

HOW TO.

Setup

2N D7A SIP Phone

w/Axis & 2N Intercoms

November 11, 2025

Rev. 1.2

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Introduction

Quick Setup Guide of the 2N D7A SIP Phone.

From initial login, config, optional setup of Dsskeys in a Peer-to-Peer scenario with an Axis or 2N Intercom.

Settings may vary. Tested with the following firmware revisions:

2N D7A SIP Phone FW 150.86.57.8

Intercom:

AXIS Intercom FW 11.11.79

and

2N Intercom FW 2.44.1.57.4

Please note that Axis doesn't take any responsibility for how this configuration may affect your system. If the modification fails or if you get other unexpected results, you may have to restore the settings to default.

Section 1 – Getting Connected for the first time

Cable Connections

1. Connect the handset cable to the handset & the **Handset port** on the back of the phone.
2. Connect the Network cable to your network and to the **Internet port** on the back of the phone (this supports POE). Not required if using WiFi.
3. If not using POE or if using WIFI also connect a power supply to the back of the phone and the power outlet.



Wi-Fi (optional)

1. On the phone's touch screen drag down from the top to show the menu
2. Press the **Settings icon**
3. Scroll until you see the section **Basic Settings** click on **Wi-Fi**
4. Enable **Wi-Fi**
5. Select your Wireless Network (SSID) and enter your password
6. Press **Connect**

Find the IP Address

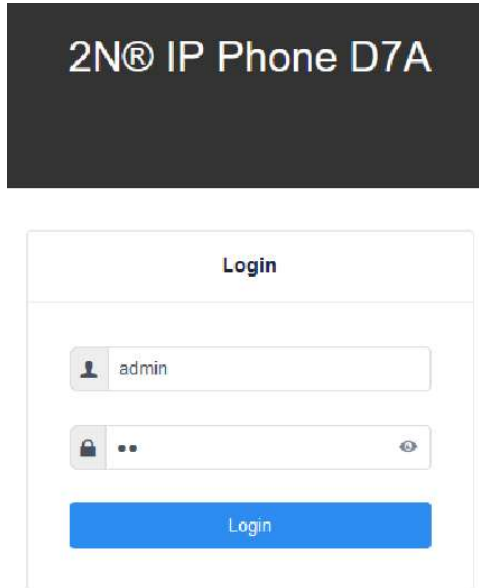
The phone is set to DHCP by default and should pull an IP Address if your network supports this.

1. On the phone's touch screen drag down from the top to show the menu.
2. Press on the **Settings icon**
3. In the section **Status** click on **Network** then **IPv4 Status**.
4. This will reveal the **WAN IP**. Make note of this for the next step.

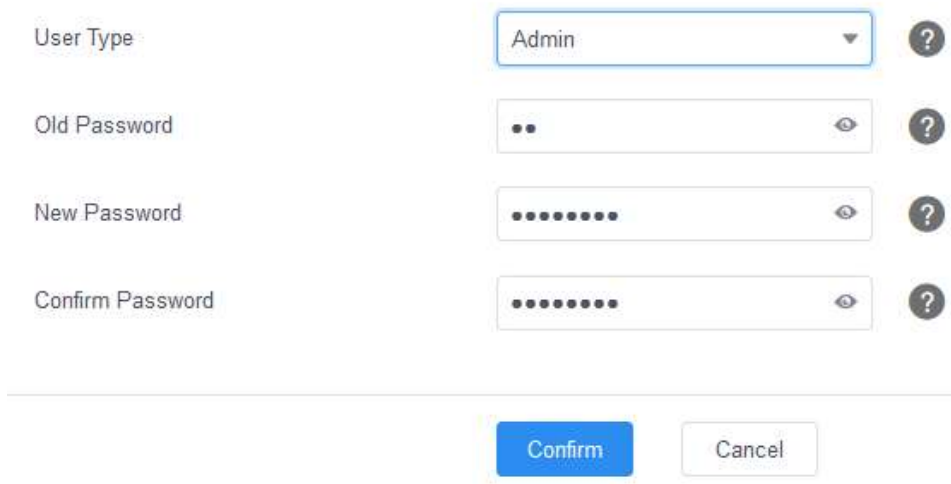
Connect to the web GUI of the phone

The next step is done through the web browser on your computer

1. Type the IP Address (WAN IP noted from previous step) of the phone into your web browser.
2. The first time you login, use the following credentials
 - User: admin
 - Password: 2n



3. You will then be prompted to change the password
 - The password must be at least 8 characters long and contain at least 1 uppercase letter, 1 lowercase letter, and 1 digit.
4. Set a **New Password** and click **Confirm**.



Set the Date & Time

The following steps are completed through the phone's web GUI via your computer's browser

1. Go under **Settings** → **Time&Date**
2. Adjust the **Time Zone** drop down from +1 to the appropriate zone
 - For example if in New York, change it to:
 - -5 Bogota, Lima, Quito, Peru, Indiana, Bahamas, Canada, Cuba, US-Eastern Time
3. Verify / update the **Daylight Saving Time & Location**
4. Adjust the **Time Format** to your preference
 - For example change the default Hour 24 to **Hour 12**
5. Adjust the **Date Format** to your preference
 - For example change the default DD/MM/YYYY to **MM/DD/YY**
6. Click **Confirm**

Update Interval (15~86400s) 1000 ?

Time Zone -5 Bogota, Lima, Quito, Peru... ?

Daylight Saving Time

Location United States-Eastern Time ?

Fixed Type DST by Date DST by Week ?

Start Date March Second ... Sunday 2 : 0

End Date November First Week Sunday 2 : 0

Offset (minutes) 60 ?

Time Format Hour 12 ?

Date Format MM/DD/YY ?

Confirm Cancel

Section 2 – 2N D7A - Update Door Phone (Axis or 2N Intercom) Settings

The following steps are completed through the D7A phone's web GUI via your computer's browser

1. Go under **Features** → **Door Phone**
2. Verify **Door Phone List** has **Door Phone 1** selected
3. Update **Display Name** with the name or location of your Axis or 2N Intercom
 - For example: Front Door
4. Update **Phone Number** with the IP Address of the Axis or 2N Intercom

The screenshot displays the web GUI for the 2N D7A SIP Phone. On the left, a blue sidebar contains a 'Features' menu with a yellow box around it and a yellow arrow pointing to the 'Door Phone' option. The main content area is titled 'Door Phone List' and shows a dropdown menu with 'Door Phone 1 (None)' selected, highlighted by a yellow box. Below this, the 'Device Type' is set to '2N'. The 'Display Name' field contains 'Front Door', the 'Phone Number' field contains '10.0.10.121', and the 'Unlock PIN' field is masked with dots, all three highlighted by a yellow box. The 'Authentication' section at the bottom has fields for 'Username' and 'Password' (masked), also highlighted by a yellow box. At the bottom of the page, there are 'Confirm' and 'Cancel' buttons, with 'Confirm' highlighted by a yellow box.

5. Update **Unlock Pin** with the DTMF sequence the intercom uses to unlock the door (see subsequent sections if this needs to be configured on the intercom)

6. When on a call with the Intercom, an Open Door Icon will appear on the bottom left of the touch screen on the 2N D7A phone. This will pass the programmed unlock pin to the intercom to unlock the door during the call.
7. Optional: Update **Authentication** with the credentials of the Intercom the D7A Phone will use to send commands. Example: A Dsskey (pg 21) to directly send an unlock command to the intercom without initiating a call.
 - **Axis Intercom:** this can be created in the Axis Intercom web GUI under System → Users. There you can add a user w/Operator Role the D7A phone will use.
 - **2N Intercom:** this can be created in the 2N Intercom web GUI under Services → HTTP API then Account 1 (or unused account). Enable it, create the credentials & assign user privileges (ex. Switches) the D7A phone will use.
8. Click **Confirm**
9. Repeat the above steps for any additional Axis or 2N Intercoms, by selecting the next drop down in the **Door Phone list** at the top of the page.

Section 3 – Axis Intercom – Basic Call & Unlock Configuration

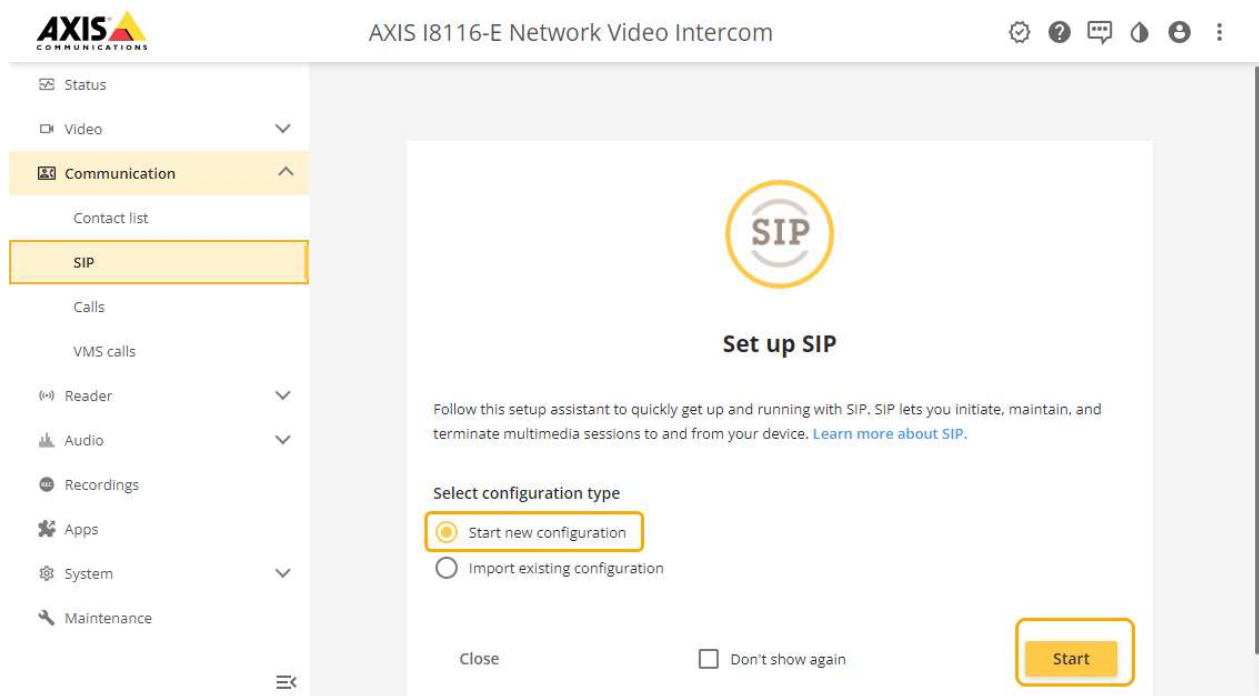
The following steps are completed through the **Axis Intercom's** web GUI

The following setup requires initial configuration of the intercom and network to have already been completed (discovery, network settings, internet access, etc.)

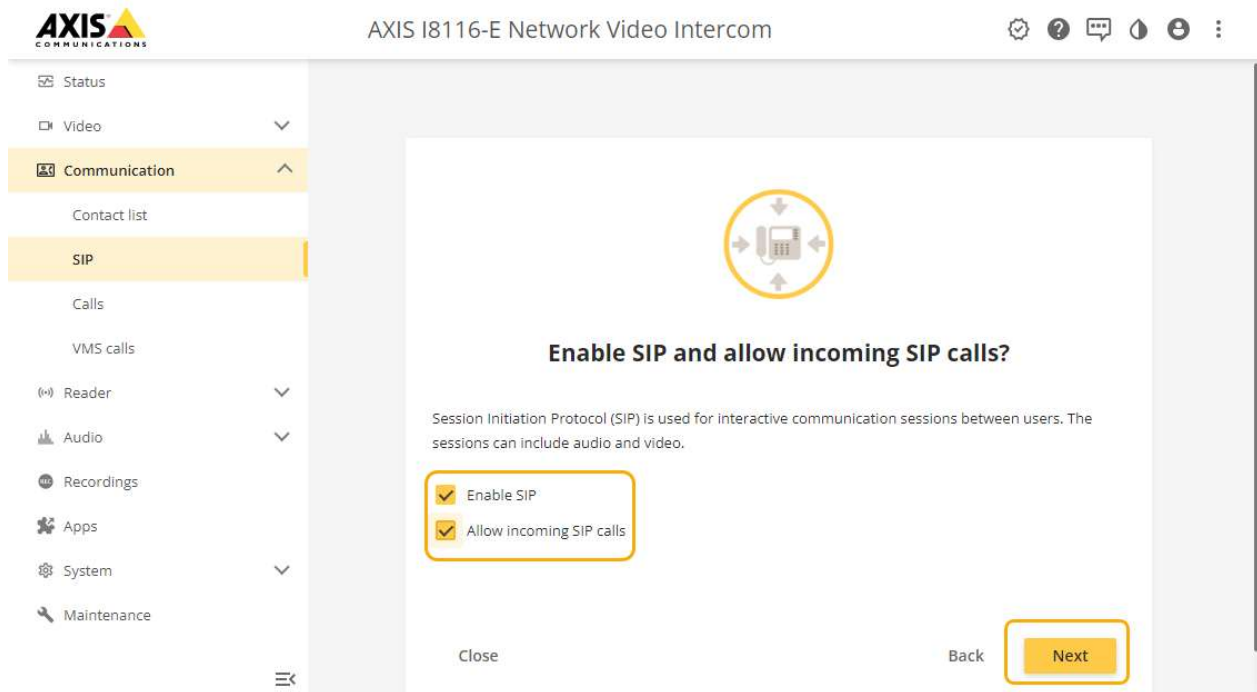
Consult your intercom's respective user manual. Manuals can be found here:
<https://help.axis.com/en-us> (click Network Intercoms on left side)

SIP Wizard Setup

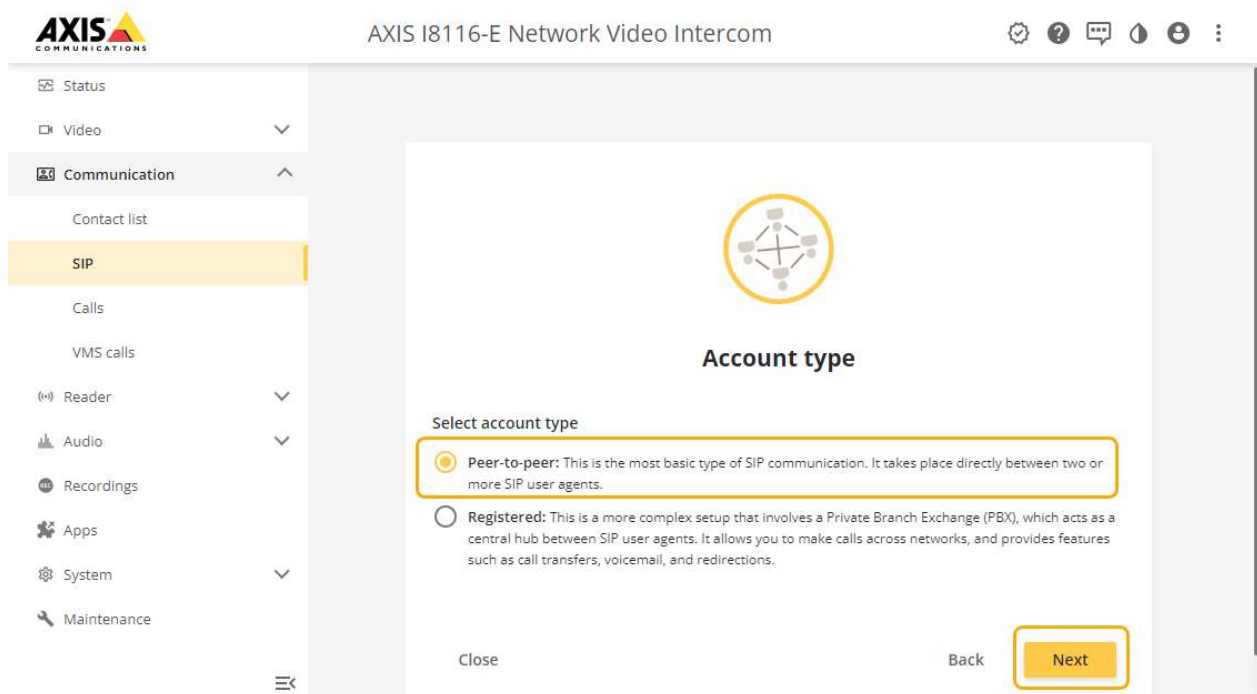
1. In the web interface of the Axis Intercom navigate to **Communication → SIP**
2. Follow the SIP Wizard
3. Setup SIP
 - a. Select **Start new configuration**
 - b. Click **Start**



4. Enable SIP and allow incoming SIP calls
 - a. Select **Enable SIP**
 - b. Select **Allow incoming calls** if you choose to allow the D7A to call the intercom
 - c. Click **Next**



5. Account Type
 - a. Select **Peer-to-peer**
 - b. Click **Next**



6. Create a peer-to-peer account
 - a. Give a descriptive **Name** such as Peer to Peer
 - b. Give a unique **User ID**
 - c. Click **Next**

The screenshot shows the AXIS I8116-E Network Video Intercom web interface. On the left is a navigation menu with options: Status, Video, Communication (selected), Contact list, SIP (selected), Calls, VMS calls, Reader, Audio, Recordings, Apps, System, and Maintenance. The main content area is titled 'Peer-to-peer' and contains a progress bar with steps: New, SIP, Account type, **Account** (current step), DTMF, Contact, Apply settings, Test call, and Export. Below the progress bar is the heading 'Create a peer-to-peer account' and a description: 'Create a peer-to-peer account that is used for direct calls to another SIP device on the local network.' There are two input fields: 'Name *' with the value 'Peer to Peer' and 'User ID *' with the value '112'. At the bottom right, there are 'Close', 'Back', and 'Next' buttons, with 'Next' being highlighted.

7. Configure DTMF

- Give a **DTMF description**, this will be used as the Rule Name.
 - Ex. Peer to Peer Door Unlock
- Assign a DTMF **sequence**
 - Ex. 00*
- Verify **Port** is set to the relay name you have the door lock wired to
 - Ex. Relay 1 or Door
- Verify **State** is set to Active
- Click **Next**

AXIS COMMUNICATIONS

AXIS I8116-E Network Video Intercom

Status

Video

Communication

Contact list

SIP

Calls

VMS calls

Reader

Audio

Recordings

Apps

System

Maintenance

Peer-to-peer

New SIP Account type Account **DTMF** Contact Apply settings Test call Export

Configure DTMF

Use DTMF to send commands in SIP calls. The DTMF character range consists of digits 0-9, letters A-D, * and #. For example, in a SIP call, the user sends the character '5' from the phone's keypad, which has been configured to unlock the door on the receiver side.

Set up DTMF and create a DTMF rule in the device's event system. If you want to add more rules when the setup is done, go to System > Events.

DTMF description *
Enter a description of the action that you want the DTMF sequence to trigger.
Peer to Peer Door Unlock

Sequence *
Enter the characters that will activate the rule.
00*

Port
Select which port will be used when the action triggers.
Relay 1

Rule name
Enter a name for the rule you want to create in the device's event system.
Peer to Peer Door Unlock

State
Select the state in which the action should trigger.
Active

Close Skip Back **Next**

8. Create a SIP Contact

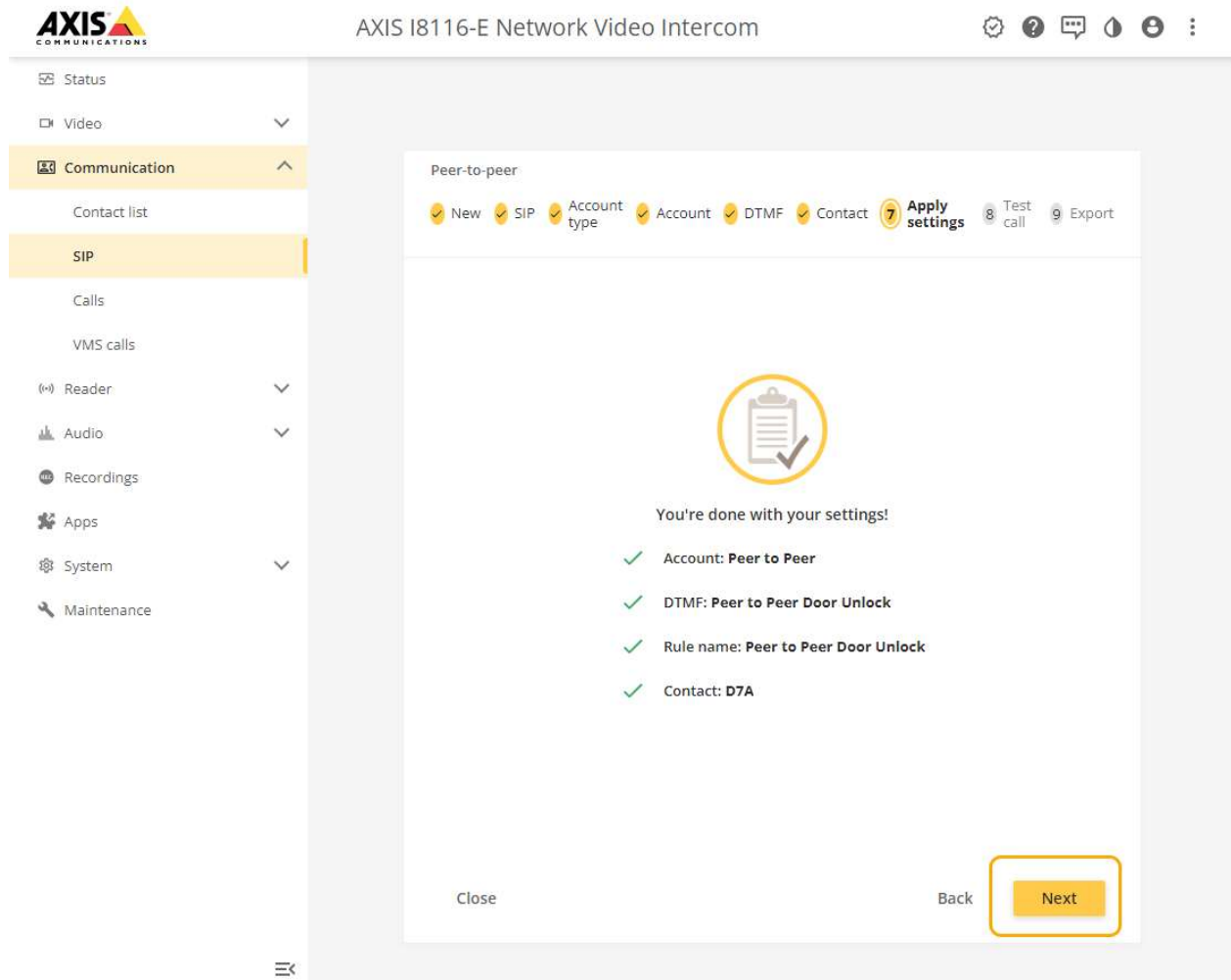
- a. Configure **First name** such as D7A
- b. Configure **SIP address** as the IP address of the D7A
- c. Click **Next**

The screenshot shows the AXIS I8116-E Network Video Intercom web interface. The left sidebar contains navigation options: Status, Video, Communication, Contact list, SIP, Calls, VMS calls, Reader, Audio, Recordings, Apps, System, and Maintenance. The 'Communication' section is expanded, and the 'SIP' option is selected. The main content area displays the 'Create a SIP contact' form. At the top, there is a progress bar with steps: New, SIP, Account type, Account, DTMF, Contact (highlighted), Apply settings, Test call, and Export. The form title is 'Create a SIP contact'. Below the title, a note states: 'The contact will receive a call when someone presses the call button.' The form contains the following fields:

- First name ***: A text input field with 'D7A' entered.
- Last name**: An empty text input field.
- SIP address ***: A text input field with '10.0.10.203' entered. Below the field is a hint: 'Enter the contact's IP address or extension.'
- Availability**: A dropdown menu with 'Always' selected. Above the dropdown is a hint: 'Select the contact's availability schedule.'

At the bottom of the form, there are three buttons: 'Close', 'Skip', and 'Next'. The 'Next' button is highlighted with a yellow border.

9. Apply Settings
 - a. Click **Next**



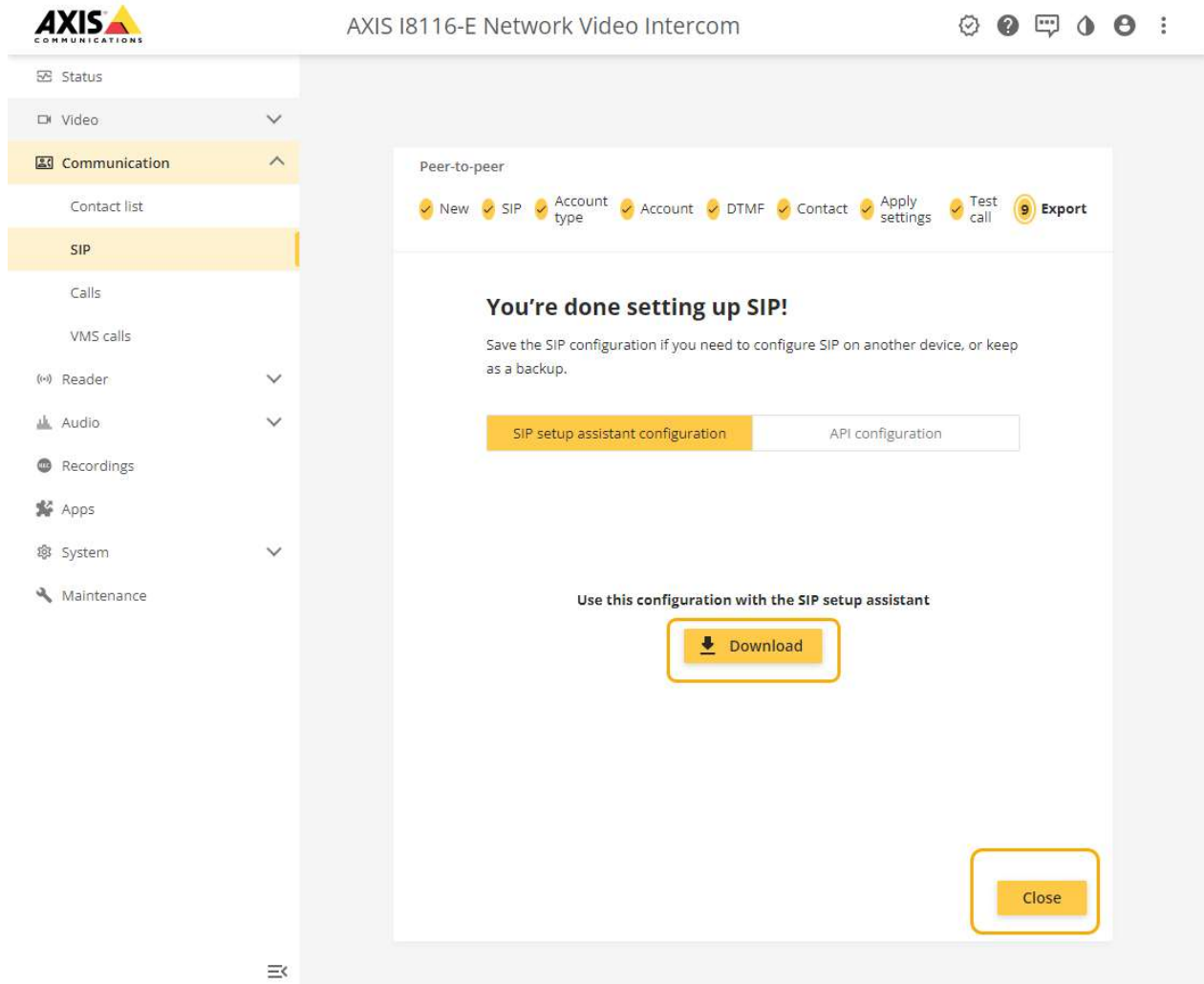
10. Test your setup

- Click the **phone icon** to perform a test call
- Click **Next**

The screenshot shows the web interface of the AXIS I8116-E Network Video Intercom. On the left is a navigation menu with options: Status, Video, Communication (expanded), Contact list, SIP (highlighted), Calls, VMS calls, Reader, Audio, Recordings, Apps, System, and Maintenance. The main content area is titled 'Peer-to-peer' and contains a 'Test your setup' dialog. The dialog has a header with several status indicators: New, SIP, Account type, Account, DTMF, Contact, Apply settings, Test call (highlighted with a yellow box), and Export. Below the header, the dialog prompts the user to 'Make a call to test the functionality and performance of you SIP setup.' It includes input fields for 'SIP account' (set to 'Peer to Peer'), 'SIP address' (set to '10.0.10.202'), and 'Call duration' (set to '60'). A yellow box highlights a phone icon button. Below the input fields, a status bar shows 'Idle' and the address '10.0.10.202'. At the bottom of the dialog, there are tabs for 'Call status' (selected), 'Local SDP (sent)', and 'Remote SDP (received)'. The 'Call status' tab displays the following information: CallId: Out-0-1728524228.456592-5-Vs0gpFaoYotUYTzPwp3T77lula..., Reason: Terminated, CallDirection: Outgoing, DeviceURI: sip:10.0.10.112:5060, RemoteURI: sip:10.0.10.202, AccountId: sip_account_1, and CallType: SIP. A 'Close' button is at the bottom left of the dialog, and a 'Next' button (highlighted with a yellow box) is at the bottom right.

11. You're done setting up SIP!

- Click the **Download** button to download a backup of this sip configuration that can be imported on this or other Axis intercoms on the network
- Click the **Close** button



Section 4 – 2N Intercom – Basic Call & Unlock Configuration

The following steps are performed in the web GUI of the 2N Intercom

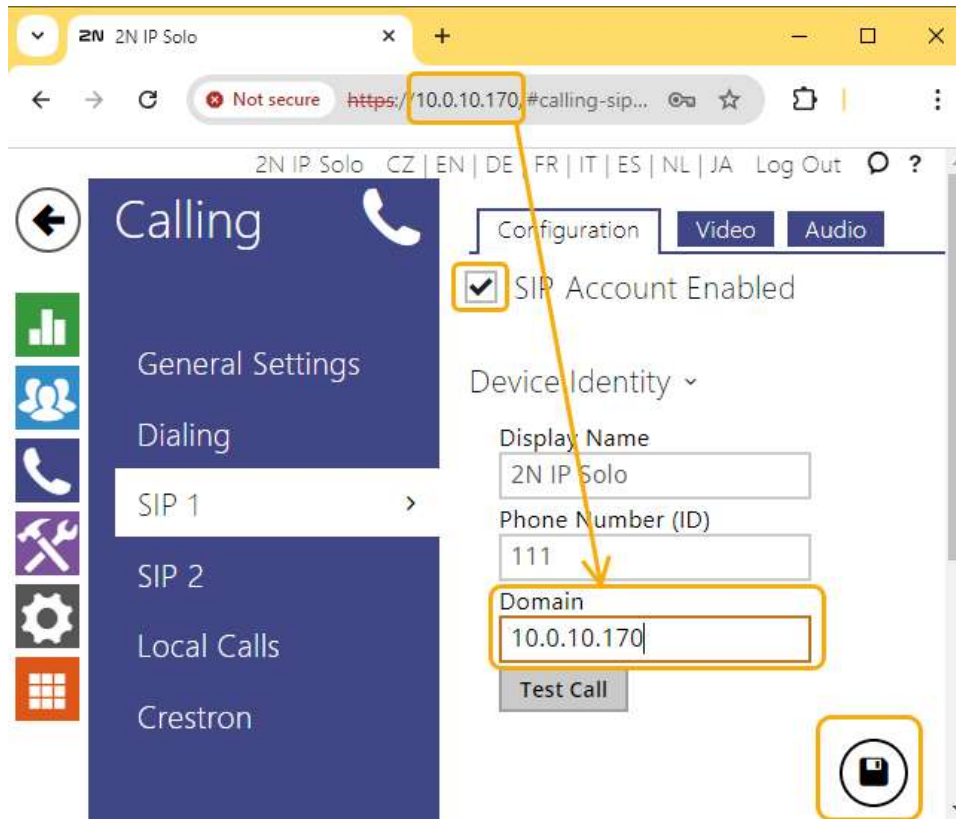
The following setup requires initial configuration of the intercom and network to have already been completed (discovery, network settings, internet access, etc.)

https://manual.2n.com/en-GB/wiki/42715/2_44/brief-guidelines

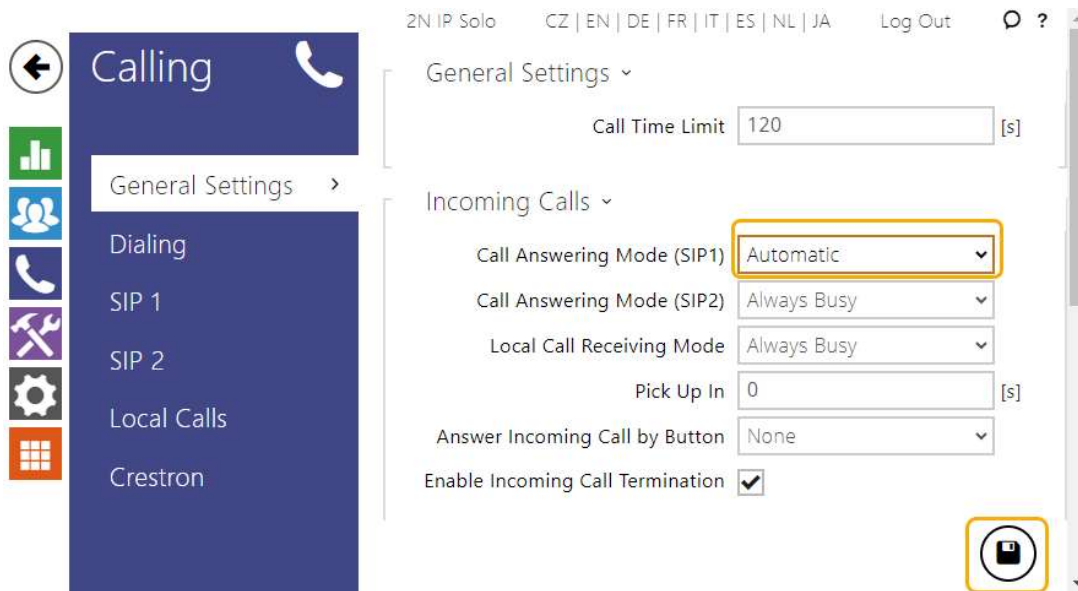
SIP Account Setup

A peer to peer sip account needs to be enabled in the 2N intercom to allow it to call the D7A's IP address directly.

1. Go under **Calling → SIP 1**
 - a. Enable **SIP Account 1**
 - i. This is disabled by default
 - b. It is best practice to set the **Domain** to the same IP as the intercom
 - c. Ignore the rest of the SIP settings as these are only used when registering the intercom to a phone system
 - d. Click **Save**

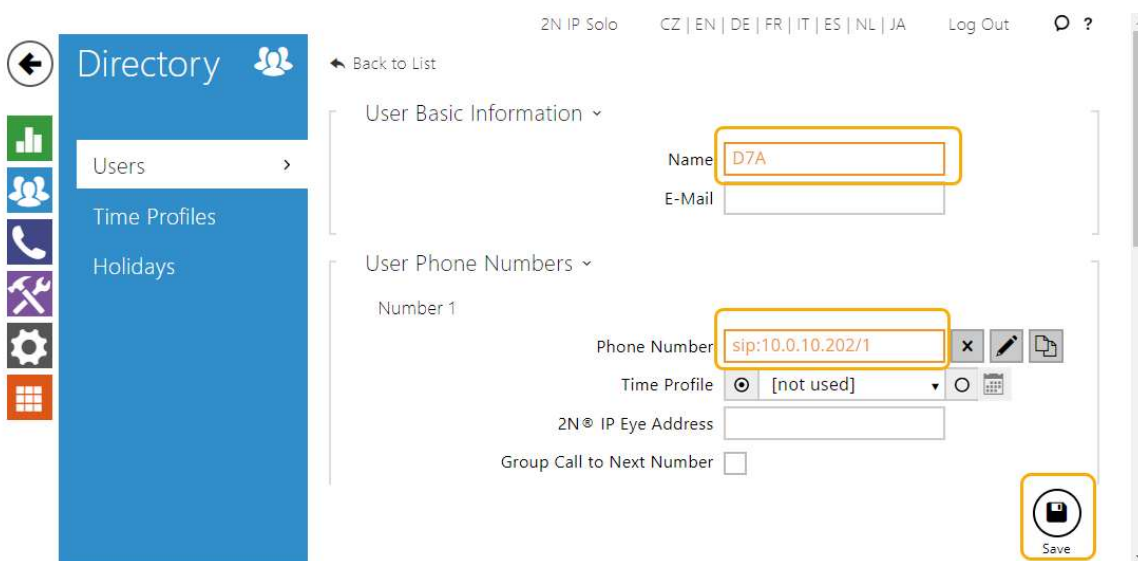


2. To enable incoming calls from the D7A SIP phone go under **Calling → General Settings**
 - a. Under **Incoming Calls**, change **Call Answering Mode (SIP1)** to **Automatic**
 - i. This is disabled by default
 - b. Click **Save**



User Setup

1. Add the D7A information in the intercom by navigating to **Directory → Users** settings.
2. Click on the **Add User** button at the top
3. Populate the **Name** field with the User's Name, ex. D7A
4. Populate the **Phone Number** field with **sip:** and the IP address of the D7A
 - a. Add a /1 to specify it will use SIP account 1 to dial out
 - b. Ex. sip:10.0.10.202/1
 - c. The pencil icon can also be used to assist with formatting
5. Click the **Save** button in the bottom right corner



Display Directory Setup

Users (like the D7A we just created) are automatically added to the Display Directory on the 2N IP Style and 2N IP Verso 2.0.

1. To modify how users appear in the directory
 - a. Settings can be adjusted under **Calling → Dialing → Display Phonebook**
 - b. Or under the user, via **Directory → Users**

Quick Dial Button Setup

For 2N Intercoms with physical buttons used for calling, the user needs to be added to the quick dial button.

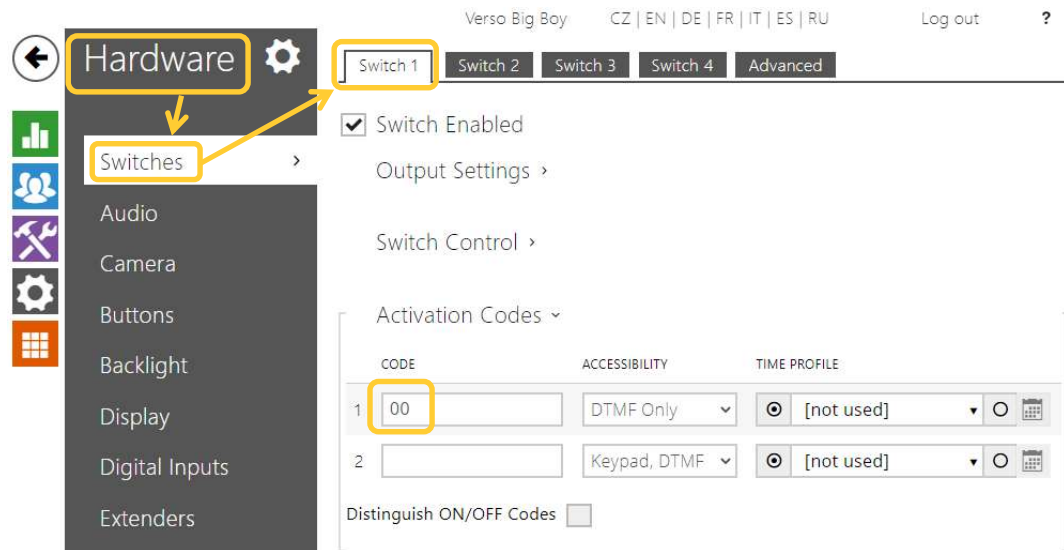
1. Navigate to **Calling → Dialing → Quick Dial Buttons**
2. Click the **plus symbol** to add the D7A user to the quick dial button on the device
3. Click **Save**



DTMF Setup

The DTMF sequence or Unlock Pin used to trigger the relay and release the door can be customized. The default sequence is 00*.

1. The DTMF sequence can be found in the 2N web GUI under **Hardware** → **Switches** then Switch 1 (default). Scroll down to find the DTMF sequence under Activation Codes.
2. When configuring the 2N Unlock Pin in the D7A you will need to append an * after the code, the 2N intercom will wait for the * to confirm the full code has been sent via DTMF.
 - a. Ex. 00 = 00*



Section 5 – Optional: 2N D7A - Programming Dsskeys (Soft Buttons)

Create some shortcut keys on the touchscreen to directly unlock a door, call the intercom or view an intercom camera feed.

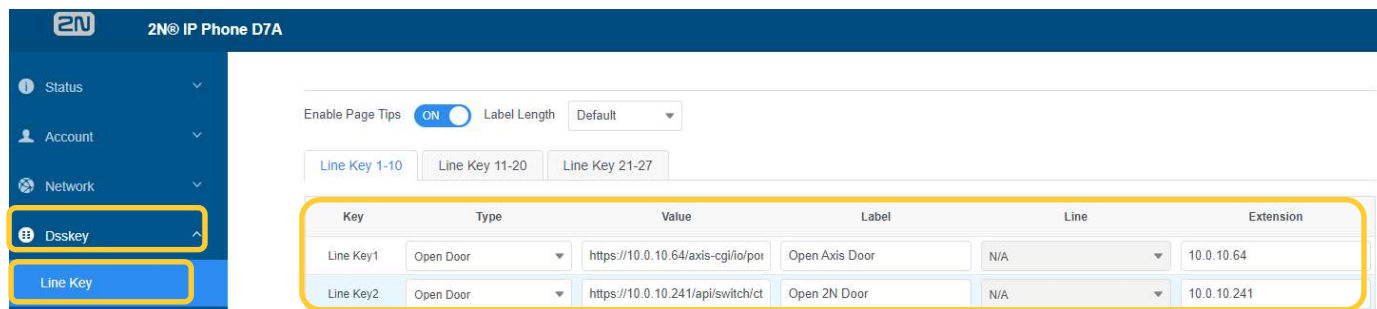
Unlock the Door

The following steps are performed in the web GUI of the 2N D7A Phone

1. Click on **Dsskey** then **Line Key**
2. Set the key type
 - **Type** = Open Door
3. The value is the trigger/command we will send to the (Axis or 2N) intercom
 - **Axis Intercom:**
Value = `https://<IP_of_Axis_Intercom>/axis-cgi/io/port.cgi?action=4%3A%2F5000%5C`

The above action triggers relay 1 (port **4**) for **5000** milliseconds (5 seconds) on the I8016-LVE. If you have a different model Axis Intercom, you can verify the Relay 1 port number under System → Accessories in the Axis GUI (firmware 11.x).

- **2N Intercom:**
Value = `https://<IP_of_2N_Intercom>/api/switch/ctrl?switch=1&action=trigger`
- The above action triggers Switch 1 (the default Door Lock switch). It is triggered for the duration specified in the 2N Intercom GUI under Hardware then Switches for Switch 1.
4. Create a descriptive label
 - Example: **Label** = Unlock Front Door
 5. Set the Extension / IP address of the intercom
 - **Extension** = <IP_of_Intercom>
 6. Click **Confirm**



Call an Axis or 2N Intercom

The following steps are performed in the web GUI of the 2N D7A Phone

1. Click on **Dsskey** then **Line Key**
2. Set the key type
 - **Type** = Speed Dial
3. The value is IP of the (Axis or 2N) intercom
 - **Axis Intercom:**
Value = <IP_of_Axis_Intercom>

Confirm incoming calls are allowed in the Axis Intercom. In the Axis Intercom GUI under Communication then SIP then the SIP Settings tab. Verify Allow Incoming Calls has a check next to it. Under the SIP Accounts tab, you can edit the peer-to-peer account to see if Answer Automatically has a check next to it.

- **2N Intercom:**
Value = <IP_of_2N_Intercom>

Confirm incoming calls are allowed in the Intercom. In the 2N Intercom GUI under Services then Phone then the Calls tab, verify the Incoming Calls, Call Answering Mode setting.

4. Create a descriptive label
 - Example: **Label** = Call Intercom
5. Set the Line to be used
 - **Line** = Line1
6. Click **Confirm**

2N IP Phone D7A

Enable Page Tips ☒ ON Label Length Default

Line Key 1-10 Line Key 11-20 Line Key 21-27

Key	Type	Value	Label	Line	Extension
Line Key1	SpeedDial	10.0.10.64	Call Axis Intercom	Line1	
Line Key2	SpeedDial	10.0.10.241	Call 2N Intercom	Line1	

View an Axis or 2N Intercom Camera

The following steps are performed in the web GUI of the 2N D7A Phone

1. Click on **Dsskey** then **Line Key**
2. Set the key type
 - **Type** = Video Monitoring
3. The value is the command specific for the (Axis or 2N) intercom
 - **Axis Intercom:**
Value = https://Username:Password@<IP_of_Axis_Intercom>/axis-cgi/mjpg/video.cgi?resolution=640x480&camera=2

The above command requests video from the Axis Intercom. Prior to the IP address, insert the Username:Password@ user credentials that the D7A will use to log into the Axis Intercom. The command requests a resolution of 640x480 from the custom view (&camera=2). To retrieve the default fisheye view, remove &camera=2 from the string.

- **2N Intercom:**
Value = https:// Username:Password@<IP_of_2N_Intercom>/api/camera/snapshot?width=640&height=480&fps=15

The above command requests video from the 2N Intercom. Prior to the IP address, insert the Username:Password@ API account credentials that the D7A will use to log into the Intercom. The command requests a resolution of 640x480 at a framerate of 15 fps.

4. Create a descriptive label
 - Example: **Label** = View Intercom
5. Set the Extension / IP address of the intercom
 - **Extension** = <IP_of_Intercom>
6. Click **Confirm**

Key	Type	Value	Label	Line	Extension
Line Key1	Video Monitoring	https://Username:Password@11	View Axis Intercom	N/A	10.0.10.64
Line Key2	Video Monitoring	https://width=640&height=480&fps=15	View 2N Intercom	N/A	10.0.10.241

NOTE

If Video doesn't load when you test the key, verify your 2N D7A is on FW 150.86.57.8 (or later) and the credentials are correct.

Considerations and limitations

Settings reference a Peer-to-Peer scenario on a local network. Settings and other changes would need to be made to accommodate connectivity through a phone system and/or if devices are located on different networks or if other network security measures are in place. Please consult your network administrator.

Additional configuration documentation on the Axis Intercoms can be found here:

<https://help.axis.com/en-us> (click Network Intercoms on left side)

Additional configuration documentation on 2N Intercoms can be found here:

<https://wiki.2n.com/hip/conf/latest/en>

If you have the optional camera for the 2N D7A you can configure a bidirectional video call with the 2N IP Style Intercom. This feature is disabled by default. It is enabled in the web GUI of the 2N IP Style under Services → Phone then click the Video tab. Additional information can be found here:

<https://faq.2n.cz/pages/viewpage.action?pageId=92537494>