



Avaya Solution & Interoperability Test Lab

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

Abstract

These Application Notes describe the procedures for configuring Aiphone IX Series Audio Door Stations (IX-BA) 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-BA) 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-BA) to interoperate with Avaya IP Office (IP Office). During the compliance testing, Aiphone IX-BA was used.

The Aiphone IX Series Audio Door Stations (IX-BA) are part of Aiphone IX Series 1 Door Stations. The Audio Door Stations, IX-BA, act as SIP phones when connected to IP Office. Stations come in both surface mount and flush mount varieties. The Audio Door 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.

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-BA 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-BA can register as a SIP endpoint on IP Office, and is able to originate and receive audio calls to and from 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-BA, 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-BA, 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-BA.

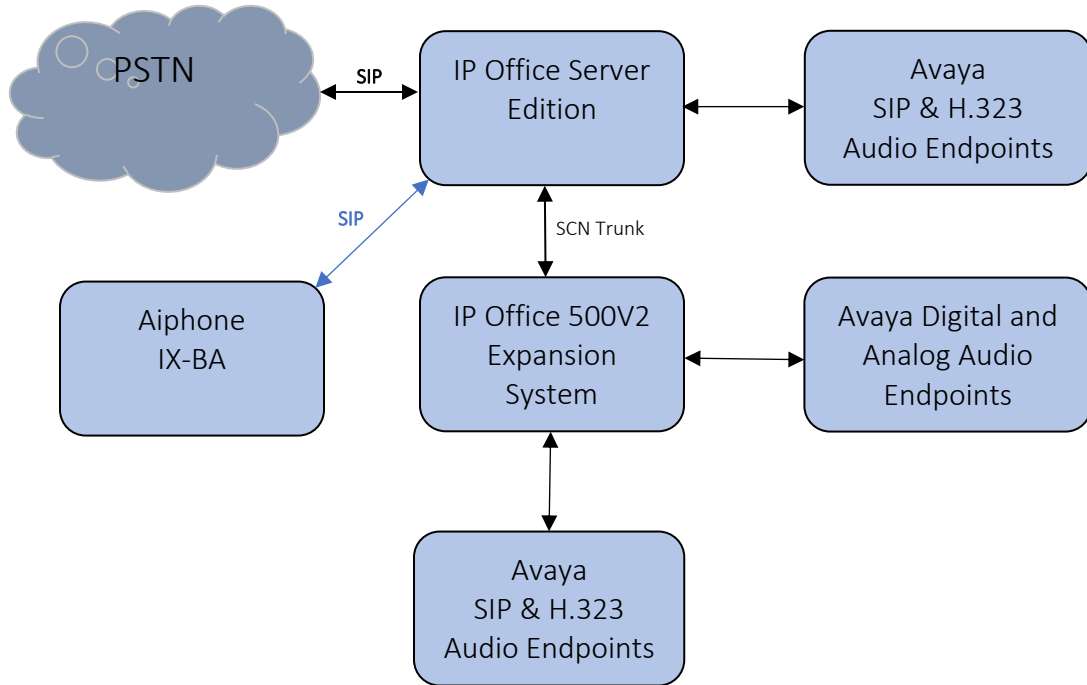


Figure 1: Test Configuration of Aiphone IX-BA with Avaya IP Office

4. Equipment and Software Validated

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

Equipment	Software/Firmware
Avaya IP Office Server Edition	11.0.4.2.0 build 58
Avaya IP Office 500V2	11.0.4.2.0 build 58
Avaya IP Office Manager	11.0.4.2.0 build 58
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-BA	5.06.

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:

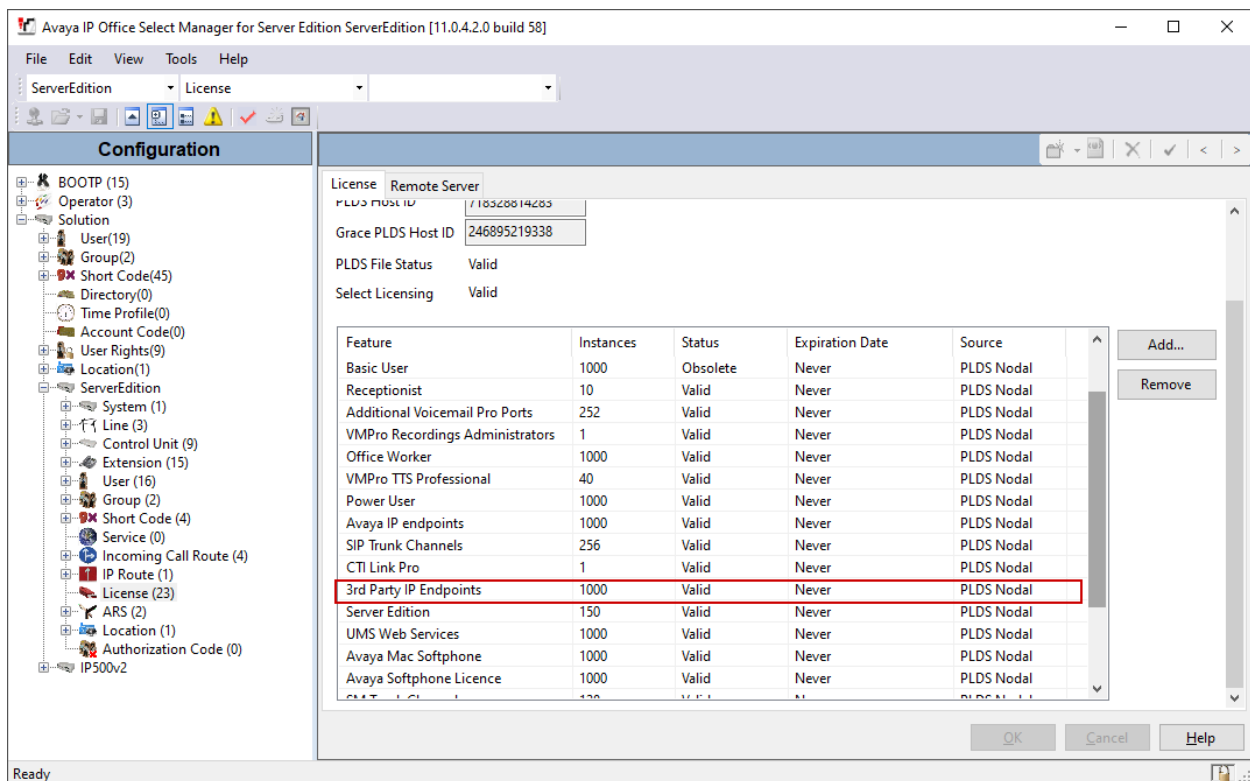
- Verify IP Office license
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users

These steps are performed from the Avaya IP Office Manager.

5.1. Verify IP Office License

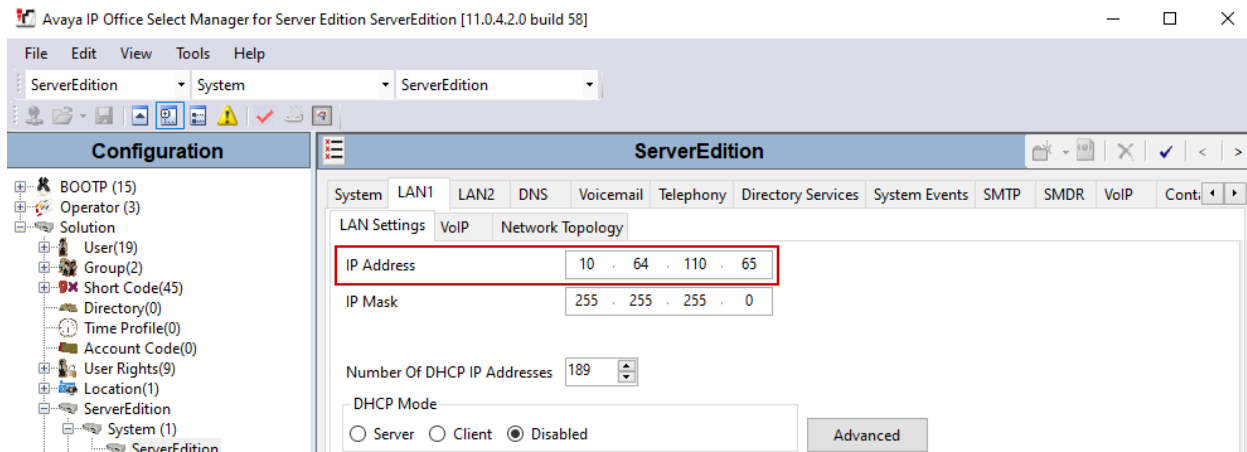
From a PC running the Avaya IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the Manager application. Select the proper IP Office system if there are more than one IP Office system, and log in with the appropriate credentials.

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.



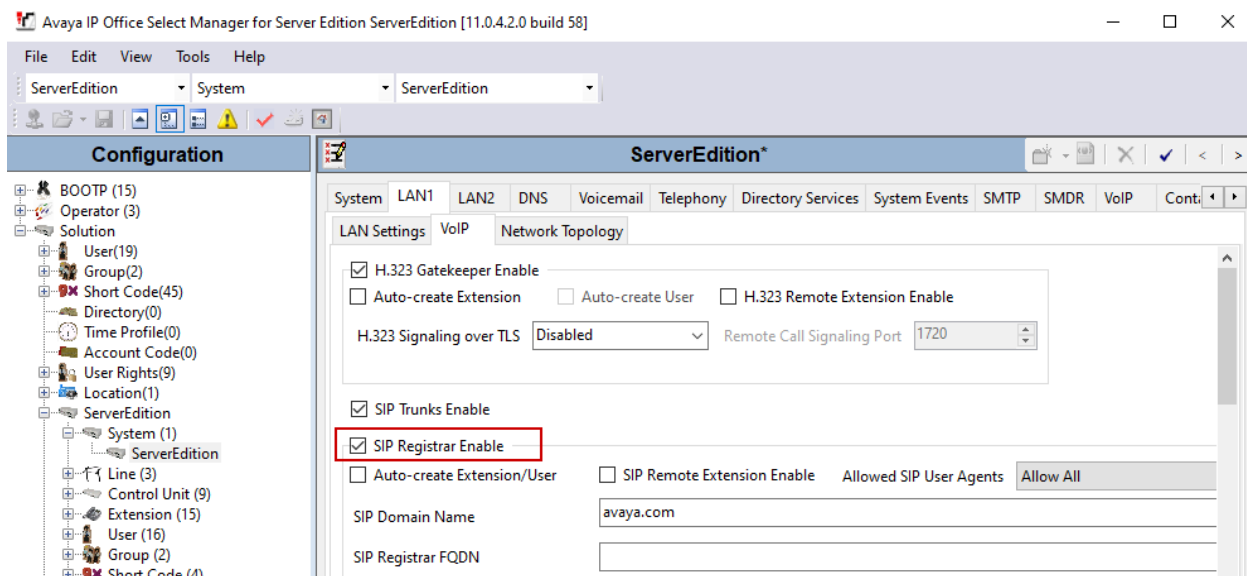
5.2. Obtain LAN IP Address

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-BA.



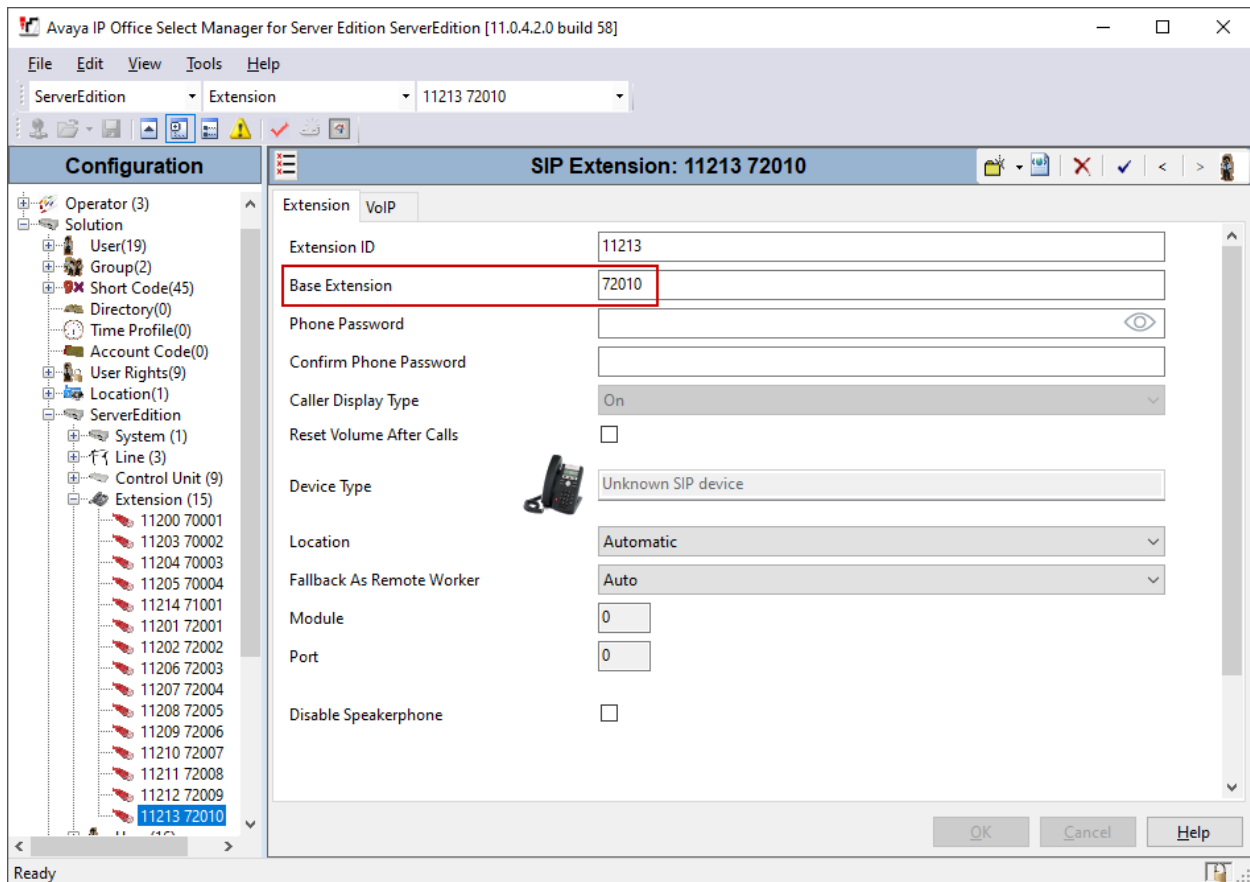
5.3. Administer SIP Registrar

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-BA to log in.



5.5. Administer SIP Users

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**.

The screenshot displays the 'Avaya IP Office Select Manager for Server Edition' application window. The title bar indicates the version is [11.0.4.2.0 build 58]. The interface is divided into a left 'Configuration' pane and a right 'AIIXBA: 72010' configuration pane.

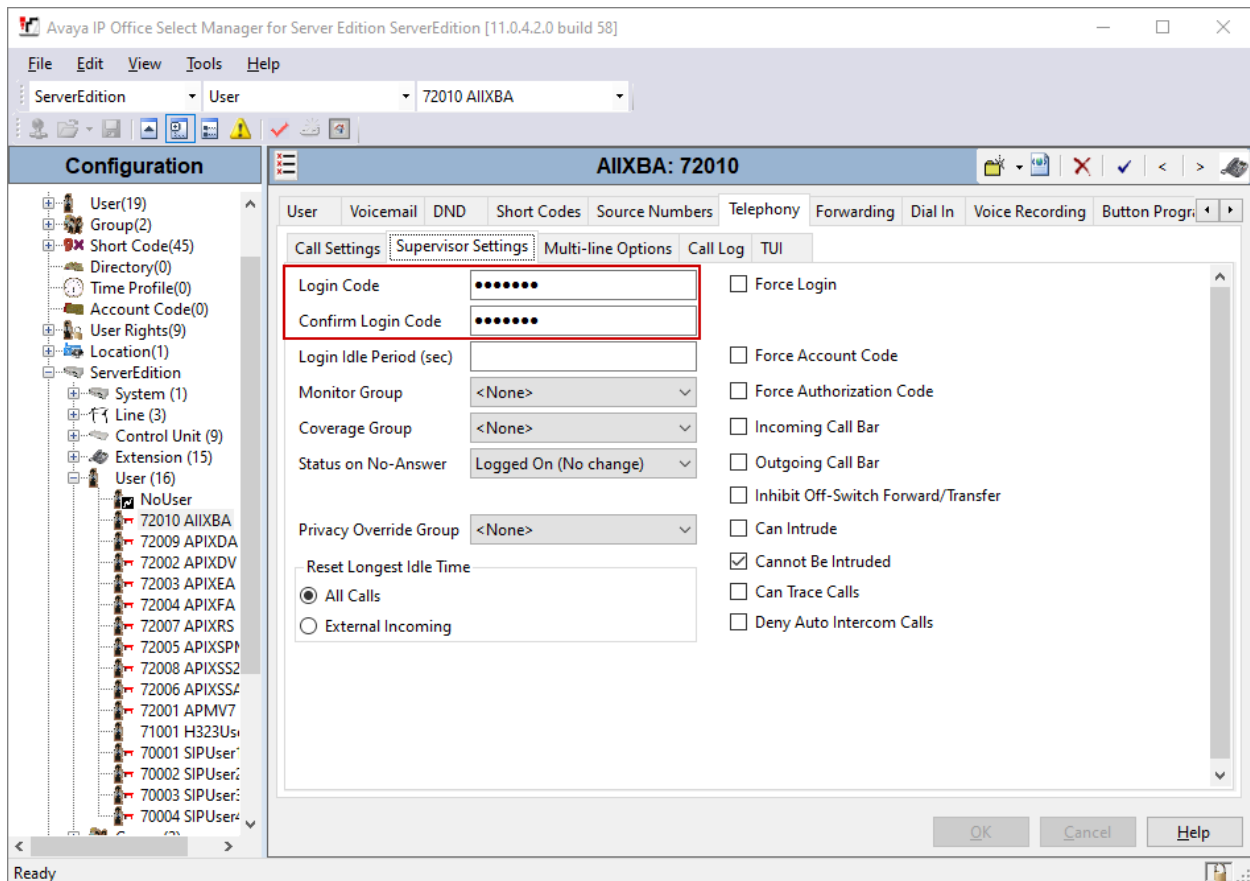
Configuration Pane (Left): A tree view showing the hierarchy of the system configuration. The 'User' folder is expanded, and the '72010 AIIXBA' user is selected. Other users listed include 'NoUser', '72009 APIXDA', '72002 APIXDV', '72003 APIXEA', '72004 APIXFA', '72007 APIXRS', '72005 APIXSPM', '72008 APIXSS2', '72006 APIXSSA', '72001 APMV7', '71001 H323Usr', '70001 SIPUser', '70002 SIPUser', '70003 SIPUser', and '70004 SIPUser'.

AIIXBA: 72010 Configuration Pane (Right): This pane contains various tabs for user configuration. The 'User' tab is active, showing the following fields:

- Name:** AIIXBA (highlighted with a red box)
- Extension:** 72010 (highlighted with a red box)
- Account Status:** Enabled (dropdown menu)
- Profile:** Power User (dropdown menu)
- System Phone Rights:** None (dropdown menu)
- Priority:** 5 (dropdown menu)
- Locale:** (dropdown menu)
- Email Address:** (text field)
- Full Name:** (text field)
- Conference PIN:** (text field)
- Confirm Audio Conference PIN:** (text field)
- Unique Identity:** (text field)
- Confirm Password:** (text field)
- Password:** (text field)

At the bottom of the configuration pane, there are checkboxes for 'Receptionist' (unchecked) and 'Enable Softphone' (checked). The 'OK', 'Cancel', and 'Help' buttons are located at the bottom right of the configuration pane.

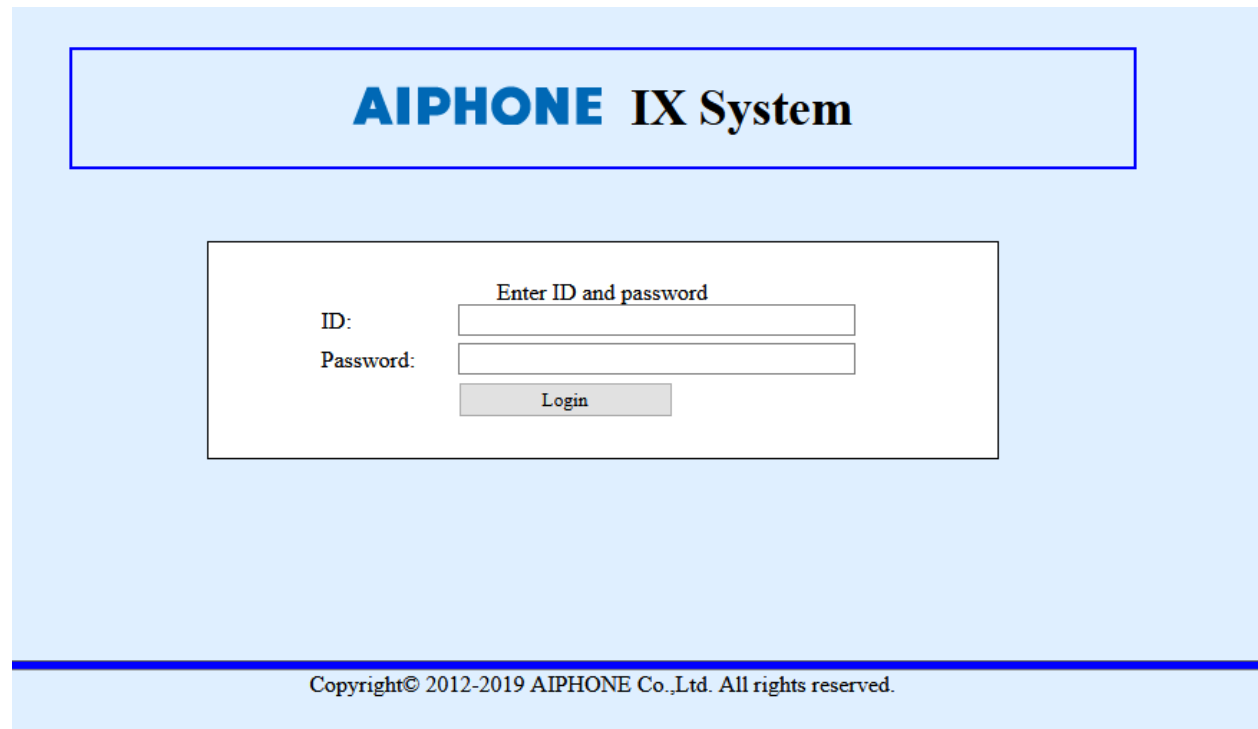
Select the **Supervisor Settings** tab, and enter a desired **Login Code** and **Confirm Login Code**. This code will be used as a password for Aiphone IX-BA.



6. Configure Aiphone IX Series Audio Door Station

This section provides steps to configure Aiphone IX-BA.

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



AIPHONE IX System

Enter ID and password

ID:

Password:

Login

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Once logged in, for the **Number** field, type in the SIP extension that is being configured (from **Section 5.4**), and a desired **Name**. Select **Update** to save change.

AIPHONE IX System Setting
Station Type: Audio Only Door Station

Station Information

Identification
ID and Password
Language
Time

Network Settings
IP Address
DNS
SIP
Audio
Packet Priority
NTP

• Identification

Number: 72010 3-5 digits
Name: DX-BA 1-24 alphanumeric characters
Location: 1-24 alphanumeric characters

Update

From the left, select **Network Settings** → **SIP** and configure as follows:

- **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**.

Once done, select **Update** to save changes.

AIPHONE IX System Setting
Station Type: Audio Only Door Station

Network Settings

• SIP

SIP Connections

SIP Signaling Port: 5060 1-65535
User Agent: DX-BA 1-36 alphanumeric characters

SIP Server

Primary Server

ID: 72010 1-24 alphanumeric characters
Password: **** 1-24 alphanumeric characters
IPv4 Address: 10.64.110.65 1.0.0.0-223.255.255.255
IPv6 Address: ::FF:0-FEFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
Port: 5060 1-65535

Update

From the left, select **Call Settings** → **Station Settings** and configure as follows:
The numbers configured here will be dialed when the button on the IX-BA 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**.

Select **Update** to save changes.

AIPHONE IX System Setting
Station Type: Audio Only Door Station

Call Settings

•Called Stations

Call Button Assignment

	Number 3-32 digits	IPv4 Address 1.0.0.0-223.255.255.255	IPv6 Address 2000::0- 3FFF:FFF:FFF:FFF:FFF:FFF:FFF:FFF or FD00::0- FDF:FFF:FFF:FFF:FFF:FFF:FFF:FFF
1	70001	10.64.110.65	
2			

Update

On the left, select **Function Settings** → **Contact Input Call** and set **Station Number** for **Group D01** to 000. At the bottom of page, set **Priority** to **Urgent** for **Door Station Call Group Assignment** (not shown).

AIPHONE IX System Setting
Station Type: Audio Only Door Station

Function Settings

[Group D01] [Return to Top](#)

	Station Number 3-32 digits	IPv4 Address 1.0.0.0-223.255.255.255	IPv6 Address 2000::0- 3FFF:FFF:FFF:FFF:FFF:FFF:FFF:FFF or FD00::0- FDF:FFF:FFF:FFF:FFF:FFF:FFF:FFF
1	000	10.64.110.65	
2			
3			
4			

Update

On the left, select **Contact / Audio Output Settings** → **Contact Input** and set **Usage** to **Call**.

AIPHONE IX System Setting
Station Type: Audio Only Door Station

Contact Input

Contact Input Specifications

Input Number	Input Specifications		
	Type	Detection time [msec] * 200-2000msec / 100msec step	Usage
1	Make	200 msec	Call

Update

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**.

SIPPhoneStatus

Total Configured: 14

Total Registered: 4

Registered Status: [4 blue squares]

Waiting 1 secs for update

Extn Num	User Num	Phone Type	Security	IP Address	Trans...	User Agent	Licensed	Status
70001	70001	J129 SIP	disable	10.64.10.210	TCP	Avaya J129 IP Phone 4.0.3.1.4 a478...	Avaya IP	SIP: Registered
70002	70002	VANTAG...	disable	10.64.10.223	TCP	Avaya Vantage Basic/2.0.1.0 (0402; ...	Avaya IP	SIP: Registered
72009	72009	SIP	disable	10.64.10.53	UDP	IX-DA	3rd Party IP	SIP: Registered
72010	72010	SIP	disable	10.64.10.52	UDP	IX-BA	3rd Party IP	SIP: Registered

Display Options:

☐ Show All ☒ Registered ☐ UnRegistered

Page 1

Save Page Reset Phones Reregister Phones Cancel

- Place a call from Aiphone IX-BA 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-BA extension.

The screenshot shows the Avaya IP Office System Status application window. The title bar indicates the server edition (10.64.110.65) and the client version (11.0.4.2.0 build 58). The main menu includes Help, Snapshot, LogOff, Exit, and About. The left sidebar shows a tree view with categories like System, Alarms (39), Extensions (4), Trunks (3), Active Calls, Resources, Voicemail, and IP Networking. The 'Extensions' category is expanded, showing a list of extensions: 70001, 70002, 72009, and 72010. The '72010' extension is selected, and its details are displayed in the main pane under the 'Extension Status' heading.

Extension Status

Extension Number:	72010
IP address:	10.64.10.52
Standard Location:	None
Dynamic Location:	None
Registrar:	Primary
Telephone Type:	Unknown SIP Device
User-Agent SIP header:	IX-BA
Media Stream:	RTP
Layer 4 Protocol:	UDP
Current User Extension Number:	72010
Current User Name:	AIXBA
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:	3/9/2020 6:05:18 PM
Packet Loss Fraction:	
Jitter:	
Round Trip Delay:	
Connection Type:	Direct Media
Codec:	G711 Mu
Remote Media Address:	10.64.10.210

Call Ref	Current State	Time in State	Calling Number or Called Number	Direction	Other Party on Call
899	Connected	00:00:07		Outgoing	Extn 70001, SIPUser1

At the bottom of the main pane, there are buttons for Trace, Trace All, Pause, Ping, Call Details, Clear Dynamic Location, Print..., and Save As... The status bar at the bottom right shows the time as 10:09:49 PM and the system status as Online.

8. Conclusion

Aiphone IX-BA was compliance tested with Avaya IP Office. Aiphone IX-BA 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-BA can be found at: <https://www.aiphone.co.jp/products/business/ix/>

Appendix A

Following devices are based on the same firmware as IX-BA:

- IX-BA
- IXBA
- IXBAF
- IXBAFBK
- IXBAFR
- IXBAFT
- IXBAFBM
- IXBAFTBM
- IXBAFCV
- IXBAFCVBM
- IXBAF2BM
- IXBAF4BM
- IXBAF6BM

The difference in each IX-BA devices is their mounting method:

- IX-BA
 - Surface mounting
- IXBA
 - Surface mounting
- IXBAF
 - Flush mounting
- IXBAFBK
 - Flush mounting
 - Black color panel
- IXBAFR
 - Flush mounting
 - Red color panel
- IXBAFT
 - Flush mounting
 - Card reader
- IXBAFBM
 - Flush mounting
 - Hearing aid
- IXBAFTBM
 - Flush mounting
 - Card reader
 - Hearing aid
- IXBAFCV
 - Flush mounting
 - 10-key pad
- IXBAFCVBM
 - Flush mounting

- Card reader
 - Hearing aid
 - 10-key pad
- IXBAF2BM
 - Flush mounting
 - Hearing aid
 - 2 call buttons
- IXBAF4BM
 - Flush mounting
 - Hearing aid
 - 4 call buttons
- IXBAF6BM
 - Flush mounting
 - Hearing aid
 - 6 call buttons

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