1 Introduction

This document describes how to set up the Pulse System using:
- STENTOFON IP intercom stations
- STENTOFON IP speakers
- 3rd-party IP telephones
- IP telephone gateways
- STENTOFON IP DECT 300

1.1 System Overview

STENTOFON Pulse is an IP-based intercom system for up to 16 intercom stations. The system works with all STENTOFON IP intercom stations. In addition, it is possible to extend the system with up to 10 3rd-party SIP terminals and gateways.

In a Pulse installation, one of the STENTOFON IP intercom station is designated as the Pulse Server. The Pulse Server acts as a SIP server, managing how calls are set up and routed. In addition, the Pulse Server provides a single point for configuration of all intercom stations in the system. Any STENTOFON IP station can be the Pulse Server.

All IP intercom stations in a Pulse installation must be located on the same LAN (IP subnet).

2 Getting Started

The setup procedure for the Pulse system is as follows:
1. Plan the installation
2. Connect and set up Pulse Server
3. Connect other intercom stations
4. Configure directory (phonebook)
5. Configure call and audio settings
6. Configure call buttons and DAKs
7. Verify system setup

In addition to the above, you may optionally:
- Add SIP accounts for 3rd-party IP telephone and IP DECT
- Add SIP accounts for telephone gateways
- Modify Pulse station profiles

2.1 Plan the Installation

When planning a Pulse system, you have to:
- Decide on the type of IP intercom for each location
- Select which intercom station should be the Pulse Server (usually a master station)
- Assign directory (phone) number and name to intercom stations
- Assign IP addresses and settings

The installation plan may typically be as shown below:

Directory Number & Name

Directory Number is the number used to dial to the intercom station. It is recommended to use a two-digit number. Name is a logical name you can assign to the station.

IP Addresses & configuration

The Pulse Server station must have a static IP address. Other IP intercom stations may use static addresses or an automatic (DHCP) IP address assignment.

IP addresses must be unique in your network. These addresses are normally managed by the IT department. Hence, you should consult your IT department on the IP addresses to use in the network.

2.2 Connect and Set Up Pulse Server

2.2.1 Connecting Pulse Server to Network

Use a PoE Ethernet switch to connect the IP intercom station that should be the Pulse Server to the network.

STENTOFON IP intercom stations have two RJ45 network ports:
- LAN port is for connecting to the network
- AUX port is for connecting to auxiliary equipment such as a PC.
The IP stations support Power over Ethernet (PoE, IEEE 802.3 a-f) where power can be drawn from either the spare line or signal line.

If you decide not to use a PoE switch, the IP station can use a 24 VDC power supply. See the STENTOFON IP Station Manual for information on connecting local power supply.

### 2.2.2 Logging on to the Pulse Server

Access the Pulse Server station by logging into the web interface using a standard web browser:

1. Open a web browser
2. In the browser’s address bar, type 169.254.1.100 and press the ENTER key
   - 169.254.1.100 is the default IP address of the IP station
   - The station Login page is displayed.

To log into the station:

1. Click Login
2. Enter the default User name: admin
3. Enter the default password: alphaadmin

The Station Information page will now be displayed, showing the default IP master station configuration.

In order for your PC to communicate with the station it is necessary to change its Internet Protocol Properties to use an IP address that is in the same range as 169.254.1.100, e.g. 169.254.1.1 with subnet mask 255.255.255.0

### 2.2.3 Setting up Pulse Server

- Under the Station Main tab, click Main Settings to configure station mode and IP parameters.

**Station Mode**

Since this is the Pulse Server station, it will function as the server or exchange:

- Select the Use Pulse Server radio-button

**IP Settings**

- Select the Static IP radio-button
- Enter values for the IP address (e.g. 169.254.1.99), Subnet mask, and Gateway
- Click Save followed by Apply to restart the Pulse Server station.

### 2.3 Connect other Intercom Stations

Connect all other IP intercom stations to the network. Note that all other IP intercom stations have to be on the same LAN (IP subnet) as the Pulse Server.

Wait for the stations to boot up (approximately 60 seconds) before proceeding to the next step.

### 2.4 Configure Directory (Phonebook)

Log into the Pulse Server station with the new IP address (e.g. 169.254.1.99) that you have just set under Station Main > Main Settings. After login, you will find a new Server Management tab:

- Under the Server Management tab, select Server Configuration > Directory Settings

The Pulse Server station will auto-discover all the other stations on the LAN.

To identify the individual stations on the LAN:

- Click Play
  - You should now hear a tone from the station you selected.

You can now set directory numbers, names, IP addresses, profiles, etc. for all the stations in the network. In our example, the Pulse Server station is designated as Reception Desk with directory number 10 while the two substations are the Main Entrance and Rear Entrance with directory numbers 11 and 12 respectively.

- Click Save followed by Apply
  - When you click Apply, the Pulse Server will download the directory settings to all the STENTOFON IP intercom stations and do a system reboot.

Password is an optional field you can set to increase the security level. The password is used by other intercom stations to register with the Pulse Server.
2.5 Configure Call and Audio Settings

It is optional to configure the call and audio settings. Default settings will be used if they are not configured.

- Select Server Management > Server Configuration > Call and Audio Settings

The call and Call and Audio Settings menu include the following parameters:

**Autoanswer**
Auto-answer is typically enabled for substations and not for master stations.

**Disconnect By Button**
When disabled, the user cannot disconnect the call from this station. It is typically disabled on substations and enabled on master stations.

**Activate Relay On Event**
Most STENTOFON IP stations have a relay. Here, you can select the events that activate the relay. The available events are:

- DTMF <#> - Reception of a DTMF (keypad) digit from a remote station during the call
- Ringing
- In call

**Relay duration**
When the relay is activated, this parameter determines how long the relay should stay ON.

**Speaker Volume**
This parameter sets the speaker volume for the station.

**Noise Reduction**
This parameter enables active noise cancellation. For stations that are located in noisy environments, it is recommended that the noise cancellation level be set to 4.

The Direct Access Key Settings menu includes parameters to program Direct Access Keys (DAK) and Input Buttons (RCI).

**Direct Access Keys**
DAKs are function keys on the IP master station. On some IP stations, there is a red and green LED associated with the DAK.

A DAK supports the following functions:
- Call To
- Select Line

The Call To parameter sets the directory number to call to when the key is pressed.

The Select Line parameter assigns the key to a line. You can have multiple lines on an IP master station. The active line is indicated by a green LED. You can change the line by pressing the associated DAK. Lines that have an active call are indicated by a red LED.

**Input Buttons**
Input Buttons are the buttons on IP substations. Input Buttons can also be used as external call buttons connected to the RCI input on the IP substation and master station PCB.

- Under Value you can enter the directory number to call to when the button is pressed.

2.6 Configure Call Buttons & DAKs

- Select Server Management > Server Configuration > Direct Access Key Settings
  and select the station to set single-touch access to your most frequently used directory numbers and functions.

All stations that have been configured should be displayed in the table. Stations that are up and running will have the status *Registered*.  

2.7 Verify System Setup

To verify that your system is up and running:

Select Server Management > Server Monitoring
3 Optional Configuration

3.1 Add SIP Accounts for 3rd-party IP Telephone and IP DECT

Install license
Before adding SIP accounts to your system, you need to obtain the Pulse 3rd Party SIP Terminals license key.

To install a license:
- Under the Station Administration tab, select Licensing

Enter the license key in the New License field and click Insert License

The license table should now show all the licenses that are available.

Create SIP station account
- Under the Server Management tab, select Server Configuration > Directory Settings

Create SIP gateway account
- Under Gateways set the following values:
  - Directory Number: 0
  - Name: <name of your choice>
  - Profile: Gateway
- Click Add followed by Save

Configure telephone gateway
You now have to log into the telephone gateway to configure it for communicating with the Pulse Server station through SIP.

3.2 Add SIP Accounts for Telephone Gateways

Install license
Before adding SIP accounts to your system, you need to obtain the Pulse Gateways license key and install it under Station Administration > Licensing.

Create SIP gateway account
- Under the Server Management tab, select Server Configuration > Directory Settings

Configure telephone gateway
You now have to log into the telephone gateway to configure it for communicating with the Pulse Server station through SIP.

3.3 Modify Pulse Station Profiles

The Station Profile defines a set of service features and parameters that are available for a group of stations.

The Pulse system can have five station profiles:
- Profile 1 - Default
- Profile 2 - Substation
- Profile 3 - Display station
- Profile 4 - Operator
- Profile 5 - Gateway

The following service features and parameters are included in the station profile:
- Door opening including remote I/O
- Outgoing call restriction
- Group Call and Busy Override restriction

To modify station profiles:
- Select Server Management > Station Profiles