition using as SIP 3rd endpoint. All of the executed test cases have passed and met the objectives outlined in **Section 2.1**, with some observations outlined in **Section 2.2**.

9. Additional References

This section references the documentation relevant to these Application Notes. Product documentation for Avaya IP Office, including the following, is available at:

<http://support.avaya.com/>

- [1] *Avaya IP Office Platform Solution Description*, Release 11.0, May 2018.
- [2] *Avaya IP Office Platform Feature Description*, Release 11.0, May 2018.
- [3] *IP Office Platform 11.0 Deploying Avaya IP Office Essential Edition*, Document Number 15-601042, Issue 33g, 20 May 2018.
- [4] *Administering Avaya IP Office Platform with Manager*, Release 11.0, May 2018.
- [5] *IP Office Platform 10.1 Using Avaya IP Office Platform System Status*, Document 15-601758, Issue 13a, 05 April, 2018.
- [6] *IP Office Platform 11.0 Using IP Office System Monitor*, Document 15-601019, Issue 09b, 10 May, 2018.

Additional Avaya IP Office documentation can be found at:

<http://marketingtools.avaya.com/knowledgebase/>

Product documentation for the Algo 8028 SIP Doorphone products may be found at:

<http://www.algosolutions.com/products/doorphones-security/8028-sip-doorphone.html>

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