



# snom<sup>®</sup> PA1 User Manual

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# Copyright, Trademarks, GPL, Legal Disclaimers

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Our firmware includes some source code that may be used and modified by anyone and everyone under the GNU Public License (GPL) (enclosed in the appendix), provided they, in turn, make it available to everyone else with the same licensing agreement. Please go to <http://www.snom.com/en/support/download/gpl-open-source/> for the original GPL license and the source code of components licensed under GPL and used in snom products.

## Important information

Please read the instructions on safety and disposal and on how to set up and use the device before using it and also give them to other users to read or inform those users of their contents. Save this manual and do not give the device to third parties without it.

## Safety instructions

Follow the instructions in this manual and other applicable documentation of the device.

- If the device is not supplied with power via an Ethernet cable, use only a power adapter expressly recommended by snom technology. Other power supplies may damage or destroy the device, affect its behavior, or induce noise.
- Avoid placing the cables where people may trip over them or where they may be exposed to mechanical pressure as this may damage them.
- This device is for indoor use only! **NOT FOR OUTDOOR USE!**
- Do not install the device in rooms with high humidity (for example, in bathrooms, laundry rooms, damp basements). Do not immerse the device in water and do not spill or pour liquids of any kind onto or into the device.
- Do not install the device in surroundings at risk for explosions (paint shops, for example). Do not use the device if you smell gas or other potentially explosive fumes.
- Do not use the device during thunderstorms. Lightning striking the power grid may cause electric shocks.
- **Do NOT** remove the device's power supply (Ethernet cable when using PoE, power adapter when not using PoE) when the red light is on or blinking; a firmware update is ongoing. Cutting off the device's power during a firmware update (red LED on, green LED off) will damage the firmware and render the PA1 inoperational. In such cases, it will need to be returned to the vendor for resetting.

## SELV (Safety Extra Low Voltage) compliance

Safety status of Input/Output connections comply with SELV requirements.

**Warning:** To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and PSTN ports contain TNV circuits. Some LAN and PSTN ports both use RJ-45 (8P8C) connectors. Use caution when connecting cables.

## Standards conformance



This device complies with the essential health, safety, and environmental requirements of all relevant European directives. The declaration of conformity can be requested from snom (address see reverse cover).



This phone is FCC-certified and meets US health, safety, and environmental standards.

Unauthorized opening, changing, or modifying the device will cause the warranty to lapse and may also result in the loss of CE conformity and the FCC certification. In case of malfunction contact authorized service personnel, your seller, or snom.

## Disposal of the device



This device is subject to European Directive 2002/96/EC and may not be disposed of with general household garbage.

The separate collection and proper disposal of electrical and electronic devices serve to protect human health and the environment as well as to use and reuse resources prudently and rationally.

If you do not know where you may dispose of the device at the end of its lifespan, contact your municipality, your local waste management provider, or your seller.

## Cleaning

To clean the device, use an anti-static cloth. Please avoid cleaning liquids as they might damage the surface or internal electronics of the device.

## Standard feature list

- IEEE 802.3af PoE compliant, Class 3
- 2 port 10/100Mb Ethernet switch
- SIP or multicast support
- Remote SW update
- Network/web management
- Remotely settable speaker volume adjustment
- Push-on speaker terminals
- Class D 4W power amplifier (loudspeaker not included)
- IP address/reset button
- Call/network activity indicator
- One "MIC in" and one "LINE out" 3.5 mm connector for headset connection (SPK impedance = 150 Ohm, MIC power supply 3.3V, RL = 2 KOhm, S= -42 dB (+-2dB)). Microphone input must be differential and without grounding. This port is **for installation and maintainance purposes only**, not for the connection of other devices.
- 4 I/O pins remotely settable
  - via web interface (in administrator mode only) or
  - with DTMF tones (with programmable timer)
- Robust casing design for wall mounting

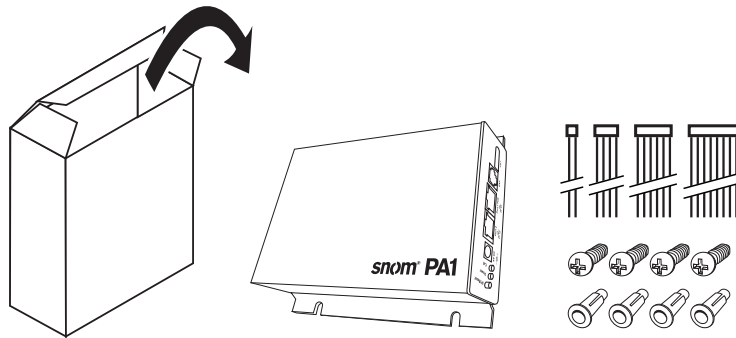
### Not included:

BSP (board support package) for further software development. If you are interested in this package, please talk to your vendor.

- 5V power adapter PSAC10R-050 (available separately - snom PN 00002730)
- Loudspeaker
- Keyboard
- Network cable

# Setting up the snom PA1

## Delivery Content



- Base unit
- 2 brackets for wall mounting (pre-assembled)
- 4 screws (Ø 8 mm, length 16 mm) + 4 expansion anchors for wall mounting
- Cable set (4 proprietary snom cables for connecting periphery devices)
- Quick Start Guide

## Wallmounting

**Note:** The Ethernet cable must not be bent to avoid damage and loss of the network connection. We recommend that you place the PA1 so that the PoE connector is facing toward the LAN port in your network. We also recommend that you place the PA1 in a location where you can see the LEDs from your desk or work station.

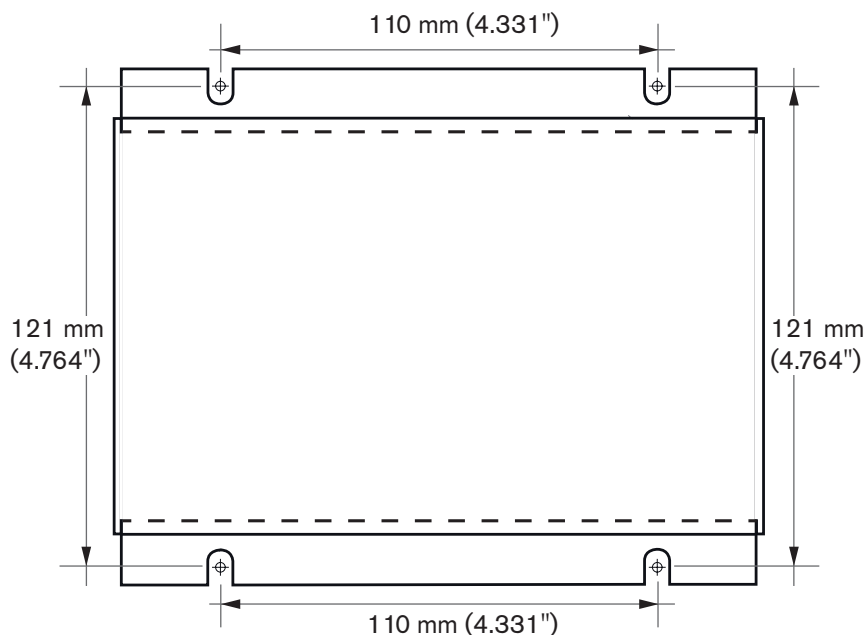


Fig. 1



1. Use the measurements in Fig. 1 to mark the positions of the four holes to be drilled in the wall, or use the template at Appendix 1.
2. Drill the holes and insert the expansion anchors in the holes.
3. Place the snom PA1 on the wall with the cut-outs above the anchors as shown in Fig. 2.

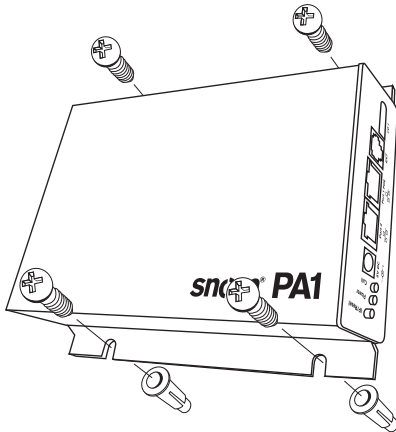


Fig. 2

4. Place the screws in the anchors and tighten them evenly..

## Connecting the PA1

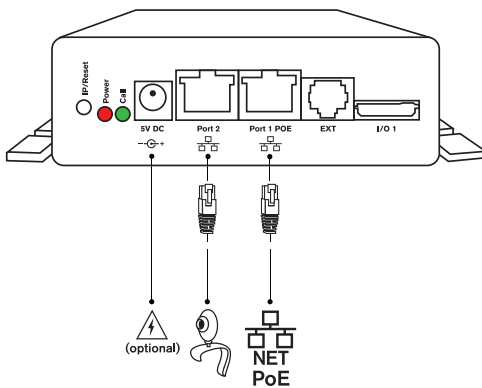


Fig. 1

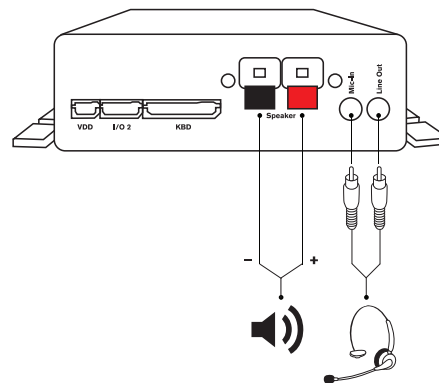


Fig 2

1. Plug the Ethernet cable into the RJ45 connector labelled "Port 1PoE", as shown in Fig. 1. The second RJ45 connector labelled "Port 2" is for daisy-chaining further Ethernet devices without the need for another Ethernet cable.

**If no PoE available:** Connect a snom-approved 5 V 10 W power adapter to the power connector labelled "5V DC".

2. Connect the loudspeaker wires to the speaker terminals labelled "Speaker", as shown in Fig. 2. Connect the "+" wire with the red terminal, connect the "-" wire with the black terminal.

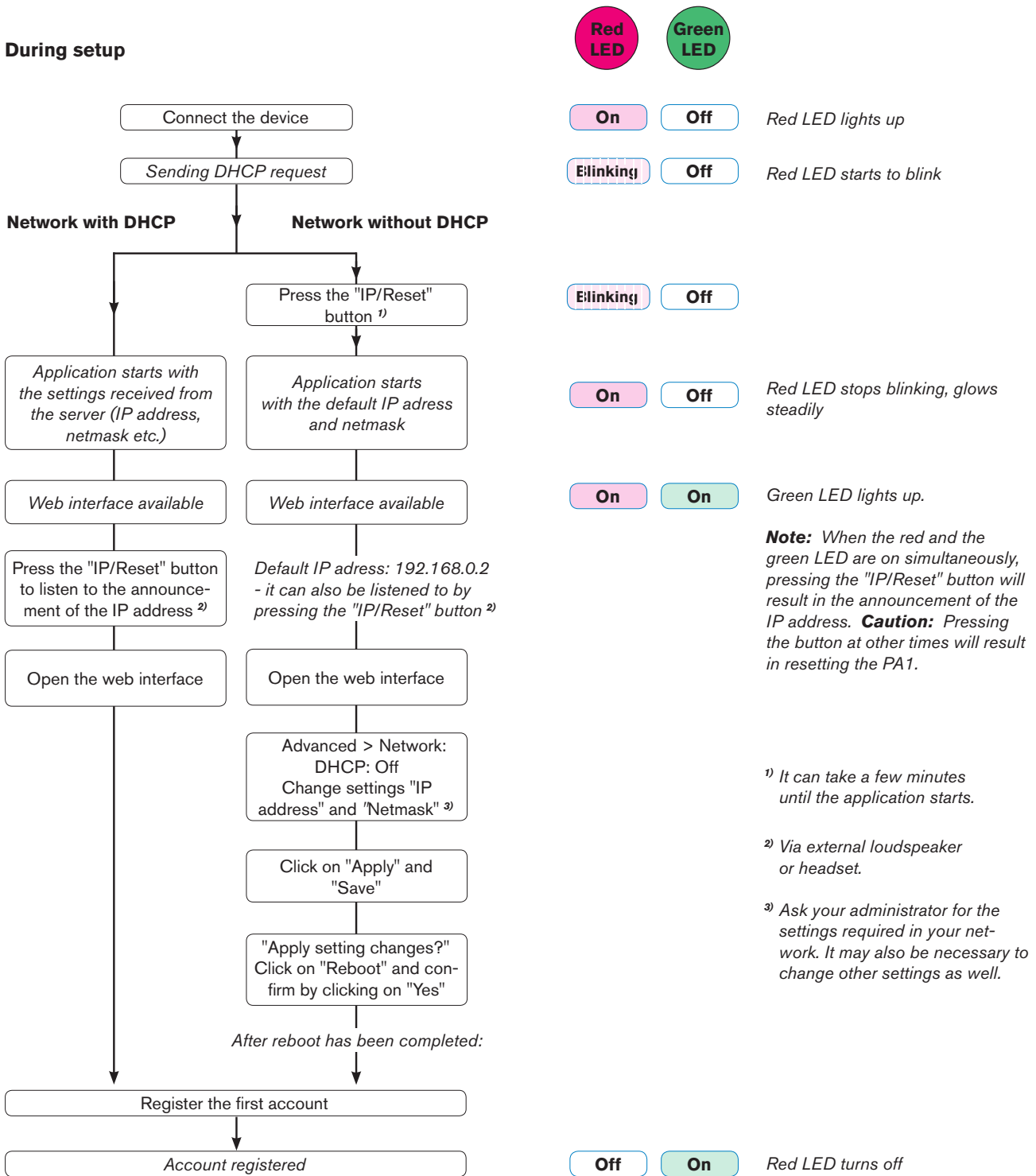
**Note:** If you want to use a headset during the setup:

- Connect the headset's microphone plug to the jack labelled "Mic-In".
- Connect the headset's speaker plug to the jack labelled "Line-Out".

# Initializing and Configuring the PA

## Status of PA1

### During setup



**Note:** When the red and the green LED are on simultaneously, pressing the "IP/Reset" button will result in the announcement of the IP address. **Caution:** Pressing the button at other times will result in resetting the PA1.

<sup>1)</sup> It can take a few minutes until the application starts.

<sup>2)</sup> Via external loudspeaker or headset.

<sup>3)</sup> Ask your administrator for the settings required in your network. It may also be necessary to change other settings as well.

### LED indications when application is running

Ready	Off	On
Busy	Off	Blinking
Firmware update in progress	On	Off

## Initializing

After the PA1 has been connected to the network via Ethernet cable, the red LED marked "Power" will light up. The PA1 begins to boot.

### Initializing with DHCP

The snom PA1 has a built-in DHCP client. When DHCP is available in the network, the PA1 will initialize automatically.

1. The red LED begins to blink. The PA1 is sending the DHCP request.
2. After the PA1 has received an IP address and other network-related settings (netmask, IP gateway, DNS server, etc.) from the DHCP server, the red LED stops blinking and glows red steadily, indicating that the application is starting up.
3. When the PA1 boot up process is finished and the web interface is available, the green LED lights up in addition to the red one.
4. Briefly press the button labelled "IP/Reset" to listen to the oral announcement of the IP address (in English) over the loudspeaker or headset.
5. Open a web browser on a PC connected to the same network as the PA1.
6. Type the IP address into the address bar after http:// and press "Enter" to open the PA1's web interface.
7. Continue with "Security settings" on page 13.

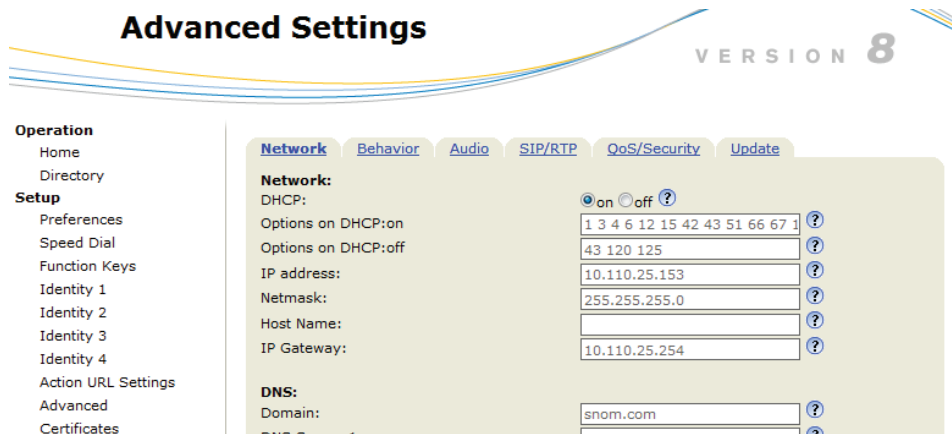
### Initializing without DHCP

If your network does not support DHCP, the snom PA1 will boot with the default settings. Please obtain the network IP address and netmask and, if applicable, other required network settings from your network administrator. The default settings are:

IP address: 192.168.0.2  
Netmask: 255.255.0.0

1. The red LED begins to blink. The PA1 is sending the DHCP request.
2. Press the button labelled "IP/Reset". The red LED continues to blink.  
**Note:** It may take a few minutes before the PA1 aborts the DHCP request and starts the application with the default settings.
3. When the application is starting up with the default network settings, the red LED stops to blink and glows red steadily.
4. When the PA1 boot up process is finished and the web interface is available, the green LED lights up in addition to the red one. You can now change the default settings manually.  
**Note:** Briefly press the button labelled "IP/Reset" to listen to the oral announcement of the default IP address (in English) over the loudspeaker or headset.
5. Open a browser on a computer connected to the same network as the PA1, and type the default IP address in the address bar: http://192.168.0.2. The PA1 web interface will be loaded into the browser.

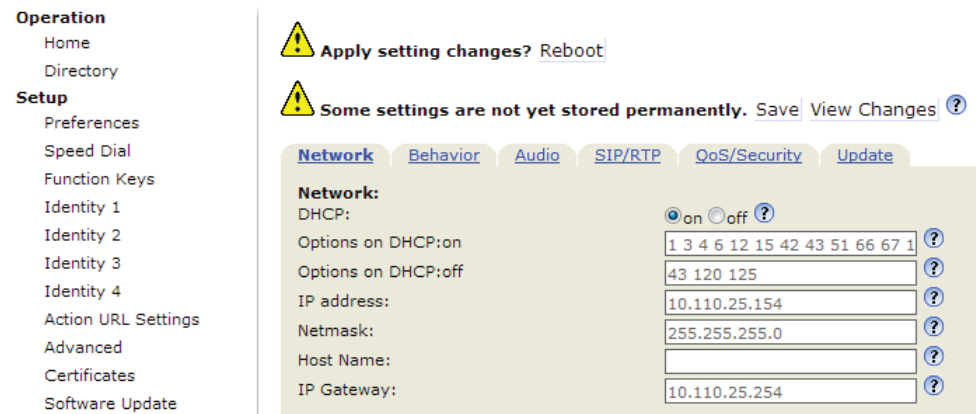
6. Click on "Advanced" in the menu on the left side of the window. The "Advanced" page opens to the "Network" tab.



7. In the "Network" section make the following changes:
  - a. "DHCP" setting: Click on "Off".
  - b. "IP address" and "Netmask" settings: Replace default values with network values.
  - c. Other settings: Replace if and as required.
8. Click on the "Apply" button at the bottom of the page
 

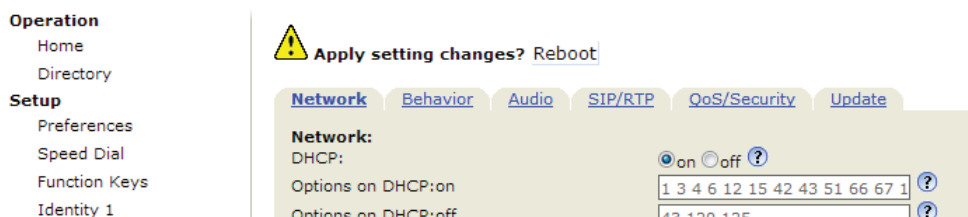
**Note:** Any changes you make will not take effect until you click on "Apply". Changes will be lost if you open another page of the web interface or if you close the web interface without first clicking on "Apply".

9. After you have clicked on "Apply", three buttons will appear at the top of the page.

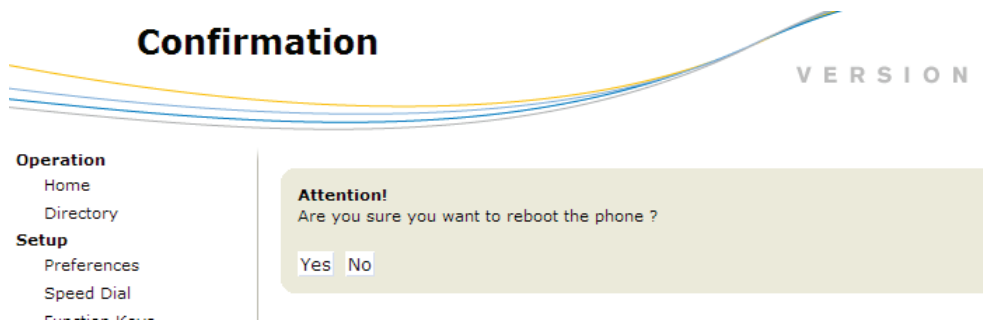


- a. Click on the "Save" button to save the changes permanently.
 

**Note:** Changes that have not been saved will be lost if and when the phone loses power or is disconnected from its power source.



- b. Click on the "Reboot" button. The **Confirmation** page will appear.



- c. Click on "Yes". The PA1 will save the new settings and restart. When the start-up with the network settings is complete, the red and the green LED will both be glowing steadily.

10. Continue with "Security settings".

## Security settings

When the web interface is opened for the first time upon initialization, you will see the Security page.



### Firmware versions below 8.7.4

We urge you to set administrator and HTTP passwords to protect the PA1 from remote attacks. The default administrator password is 0000 (4 zeros); there is no default HTTP password.

**Note:**

- If you do not replace the default administrator password by an individual one, an unauthorized third party could set an administrator password unknown to you. In such a case, you would no longer be able to switch from user mode to administrator mode. Unauthorized third parties would also be able to set the device back to factory values.

- If you do not set an HTTP password, you make it easier for third parties to break into your system.
- If you set your own passwords, be sure to write them down and store them in a secure place.

Without the administrator password, you will not be able to switch the web interface from user mode to administrator mode; the settings will be inaccessible.

Without HTTP password you cannot open the PA1's web interface.

If you do not wish to set an HTTP password, click on the respective button to turn off the reminder until the next reboot or permanently. If you change your mind later, you can set the password on the PA1's web interface, "Advanced"page > "QoS Security" tab > "HTTP Server" or turn off the warning later at Advanced > QoS Security > Security > Ignore security advices.

Continue with "Configuring accounts" on page 15.

### **Firmware versions 8.7.4 and higher**

When you register the first account, the SIP user name and password will be registered as the HTTP user name and password. If you wish to change them later, you can do so on the PA1's web interface > Advanced > QoS Security > HTTP Server.

#### **Note:**

- If you do not replace the default administrator password by an individual one, an unauthorized third party could set an administrator password unknown to you. In such a case, you would no longer be able to switch from user mode to administrator mode.
- If you set your own passwords, be sure to write them down and store them in a secure place.

Without the administrator password, you will not be able to switch the web interface from user mode to administrator mode; the settings will be inaccessible.

Without HTTP password you cannot open the web interface.

Continue with "Configuring accounts" on page 15.

## Configuring accounts

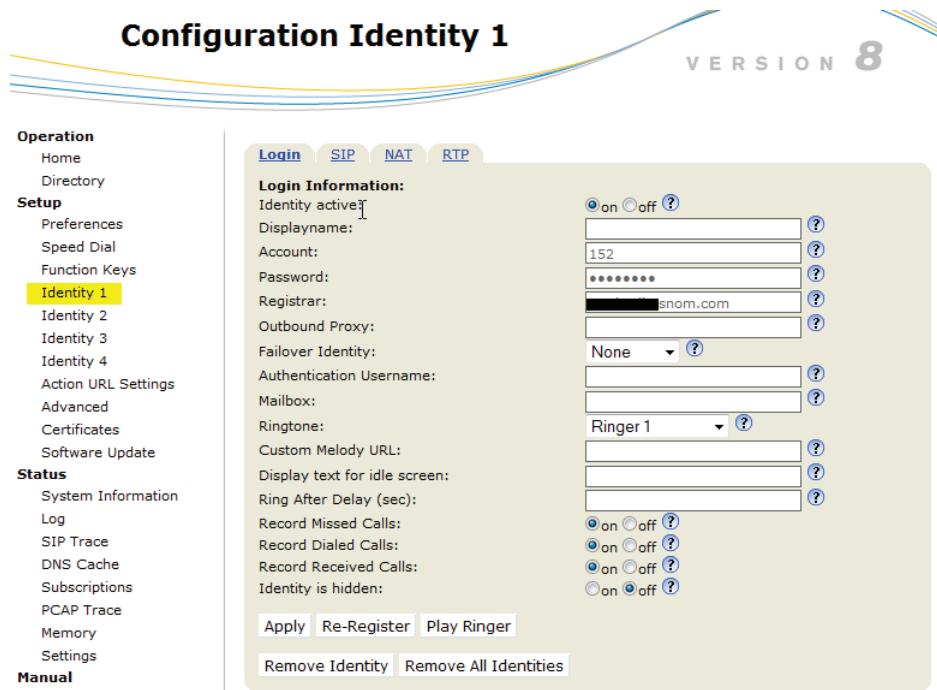
The PA1 supports up to four accounts (or identities, as they are called on snom devices) that can be used to make announcements over the loudspeaker connected to the PA1.

### Configuring identities automatically

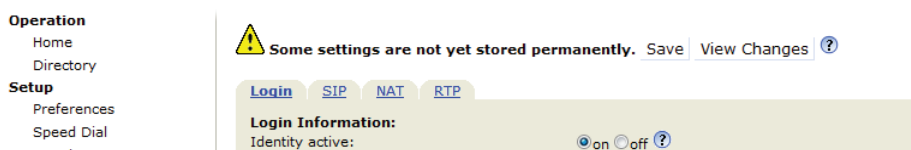
(recommended) by using the provisioning server. For more details on auto provisioning snom devices see [www.snom.com/wiki](http://www.snom.com/wiki).

### Configuring identities manually

In the menu on the left, click on "Identity 1". The page "Configuration Identity 1" opens with the "Login" tab active.



1. Enter the data required by your network in the text fields:
  - Account: Name/phone number.
  - Password: Password for your account, if necessary.
  - Registrar: Registrar address of your PBX software.
2. Click on "Apply" or "Re-Register". The "Save" button appears at the top of the page.



3. Click on "Save" to save the changes permanently. Changes that have not been saved will be lost if and when the phone loses power or is disconnected from its power source.

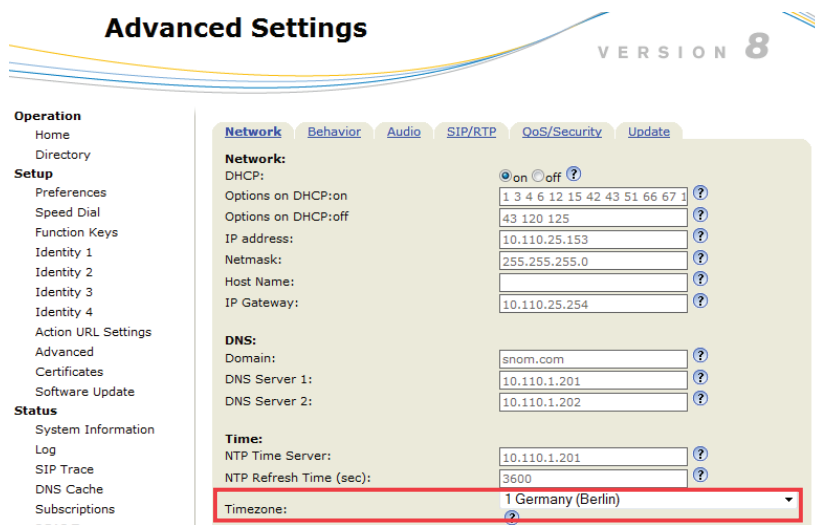
If the registration has been successful, the red "Power" LED will turn off. The green "Call" LED will stay on, indicating that the snom PA1 is ready to receive announcements.

# Settings

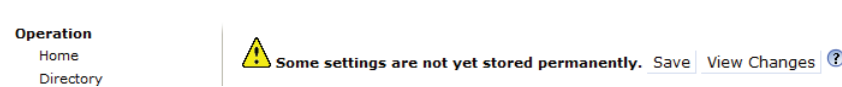
Normally, it is only necessary to set the time zone and the tone scheme. You can adjust the default settings for loudspeaker volume, amplifier gain, and automatically ending calls, as necessary or desired.

## Time Zone

1. Open the PA1's web interface.
2. Click on **Advanced** in the menu on the left side of the window page. The "Advanced Settings" page opens to the "Network" tab.

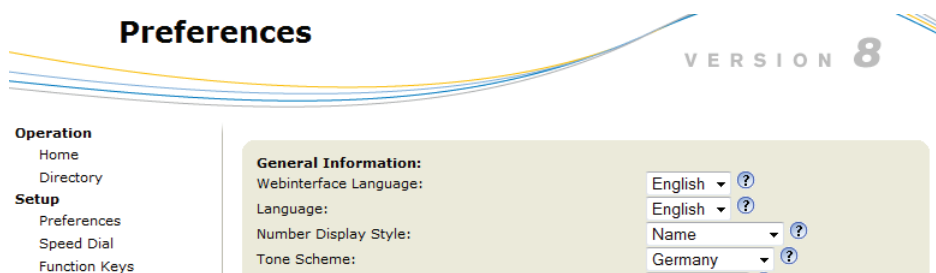


3. In the **Time** section select your time zone (i.e., country/city) from the drop-down menu of **Timezone**.
4. Click on "Apply" at the bottom of the page.
5. After clicking on "Apply", the "Save" button will appear at the top of the page. Click on "Save" to save the changes permanently in case of power loss.



## Setting Tone Scheme

1. Open the PA1's web interface.
2. Click on **Preferences** in the menu on the left side of the window page. The "Preferences" page opens.





3. In the **General Information** section select your country from the drop-down list of **Tone Scheme**.
4. Click on "Apply" at the bottom of the page.
5. After clicking on "Apply", the "Save" button will appear at the top of the page. Click on "Save" to save the changes permanently in case of power loss.

## Automatic termination of calls


This setting determines after how many seconds calls to the PA1 will be terminated. The default setting is 300 seconds.

1. Open the PA1's web interface.
2. Click on **Preferences** in the menu on the left side of the window page. The "Preferences" page opens.
3. In the **PA1 Controls** section, enter the number of seconds in the text field of **Phone ends call after set seconds**.

**PA1 Controls:**  
 Use reset button for dialing:  on  off ?  
 Phone ends call after set seconds:  ?  
 Speaker Volume (1-14):  ?  
 Amplifier Gain :  ?  
 Speaker :  on  off ?

4. Click on "Apply" at the bottom of the page.
5. After clicking on "Apply", the "Save" button will appear at the top of the page. Click on "Save" to save the changes permanently in case of power loss.

**Operation**  
 Home  
 Directory



 **Some settings are not yet stored permanently.** [Save](#) [View Changes](#) ?

## Adjusting the volume and the amplifier gain

1. Open the PA1's web interface.
2. Click on **Preferences** in the menu on the left side of the window page. The "Preferences" page opens.
3. You can change the default settings for speaker volume and amplifier gain in the **PA1 Controls** section.
  - Speaker Volume: Enter a number between 1 (low) and 14 (high) in the text field. The default setting is 10.
  - Amplifier Gain: Enter 0 or 1 in the text field. The default setting is 1.
4. Click on "Apply" at the bottom of the page.
5. After clicking on "Apply", the "Save" button will appear at the top of the page. Click on "Save" to save the changes permanently in case of power loss.

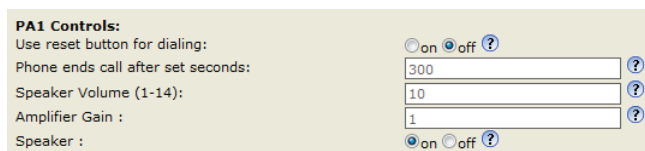
# Using the snom PA1

## Making announcements

Dial the phone number of the PA1 and, when your phone shows that you are connected, speak your announcement into its handset/headset/casing microphone. When you are done, terminate the call by hanging up or pressing the  /  key.

## Turning the loudspeaker on or off

1. Open the PA1's web interface.
2. Click on **Preferences** in the menu on the left side of the window page. The "Preferences" page opens.
3. In the **PA1 Controls** section click on the radio buttons **on/off** to turn the loudspeaker on or off.



**PA1 Controls:**  
Use reset button for dialing:  on  off ?  
Phone ends call after set seconds:  ?  
Speaker Volume (1-14):  ?  
Amplifier Gain :  ?  
Speaker :  on  off ?

4. Click on "Apply" at the bottom of the page. Then click on "Save" at the top of the page to save the changes permanently in case of power loss.

# Software update

Software updates can be done through provisioning from the server whose setting URL is specified on the PA1's web interface or by means of a manual update.

**CAUTION:** Cutting off the device's power during a firmware update (red LED on, green LED off) will damage the firmware and render the PA1 inoperational. In such a case, the PA1 will need to be returned to the vendor for a reset (special kit required).

**Do NOT** remove the device's power supply (Ethernet cable when using PoE, power adapter when not using PoE) when the red light is on or blinking; a firmware update is ongoing.

### LED indications

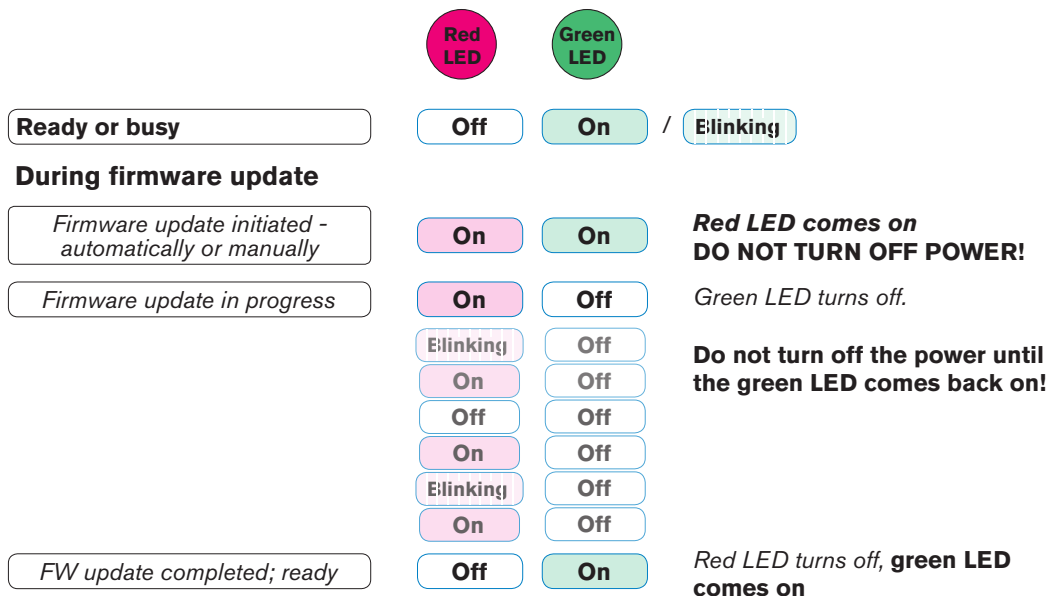


Fig. 1

## Provisioning software updates

Provisioning of updates can be done in two ways:

- Fully automatic with the setting **Update automatically**: Whenever a new firmware version is made available, the settings are downloaded from the settings server and the update is started automatically.
- Semi-automatic with the setting **Ask for update**: The settings are downloaded from the settings server automatically, but you are prompted to confirm any available update.

- Open the PA1's web interface.
- Click on **Advanced** in the menu on the left side of the window page. The "Advanced Settings" page opens.

- Click on the **Update** tab.

- Select **Update automatically** or **Ask for update** from the list box of **Update policy**.
- Enter the settings server's URL in the text field of **Setting URL**.
- Click the **on** radio button of **PnP Config**.
- Click on "Apply" at the bottom of the page. Then click on "Save" at the top of the page to save the changes permanently in case of power loss.

## Manual software update

If the current setting is updating through provisioning, whether automatically or semi-automatically, you must first change these settings.

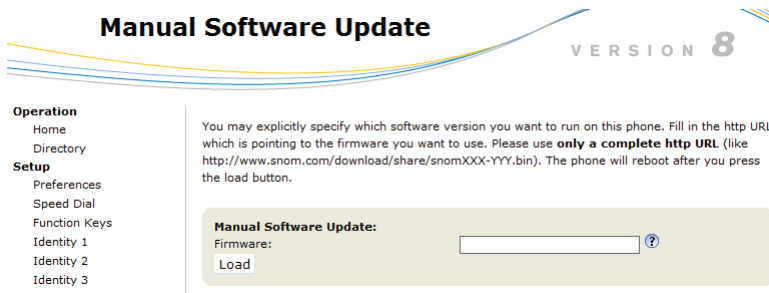
### Settings

- Open the PA1's web interface.
- Click on **Advanced** in the menu on the left side of the window page. The "Advanced Settings" page opens.
- Click on the **Update** tab.

- Select **Never update, do not load settings** from the list box of **Update policy**.
- Click the **off** radio button of **PnP Config**.
- Click on "Apply" at the bottom of the page. Then click on "Save" at the top of the page to save the changes permanently in case of power loss.
- Click "Reboot" and confirm with "Yes".

### Updating manually

- Open the PA1's web interface.
- Click on **Software Update** in the menu on the left side of the window page. The page "Manual Software Update" opens.

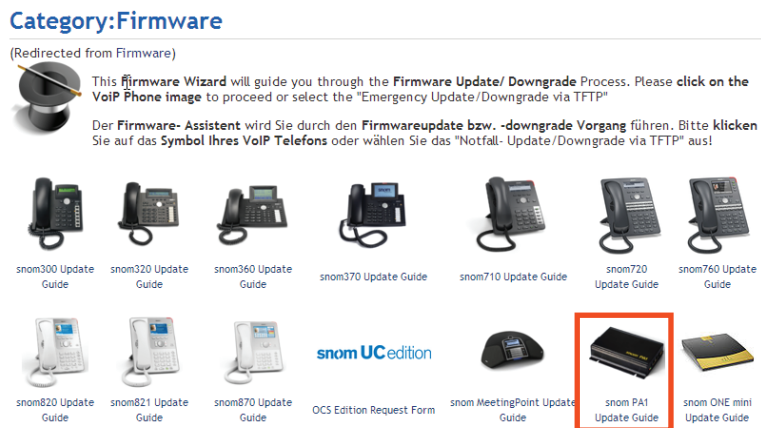


3. Enter the firmware link in the text field of **Upload Setting file manually**. Obtaining the firmware link:

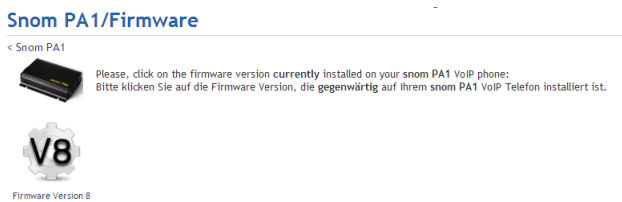
- a. Open snom's web page at www.snom.com.
- b. Click on Support > Download Firmware.



c. The Wiki page "Category Firmware" opens. Click on "snom PA1 Update Guide".



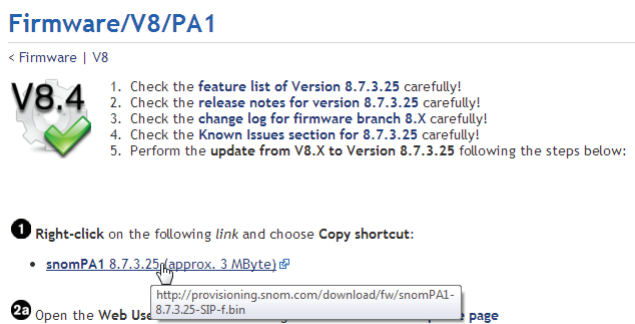
d. The snom PA1 "Firmware" page opens. Click on "Firmware version 8".



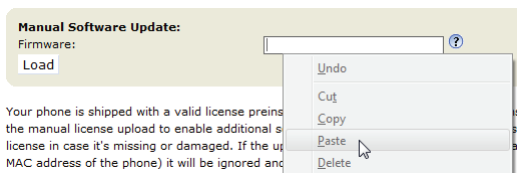
- e. The snom PA1 "Firmware/V8" page opens. Click on **Manual Update to Version ...**



- f. The "Firmware/V8/PA1" page opens. Right-click on the version's link, then click on **Copy shortcut** in the context menu.



- g. On the Manual Software Update page of the PA1, place the cursor into the textfield of **Firmware**, right-click, and click on **Paste**.



- 4. Click on **Load**.

The PA1 starts the firmware update, indicated by the red LED lighting up and the green LED going out. The firmware update is done when the red LED goes out and the green LED comes back on.

**CAUTION:** Cutting off the device's power during a firmware update (red LED on, green LED off) will damage the firmware and render the PA1 inoperational.

**Do NOT** remove the device's power supply (Ethernet cable when using PoE, power adapter when not using PoE) while a firmware update is ongoing.

Firmware update initiated - automatically or manually	<input type="checkbox"/> On <input type="checkbox"/> On	<b>Red LED comes on DO NOT TURN OFF POWER!</b>
Firmware update in progress	<input type="checkbox"/> On <input type="checkbox"/> Off	
	<input type="checkbox"/> Eilinking <input type="checkbox"/> Off	<b>Do not turn off the power until the green LED comes back on!</b>
	<input type="checkbox"/> On <input type="checkbox"/> Off	
	<input type="checkbox"/> Off <input type="checkbox"/> Off	
	<input type="checkbox"/> On <input type="checkbox"/> Off	
	<input type="checkbox"/> Eilinking <input type="checkbox"/> Off	
	<input type="checkbox"/> On <input type="checkbox"/> Off	
FW update completed; ready	<input type="checkbox"/> Off <input type="checkbox"/> On	<b>Red LED turns off, green LED comes on</b>

# Troubleshooting

## Reboot

1. Open the PA1's web interface.
2. Click on **Advanced** in the menu on the left side of the window page. The "Advanced Settings" page opens.
3. Click on the **Update** tab.
4. Click on "Reboot" and confirm with "Yes". The red LED lights up, and the green LED goes out. When the PA1 has finished rebooting, the red LED goes out, the green LED lights up, and the web interface is available again.

## Hard reboot



Disconnect the power, wait for a few seconds, and reconnect.

**Warning: Never disconnect the power during a firmware update!** Cutting off the device's power during a firmware update (red LED on, green LED off) will damage the firmware and render the PA1 inoperational.

In such a case, the PA1 will need to be returned to the vendor for resetting (special kit required).

**Do NOT** remove the device's power supply (Ethernet cable when using PoE, power adapter when not using PoE) when the red light is on or blinking; a firmware update is ongoing.

### LED indications

			
Ready or busy	Off	On	/ Elinking
<b>During firmware update</b>			
<i>Firmware update initiated - automatically or manually</i>	On	On	<b>Red LED comes on DO NOT TURN OFF POWER!</b>
<i>Firmware update in progress</i>	On	Off	Green LED turns off.
	Elinking	Off	<b>Do not turn off the power until the green LED comes back on!</b>
	On	Off	
	Off	Off	
	On	Off	
	Elinking	Off	
	On	Off	
<i>FW update completed; ready</i>	Off	On	Red LED turns off, green LED comes on

## Reset to factory values

Press the "IP/Reset" button to the left of the LEDs.

**Warning:** All customized settings will be lost! See "Initializing and Configuring the PA" on page 10 for information on how to initialize and configure the PA1 anew.

## Contacting snom Support

Please visit our knowledge base and our forum first. You may find the answer to your question in one of the topics there. If you haven't found an answer or a solution to your problem, please post your question or problem on the forum (<http://forum.snom.com>).

**Note:** The forum is accessible to the general public. Do not post any private and/or security-relevant information there. This includes MAC addresses, SIP headers, etc. that may allow others to hack into your system or use your identity for nefarious purposes.

If you haven't received an answer or solution within a reasonable amount of time (generally two work days), send the link to your posting to Support. You need to create a support account first, if you don't already have one.

### Creating a support account

1. Open snom's web page at [www.snom.com](http://www.snom.com).
2. Click on the Support tab to open the Support window.
3. Click on End Customer Support.
4. On the Support Center page, click on Register new account.
5. Fill out the form and click Register.
6. You will receive an automatic email. Click on the link to activate your account.
7. You will receive a second email containing your account name, email address, and password.

You can now submit tickets requesting support to snom Support.

### Submitting a ticket

1. Open snom's web page at [www.snom.com](http://www.snom.com).
2. Click on the Support tab to open the Support window.
3. Click on End Customer Support.
4. On the Support Center page, enter your email address and password and click on Login.
5. Click on "Ask for support".
6. Follow the instructions on the screen.



## Submitting system and settings information

### System information

1. Open the phone's web interface > Status > System Information.
2. Copy the text under System Information into your forum posting or into the email, if Support has asked you to contact them by email.

Make sure to delete the MAC address and the IP address, if the posting or e-mail can be read by the public.

### System information

Open the phone's web interface > Status > Settings. Make sure to delete private and/or security-relevant information like the MAC address, public IP address, etc.

## Traces

snom Support may ask you to submit a SIP Trace and/or a PCAP Trace to help them analyze your problem.

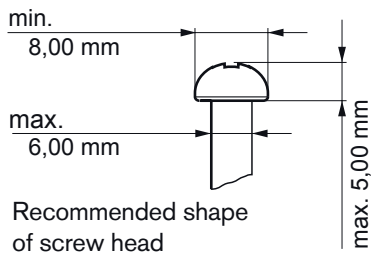
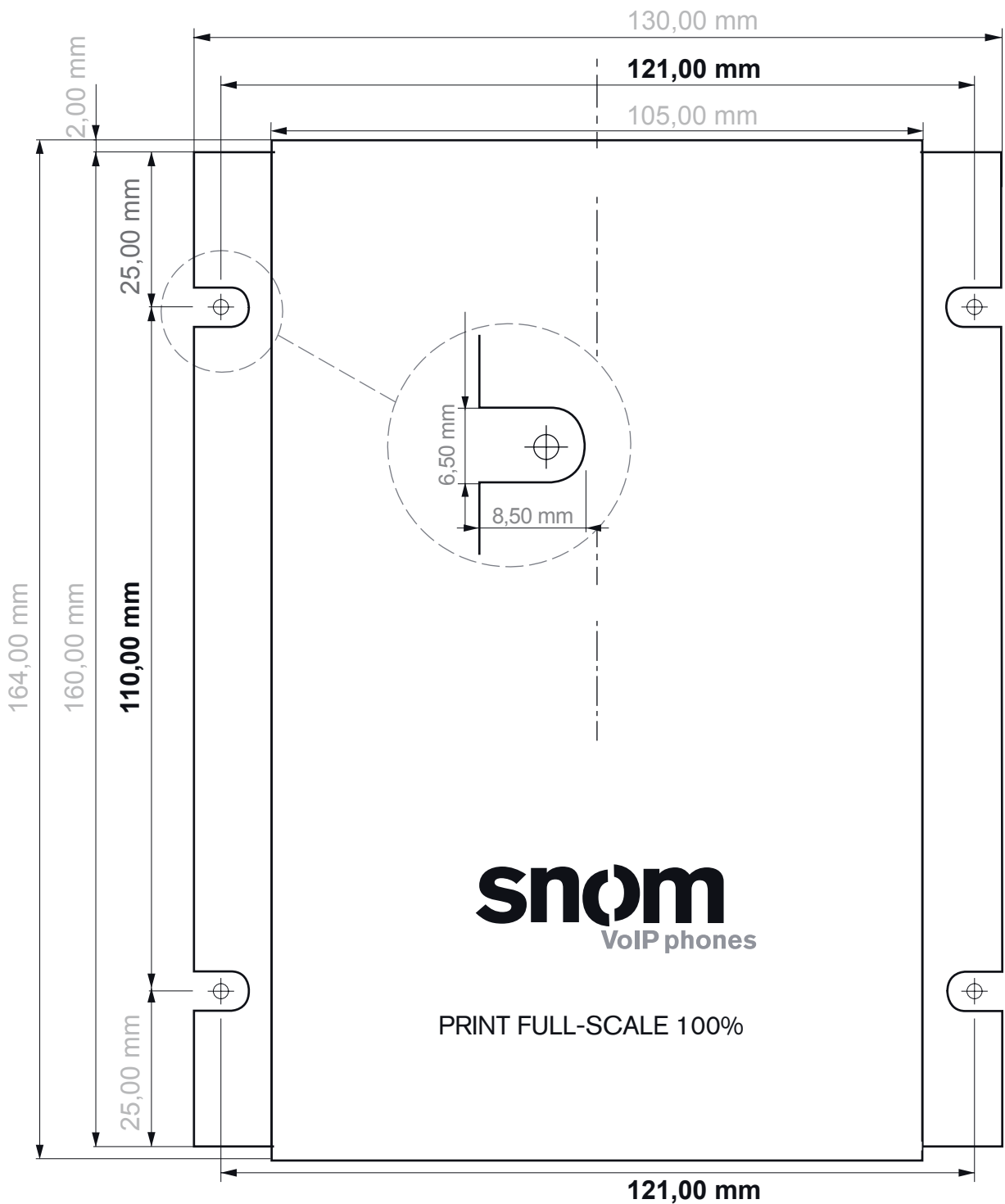
### Performing a SIP Trace

1. Open the phone's web interface > Status > SIP Trace.
2. Click on "Clear" to clear the page.
3. Recreate the error to be documented in the trace.
4. Click on "Reload".
5. Copy the text and submit to Support in whatever form they requested you to use.

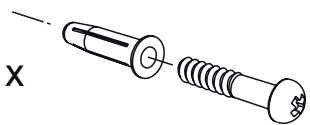
### Performing a PCAP Trace

1. Open the phone's web interface > Status > PCAP Trace.
2. Click on "Start" to start recording network traffic.
3. Click on Stop to end recording.
4. Click on the "here" link to open the file download window and save the file.
5. Submit the file to Support in whatever way they requested you to use.

Appendix 1 - Drilling Template PA1 Wallmounting



4 x



Use screws and expansion  
anchors suitable for your  
wall

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