



Avaya Solution & Interoperability Test Lab

Application Notes for Aiphone IX Series Audio Door Stations (IX-SPMIC) and Avaya IP Office™ – Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Aiphone IX Series Audio Door Stations (IX-SPMIC) which were compliance tested with Avaya IP Office™.

The overall objective of the interoperability compliance testing was to verify Aiphone IX Series Audio Door Stations (IX-SPMIC) functionalities in an environment comprised of Avaya IP Office™ and various Avaya endpoints. Aiphone IX Series Audio Door Stations are SIP based door phones.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any 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 Aiphone IX Series Audio Door Stations (IX-SPMIC) to interoperate with Avaya IP Office (IP Office). During the compliance testing, Aiphone IX-SPMIC was used.

The Aiphone IX Series Audio Door Stations (IX-SPMIC) are part of Aiphone IX Series 2 Door Stations. The Audio Door Stations, IX-SPMIC, act as SIP phones when connected to IP Office. Stations come in both surface mount and flush mount varieties. All door stations have dry contacts that can be used to release doors when activated by another intercom or phone. The dry contacts can also be used to trigger external signaling devices, such as strobes.

Calls from Aiphone IX-SPMIC are originated and terminated via a URL. Aiphone IX-SPMIC cannot receive calls.

During the compliance test, Avaya IP Office Server Edition was used as a primary system and Avaya IP Office 500V2 as an expansion system. Aiphone IX-SPMIC registered as a 3rd party SIP phone using UDP to the Avaya IP Office Server Edition.

2. General Test Approach and Test Results

The focus of this interoperability compliance testing was to verify that the Aiphone IX-SPMIC can register as a SIP endpoint on IP Office, and is able to originate audio calls to the IP Office system.

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 these DevConnect Application Notes 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 Aiphone did not utilize secure capabilities.

2.1. Interoperability Compliance Testing

The general test approach was to place calls to and from, Aiphone IX-SPMIC, and exercise basic telephone operations. The main objectives were to verify the following:

- Registration
- Calls to Avaya SIP Audio endpoints
- Calls to Avaya H.323 Audio endpoints
- Calls to Avaya Digital & Analog endpoints
- Calls to PSTN via SIP Trunks
- Call termination (origination/destination)
- Serviceability

2.2. Test Results

The test objectives were verified, and the features tested worked as expected.

2.3. Support

For technical support on Aiphone IX-SPMIC, please contact Aiphone via the following:

- Web: <https://www.aiphone.co.jp/>
- Phone: 052-228-9961

3. Reference Configuration

Figure 1 illustrates a sample configuration consisting of Avaya IP Office components and Aiphone IX-SPMIC.

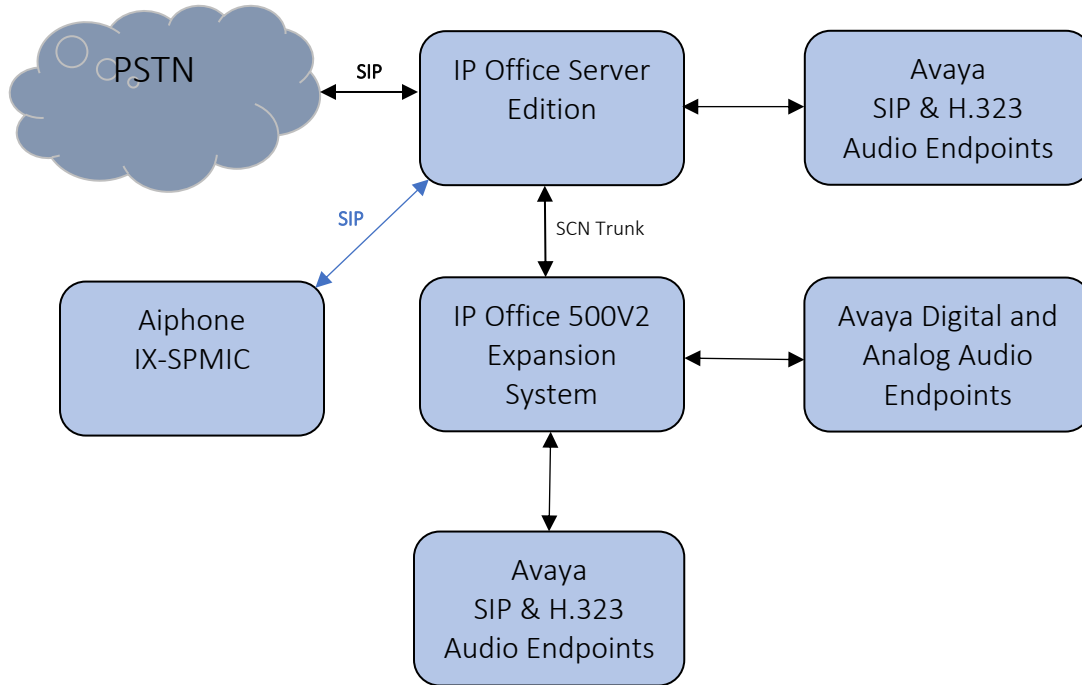


Figure 1: Test Configuration of Aiphone IX-SPMIC with Avaya IP Office

4. Equipment and Software Validated

The following equipment and software were used for the test configuration.

Equipment	Software/Firmware
Avaya IP Office Server Edition	11.0.4.0.0 build 74
Avaya IP Office 500V2	11.0.4.0.0 build 74
Avaya IP Office Manager	11.0.4.0.0 build 74
Avaya 9600 Series H.323 IP Deskphones	6.8002
Avaya J129 SIP Phone	4.0.0.0.21
Avaya IX Workspace	3.7.0.102.3
Avaya H175 Collaboration Station	1.0.2.3
Avaya Vantage K175 Phone	3.5.0
Avaya 9504 Digital Phone	0.55
Avaya 6210 Analogue Telephone	-
Aiphone IX Series Audio Door Station IX-SPMIC	3.00.

Note: Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 and also when deployed with IP Office Server Edition in all configurations.

5. Configure Avaya IP Office™

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

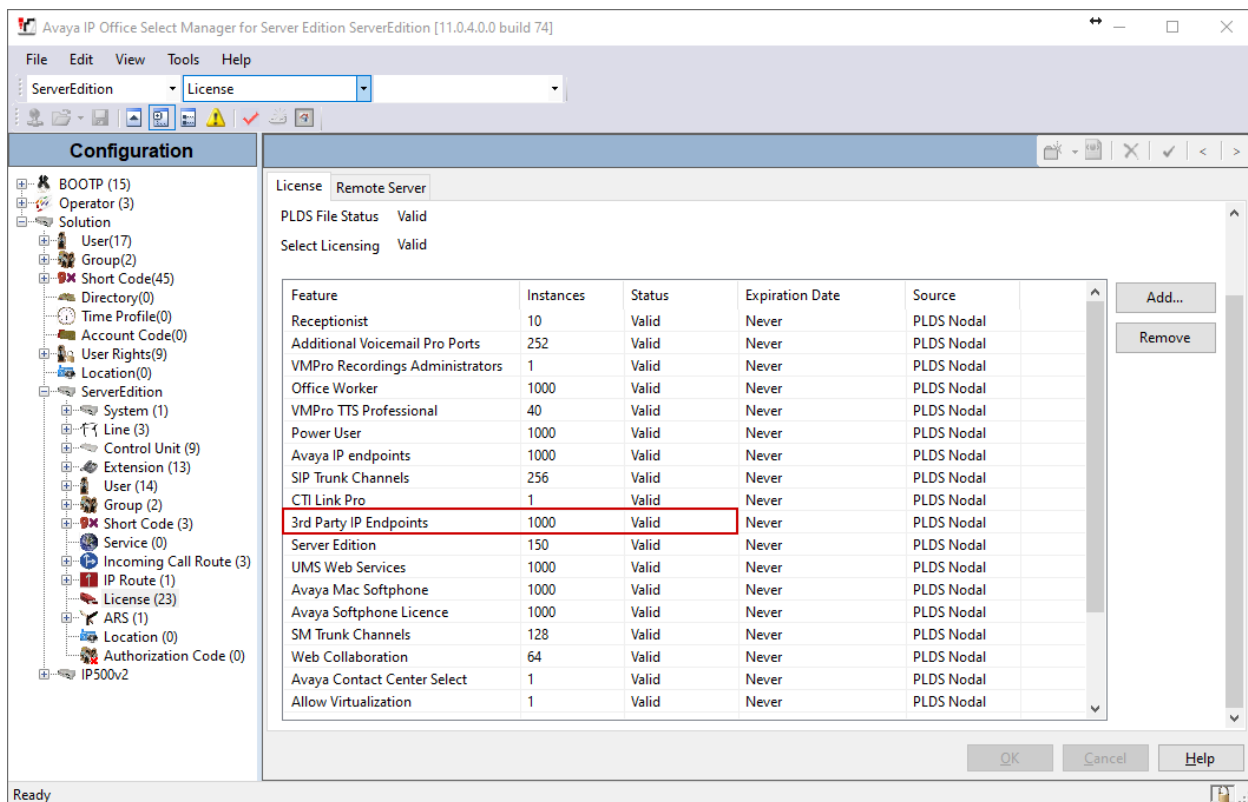
- Verify IP Office license
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users

These steps are performed from the Avaya IP Office Manager.

5.1. Verify IP Office License

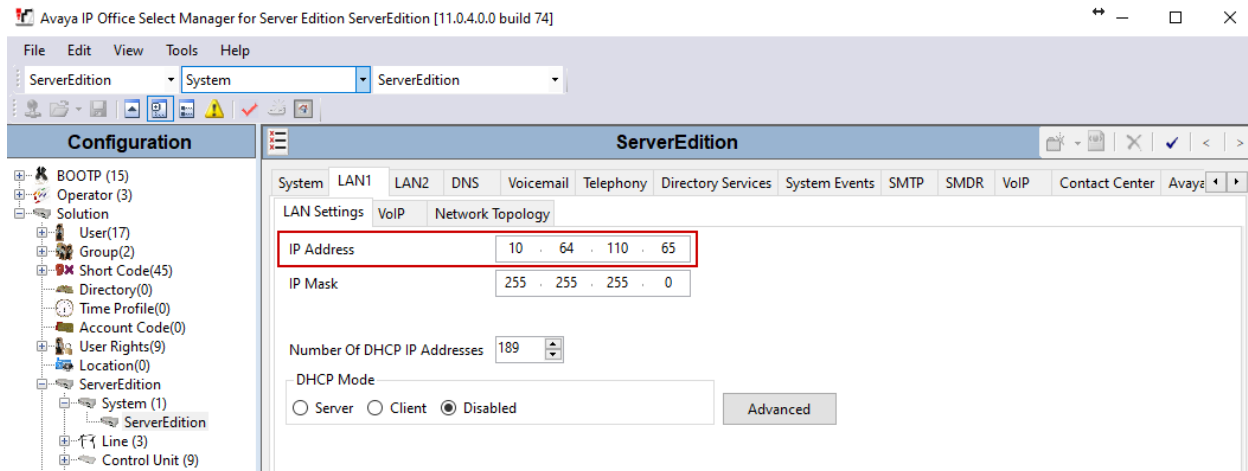
From a PC running the Avaya IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the Manager application. Select the proper IP Office system if there are more than one IP Office system, and log in with the appropriate credentials.

The Avaya IP Office Manager screen is displayed. From the configuration tree in the left pane, select **License → 3rd Party IP Endpoints** to display available licenses in the right pane. Verify that the License Status field is set to **Valid** for **3rd Party IP Endpoints** feature.



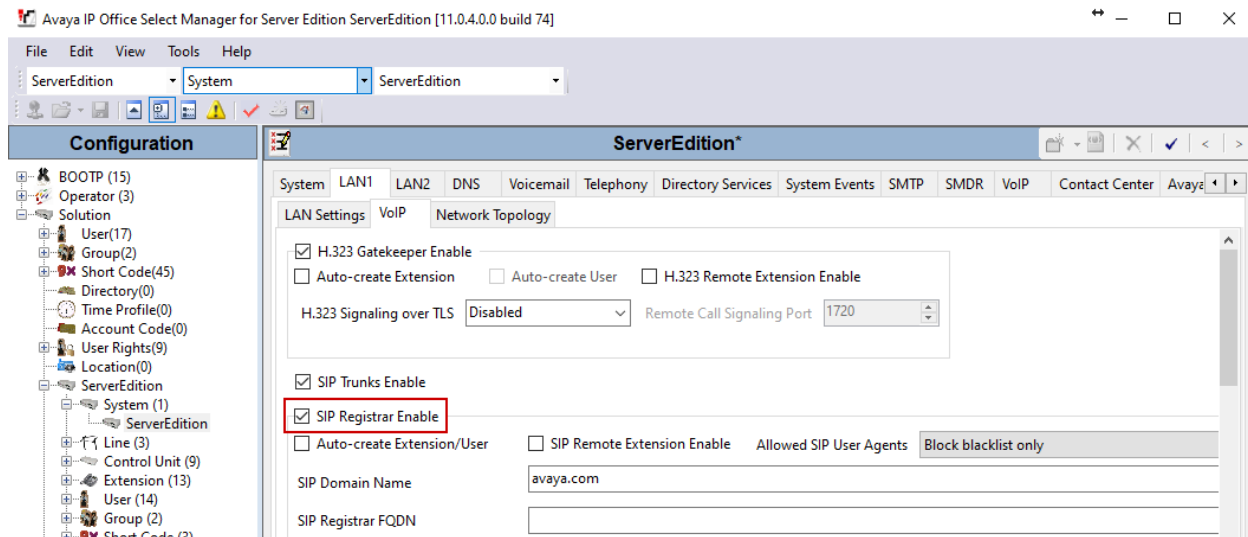
5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the System 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 Aiphone IX-SPMIC.



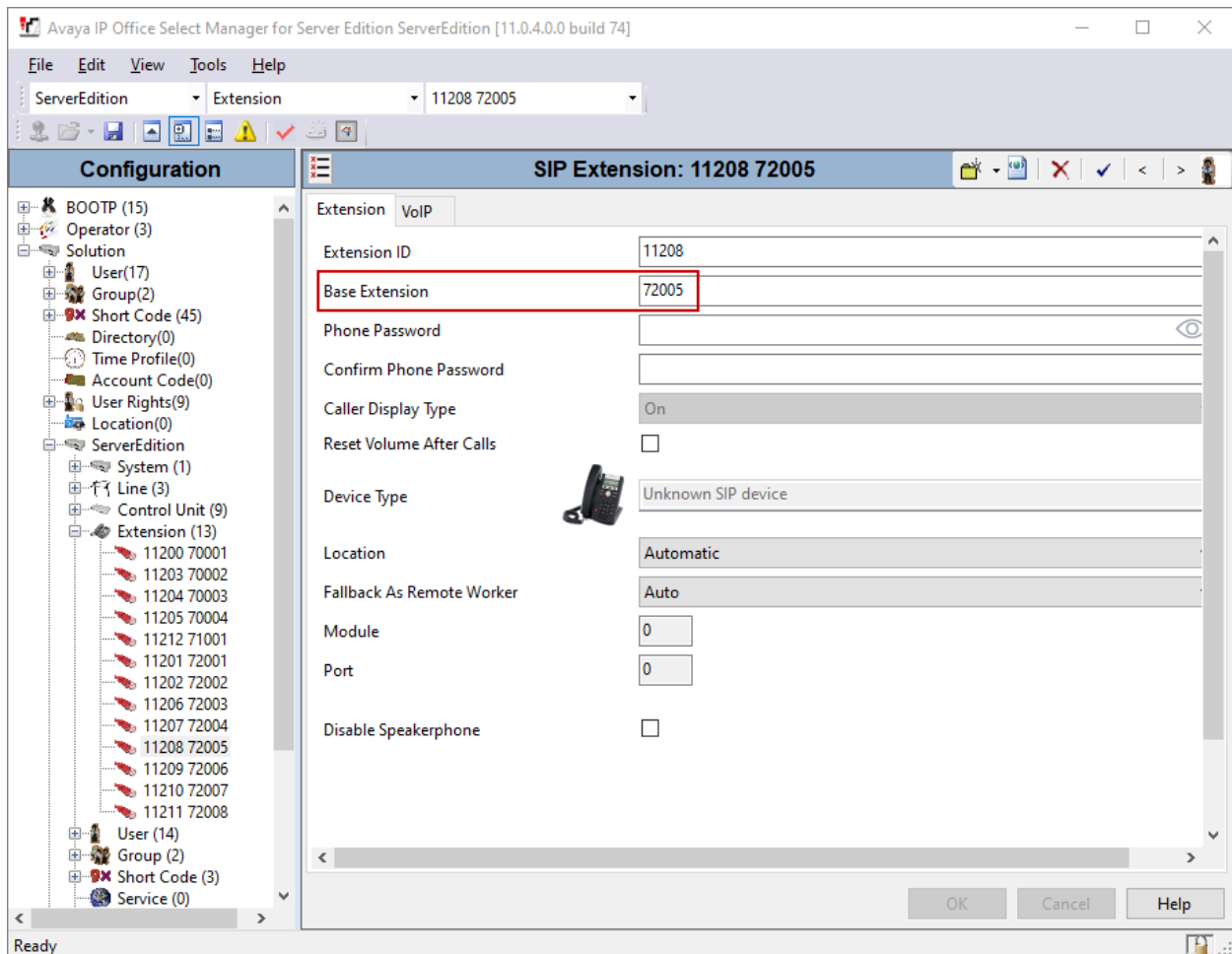
5.3. Administer SIP Registrar

Continuing from above, select the **VoIP** sub-tab. Ensure that **SIP Registrar Enable** is checked, as shown below.



5.4. Administer SIP Extensions

To create a new SIP Extension, from the configuration tree in the left pane, right-click on **Extension**, and select **New → SIP Extension** from the pop-up list (not shown). Enter desired digits for the **Base Extension** field. This is the Extension that will be used for Aiphone IX-SPMIC to log in.



To create a new SIP User, from the configuration tree in left pane, right-click on **User**, and select **New** from the pop-up list (not shown). Enter desired values for the **Name** field. For the **Extension** field, enter the SIP extension created in **Section 5.4**.

Avaya IP Office Select Manager for Server Edition ServerEdition [11.0.4.0.0 build 74]

File Edit View Tools Help

ServerEdition User 72005 APIXSPMIC

Configuration

- BOOTP (15)
- Operator (3)
- Solution
 - User(17)
 - Group(2)
 - Short Code (45)
 - Directory(0)
 - Time Profile(0)
 - Account Code(0)
 - User Rights(9)
 - Location(0)
 - ServerEdition
 - System (1)
 - Line (3)
 - Control Unit (9)
 - Extension (13)
 - User (14)
 - NoUser
 - 72002 APIXDV
 - 72003 APIXEA
 - 72004 APIXFA
 - 72007 APIXRS
 - 72005 APIXSPMIC
 - 72008 APIXSS2G
 - 72006 APIXSSA
 - 72001 APMV7
 - 71001 H323User1
 - 70001 SIPUser1
 - 70002 SIPUser2
 - 70003 SIPUser3
 - 70004 SIPUser4
 - Group (2)
 - Short Code (3)

APIXSPMIC: 72005

User Voicemail DND Short Codes Source Numbers Telephony Forwarding Dial In Voice Recording Bulk

Name APIXSPMIC

Password

Confirm Password

Unique Identity

Conference PIN

Confirm Audio

Conference PIN

Account Status Enabled

Full Name

Extension 72005

Email Address

Locale

Priority 5

System Phone Rights None

Profile Basic User

☐ Receptionist

☐ Enable Softphone

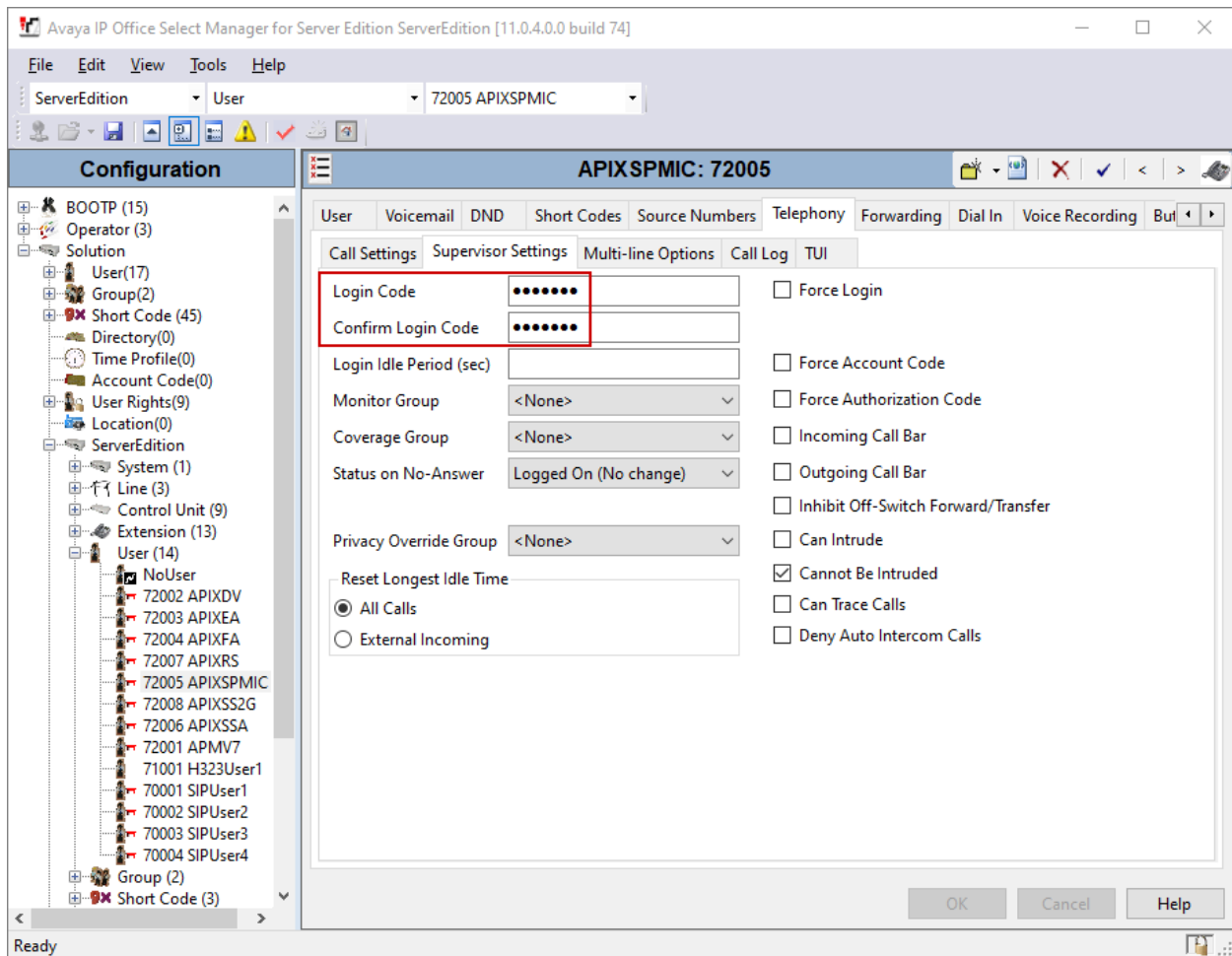
☐ Enable one-X Portal Services

☐ Enable one-X Telephony

OK Cancel Help

Ready

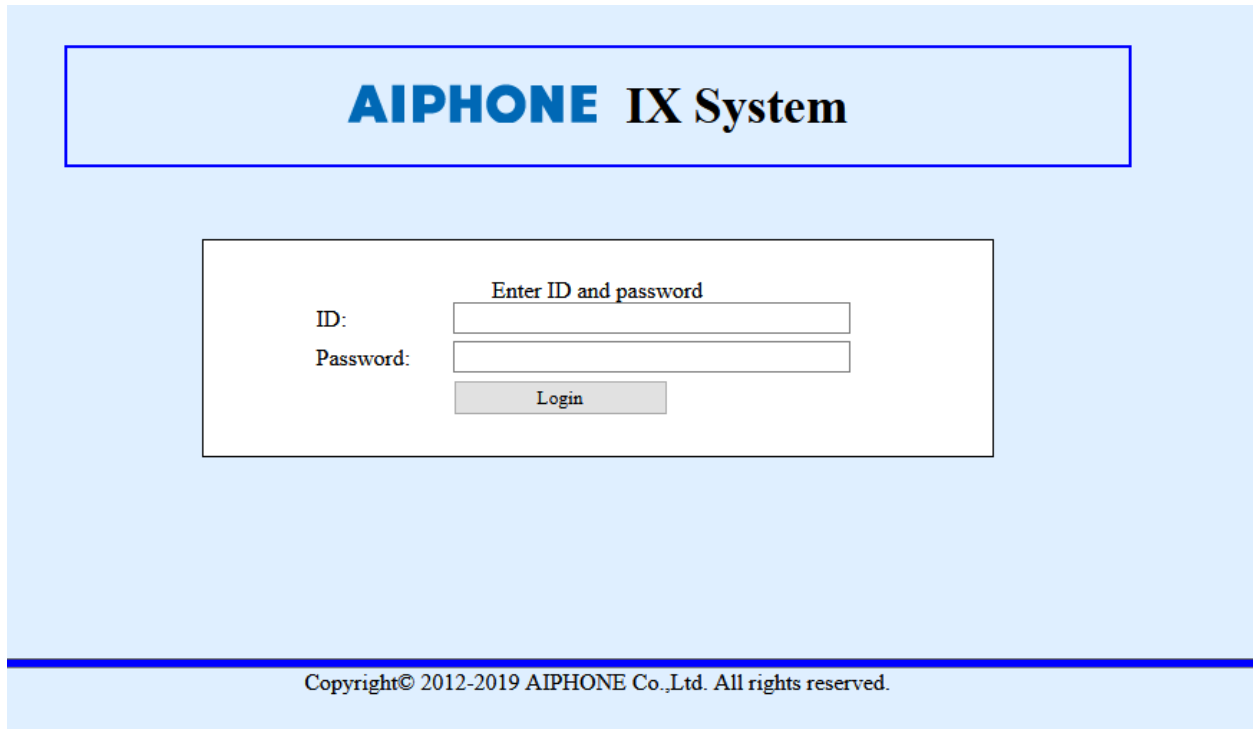
Select the **Supervisor Settings** tab, and enter a desired **Login Code** and **Confirm Login Code**. This code will be used as a password for Aiphone IX-SPMIC.



6. Configure Aiphone IX Series Audio Door Station

This section provides steps to configure Aiphone IX-SPMIC.

To configure Aiphone IX-SPMIC, using a web browser, navigate to <https://<IP Address of IX-SPMIC>/webset.cgi?login> and log in using appropriate credentials.



AIPHONE IX System

Enter ID and password

ID:

Password:

Login

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AIPHONE
 Category: Audio Sub Station

IX
 Station Type: IX-SPMIC

Update

Station Information
[Identification](#)
[ID and Password](#)
[Language](#)
[Time](#)
[Expanded System](#)

Network Settings
[IP Address](#)
[DNS](#)
[SIP](#)
[Audio](#)

Station Information

◆ Required Setting

◆ **Identification**

| | | |
|----------|---------------------------------------|------------------------------|
| Number ◆ | <input type="text" value="72005"/> | 3-5 digits |
| Name | <input type="text" value="IX-SPMIC"/> | 1-24 alphanumeric characters |
| Location | <input type="text"/> | 1-24 alphanumeric characters |

- **SIP Signaling Port:** Set to **5060**.
- **User Agent:** Type in a desired value.
- **ID:** SIP Extension number from **Section 5.4**.
- **Password:** SIP Extension password from **Section 5.4**.
- **IPv4 Address:** LAN IP Address of IP Office from **Section 5.2**.
- **Port:** Set to **5060**.

AIPHONE

IX System Setting

Category: Audio Sub StationStation Type: IX-SPMIC

Update

Station Information

Identification
ID and Password
Language
Time
Expanded System

Network Settings

IP Address
DNS
SIP
Audio
Packet Priority
NTP

System Information

Custom Sound Registry

Network Settings

SIP

- SIP Connections

| | | |
|--------------------|----------|------------------------------|
| SIP Signaling Port | 5060 | 1-65535 |
| User Agent | IX-SPMIC | 1-36 alphanumeric characters |
- SIP Server
 - Primary Server

| | | |
|--------------|--------------|--------------------------------------------------------|
| ID | 72005 | 1-24 alphanumeric characters |
| Password | •••••• | 1-24 alphanumeric characters |
| IPv4 Address | 10.64.110.65 | 1.0.0.1-223.255.255.254 or hostname(1-64 alphanumeric) |
| IPv6 Address | | ::FF:0:FEFF:FFFF:FFFF:FFFF:FFFF:FFFF:FF |
| Port | 5060 | 1-65535 |

From the left, select **Call Settings** → **Station Settings (for Door)** and configure as follows:
The numbers configured here will be dialed when the button on the IX-SPMIC is pressed.

- **Station Number:** Type in an extension number on IP Office that will be called for a given line.
- **IPv4:** Type in the LAN IP Address from **Section 5.2**.
- **Station Type:** Set to **VoIP Phone**.

Select **Update** to save changes.

AIPHONE IX System Setting
Category: Audio Sub Station Station Type: IX-SPMIC

Call Settings

•Called Stations (for Door)

Option Input #:

Station Number must be 3-5 digits. (3-32 digits for VoIP Phone)
IPv4 must be 1.0.0.1-223.255.255.254 or hostname(1-64 alphanumeric characters).
IPv6 must be ::FF:0:FEFF:FFFF:FFFF:FFFF:FFFF:FFFF or hostname(1-64 alphanumeric characters).
Enter SIP Primary Server IP address for VoIP Phone, set only one VoIP Phone per call group.
Station Type must be "VoIP Phone" when calling via SIP server.
U = Unicast, M = Multicast

| # | Station Number | IPv4 Address | IPv6 Address | Station Type |
|---|----------------|--------------|--------------|--------------|
| 1 | 70001 | 10.64.110.65 | | VoIP Phone |
| 2 | | | | |
| 3 | | | | |

From the left, select **Function Settings** → **CGI** and select the **Enable** radio button for **CGI Functionality**. This enables Aiphone IX-SPMIC to place calls via a CGI URL.

AIPHONE IX System Setting
Category: Audio Sub Station Station Type: IX-SPMIC

Function Settings

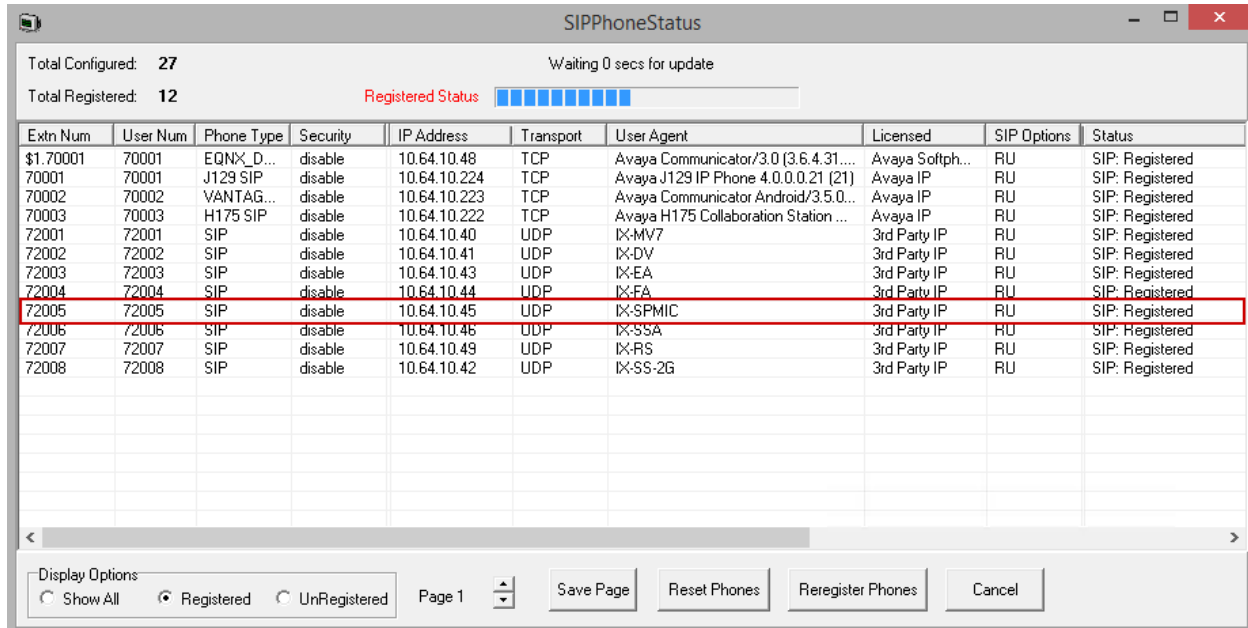
•CGI

CGI Functionality ☒ Enable ☐ Disable

7. Verification Steps

The following steps may be used to verify the configuration:

- From a PC running the Avaya IP Office Monitor application. The **Avaya IP Office SysMonitor** screen is displayed (not shown). Select **Status** → **SIP Phone Status** from the top menu. Verify the SIP extension added from **Section 5.4** is displayed and the Status is **SIP: Registered**.



The screenshot shows the SIPPhoneStatus application window. At the top, it displays 'Total Configured: 27' and 'Total Registered: 12'. A progress bar for 'Registered Status' is shown with 12 blue bars. Below this is a table with columns: Extn Num, User Num, Phone Type, Security, IP Address, Transport, User Agent, Licensed, SIP Options, and Status. The table lists 12 SIP phones, all with a status of 'SIP: Registered'. The row for extension 72005 is highlighted with a red border. At the bottom, there are 'Display Options' (Show All, Registered, UnRegistered), 'Page 1', and buttons for 'Save Page', 'Reset Phones', 'Reregister Phones', and 'Cancel'.

| Extn Num | User Num | Phone Type | Security | IP Address | Transport | User Agent | Licensed | SIP Options | Status |
|-----------|----------|------------|----------|--------------|-----------|--------------------------------------|-----------------|-------------|-----------------|
| \$1.70001 | 70001 | EQN_X_D... | disable | 10.64.10.48 | TCP | Avaya Communicator/3.0 (3.6.4.31.... | Avaya Softph... | RU | SIP: Registered |
| 70001 | 70001 | J129 SIP | disable | 10.64.10.224 | TCP | Avaya J129 IP Phone 4.0.0.0.21 (21) | Avaya IP | RU | SIP: Registered |
| 70002 | 70002 | VANTAG... | disable | 10.64.10.223 | TCP | Avaya Communicator Android/3.5.0... | Avaya IP | RU | SIP: Registered |
| 70003 | 70003 | H175 SIP | disable | 10.64.10.222 | TCP | Avaya H175 Collaboration Station ... | Avaya IP | RU | SIP: Registered |
| 72001 | 72001 | SIP | disable | 10.64.10.40 | UDP | IX-MV7 | 3rd Party IP | RU | SIP: Registered |
| 72002 | 72002 | SIP | disable | 10.64.10.41 | UDP | IX-DV | 3rd Party IP | RU | SIP: Registered |
| 72003 | 72003 | SIP | disable | 10.64.10.43 | UDP | IX-EA | 3rd Party IP | RU | SIP: Registered |
| 72004 | 72004 | SIP | disable | 10.64.10.44 | UDP | IX-EA | 3rd Party IP | RU | SIP: Registered |
| 72005 | 72005 | SIP | disable | 10.64.10.45 | UDP | IX-SPMIC | 3rd Party IP | RU | SIP: Registered |
| 72006 | 72006 | SIP | disable | 10.64.10.46 | UDP | IX-SSA | 3rd Party IP | RU | SIP: Registered |
| 72007 | 72007 | SIP | disable | 10.64.10.49 | UDP | IX-RS | 3rd Party IP | RU | SIP: Registered |
| 72008 | 72008 | SIP | disable | 10.64.10.42 | UDP | IX-SS-2G | 3rd Party IP | RU | SIP: Registered |

- Place a call from Aiphone IX-SPMIC to an Avaya endpoint. The state of the call be viewed on a PC running the **Avaya IP Office System Status** application. Select **Extensions** → Aiphone IX-SPMIC extension.

Calls be placed by using the following URL:

<https://<IP Address of IX-SPMIC>/CallUP.cgi?ID=admin&PW=admin>

Once calls are connected, calls can be terminated by using the following URL:

<https://<IP Address of IX-SPMIC>/CallTalkEnd.cgi?ID=admin&PW=admin>

The screenshot shows the Avaya IP Office System Status application window. The title bar indicates the server edition (10.64.110.65) and the IP Office Linux PC version (11.0.4.0.0 build 74). The application has a menu bar (Help, Snapshot, LogOff, Exit, About) and a sidebar with a tree view of system components. The main pane displays the 'Extension Status' for extension 72005.

Extension Status

| | | | |
|---------------------------------------|-----------------------|-----------------------|--------------|
| Extension Number: | 72005 | | |
| IP address: | 10.64.10.45 | | |
| Standard Location: | None | | |
| Registrar: | Primary | | |
| Telephone Type: | Unknown SIP Device | | |
| User-Agent SIP header: | IX-SPMIC | | |
| Media Stream: | RTP | | |
| Layer 4 Protocol: | UDP | | |
| Current User Extension Number: | 72005 | | |
| Current User Name: | APIXSPMIC | | |
| Forwarding: | Off | | |
| Twinning: | Off | | |
| Do Not Disturb: | Off | | |
| Message Waiting: | Off | | |
| Phone Manager Type: | None | | |
| SIP Device Features: | REFER,UPDATE | | |
| License Reserved: | No | | |
| Last Date and Time License Allocated: | 11/14/2019 2:54:41 AM | | |
| DTMF Required: | No | | |
| Packet Loss Fraction: | | Connection Type: | Direct Media |
| Jitter: | | Codec: | G711 Mu |
| Round Trip Delay: | | Remote Media Address: | 10.64.10.224 |

| Call Ref | Current State | Time in State | Calling Number or Called Number | Direction | Other Party on Call |
|----------|---------------|---------------|---------------------------------|-----------|----------------------|
| 495 | Connected | 00:00:16 | | Outgoing | Extn 70001, SIPUser1 |

At the bottom of the main pane, there are buttons for Trace, Trace All, Pause, Ping, Call Details, Print..., and Save As... The status bar at the bottom right shows the time (11:37:03 PM) and the system status (Online).

8. Conclusion

Aiphone IX-SPMIC was compliance tested with Avaya IP Office. Aiphone IX-SPMIC functioned properly for feature and serviceability.

9. Additional References

Avaya IP Office product documentation can be found at: <https://ipofficekb.avaya.com/>

Documentation related to Aiphone IX-SPMIC can be found at:
<https://www.aiphone.co.jp/products/business/ix/>

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