

# COMfortel D-400

## Advanced Information



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# About these instructions

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## Trademarks

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## Instructions

You will find the Operating Manual and the Quick Guide on our web site. After a firmware update, you usually require a new version of the instructions. You will find these on our website.

# Functions, Applications, Concepts

Information about the section

Anonymous call

Apps

Automatic Start of Call

Call

Call forwarding

Call type

Call waiting

Caller list

Certificates

Conference calls

Contacts

Data Backup

Date and Time

Device Information

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Sound

Speed dial

S RTP

Transferring calls

User

Voicemail number

XML Minibrowser

## **Information about the section**

This section describes how to set up and use the functions on your phone.



## Anonymous call

The **Anonymous call** function enables the caller to make a call without revealing their subscriber number to the person being called. They can choose to do this or not, for each individual call.

**i Note:** Anonymous calls are not possible with some VoIP providers. If you intend to use this function, first ask your provider if this service attribute is supported. This function can only be used on one of the PBX's land line connections if the CLIR (case-by-case restriction of calling line identification) service feature has been requested from, and activated by, the network provider.

---

### Requirement for use

- The CLIR (suppression of subscriber number display per call) service feature has been enabled by the network operator.

---

### Configuration

With the Configuration Manager:

- **Telephony > Anonymous Call**

Or directly on the phone:

- **Settings > Telephony > Anonymous Call**

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)


**i Note:** When you configure an identity, ensure that you select the same CLIR (number presentation suppression) type as is set on the PBX/at

## Anonymous call

the provider. You will find more information on configuring an identity in **Identities** > [Options for Experts](#) (Configuration Manager) or in **Settings** > **Identities** > [Basic Settings](#) (phone).

## Apps

Apps are application programs which are installed on the telephone. Apps are used to control functions or set up the telephone. The telephone is delivered with a variety of preinstalled apps. You can download apps from the Internet to add new functions to your telephone.

 **Important:** If you install additional apps, the telephone's functionality may be affected, including loss of use. When the Auerswald service team or Auerswald's specialised dealer checks the telephone, it is reset to its factory settings. This process removes any previously installed applications and data, so these must then be reinstalled separately.

Not every available app is compatible with your telephone.

---

### Configuration

Directly on the phone:

- **Settings > Apps**

 For more information, see [Apps](#).

Or using provisioning:

 For more information, see the [Auerswald DokuWiki](#).

## Automatic Start of Call

When you finish typing a subscriber number, the call starts automatically in the receiver, headset or in hands-free calling mode, after the predefined time, depending on selected speech channel. You do not need to do anything else to start the call, such as pick up the receiver or press OK




---

### Configuration


With the Configuration Manager:

- **Telephony > Automatic Start of Call**

 You will find more information on this subject in the [Automatic Start of Call](#) topic.

Or directly on the phone:

- **Settings > Telephony > Automatic Start of Call**

 You will find more information on this subject in the [Telephony](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## Call

You can use the phone to make internal (on the PBX) and external calls.

---


### Information about a Call

During a call, you see information about the call and your call partner on the screen, as well as general time information (date and time).

---

### DTMF signals

The selected numbers and characters are displayed in the screen for some seconds and you can hear the associated sound.


 You will find more information on this subject in the [Call](#) topic.

---

### Accepting a call

A call that has been taken on a different internal phone can be picked up, provided that call pick-up has been permitted on the PBX for the subscriber that is being called. The procedure is similar to the one for [Pick-Up](#).


This function is useful when dealing with answering machines, for example.


 You will find more information on this subject in the [Call](#) topic.

---

### Ending a call

When your call partner ends the call, your phone goes into its idle state. If you hang up the receiver, you will hear the busy signal through the base unit loudspeaker if the receiver has been hung up incorrectly.

 **Note:** If you would like to end the current call, and then immediately make a new call, Press the **End** soft key and then start dial the next number.

 You will find more information on this subject in the [Call](#) topic.

## Call forwarding

General

Immediately

On busy

On no reply

## General

When call forwarding is used, internal and external calls to a single phone can be rerouted to other internal phones or external connections. This enables calls that arrive on this phone to be taken on another phone. Call forwarding ensures that the relevant subscriber can always be reached using their own phone number, even when they cannot take the call on their own phone.

You can make the following settings:

- Type of call forwarding (Immediately, On busy, By time)
- Call forwarding destination
- Waiting time before CF



## Immediately


Is **Call forwarding immediately** is configured on the phone, the phone does not ring when there is an incoming call. The call is forwarded to the entered call forwarding destination. The call can be taken there.

---

### Configuration


With the Configuration Manager:

- **Telephony > Call forwarding > Immediately**

 You will find more information on this subject in the [Call forwarding](#) topic.

Or directly on the phone:

- **Settings > Telephony > Call forwarding > Immediately**

 You will find more information on this subject in the [Telephony](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## On busy


If **Call forwarding on busy** is configured on the phone, another incoming call during an active call is not signalled. The call is forwarded to the entered call forwarding destination. Even if call waiting (with or without call waiting tone) is configured on the phone, another incoming call during an active call is not signalled.

---

### Configuration


With the Configuration Manager:

- **Telephony > Call forwarding > On busy**

 You will find more information on this subject in the [Call forwarding](#) topic.

Or directly on the phone:

- **Settings > Telephony > Call forwarding > On busy**

 You will find more information on this subject in the [Telephony](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## On no reply


If **Call forwarding On no reply** is configured on the phone, an incoming call that is not taken within the set signalling time is forwarded to the entered call forwarding destination.

---

### Configuration


With the Configuration Manager:

- **Telephony > Call forwarding > On no reply**

 You will find more information on this subject in the [Call forwarding](#) topic.

Or directly on the phone:

- **Settings > Telephony > Call forwarding > On no reply**

 You will find more information on this subject in the [Telephony](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## Call type

During operation on a PBX:

- External call
- Internal call
- Group calling (a call made to a specific group)
- External recall
- Internal recall

## Call waiting

Call waiting signals incoming calls during a call.


A call is signalled by

- a tone
- a message on the screen

---

### Requirements for use

- If only one identity is set on the phone, call waiting must be switched on, on the PBX, or enabled by the provider.
- Alternatively, you can set up several identities on the phone.


 You will find more information on this subject in the [Identities](#) topic.

---

### Configuration


With the Configuration Manager:

- **Telephony > Call waiting**


 You will find more information on this subject in the [Call waiting](#) topic.

Or directly on the phone:

- **Settings > Telephony > Call waiting/Call waiting tone**

 You will find more information on this subject in the [Telephony](#) topic.

Or using provisioning:

 You will find more information on this subject in the [Auerswald DokuWiki](#) topic.

---

## Process

1. During a conversation, a call waiting call is signalled.  
If the audible indication is switched, you hear a tone. Otherwise, you only see a message on the screen. The call waiting caller hears the ringing tone.
2. You can do one of the following:
  - Reject the call waiting call.  
The call waiting caller hears the busy signal.
  - You take the call waiting call.  
You are then connected with the call waiting call. The previous call partner is held.
  - You disconnect the current call by hanging up.  
Your phone rings. You can accept the call as usual.
  - You forward the call waiting call.  
The call waiting caller also hears the ringing tone until the called person lifts their handset. You are now connected to the first call partner.

## Caller list

[Overview: All call lists](#)

[Redial List](#)

[Missed Calls](#)

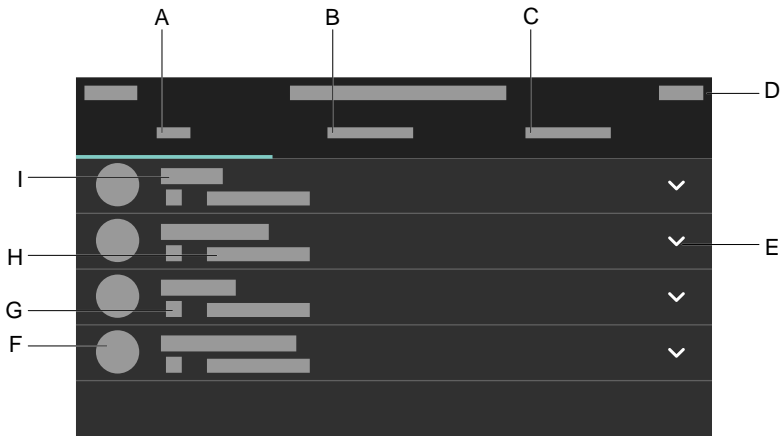
## Overview: All call lists

Calls (whether incoming, outgoing or missed) are stored in the caller list, with the communication partner's subscriber number and the call's clock date and time.

A maximum of 50 subscriber numbers can be saved. If more than 50 calls from different subscriber numbers come in, the oldest entry is overwritten.

**i Note:** If several (incoming, outgoing or missed) calls with the same subscriber number occur once after the other, they are grouped and displayed as a single call.




### Overview of call lists



- A. **ALL** call history: Lists all calls by how recent they are.
- B. **MISSED** call history: Lists all calls, sorted chronologically.
- C. **OUTGOING** call history: Lists all outgoing calls, sorted chronologically.



- D. Status bar: Displays the Clock date, Clock Time and, if required, other system icons
- E. Displays a list containing these options:
  - **Call details**
  - **Edit number before call**
  - **Add contact**
  - **Delete from list**
- F. Profile picture
- G. Call type icon
- H. Call time and date
- I. Phone number/Contact



**i Note:** Tap on a contact in the list to dial it. To remove entries from a call list, press the Delete key . To delete the entire list contents, press the Delete key  for approx. 2 seconds and then press **OK** to confirm the screen message you see next. Press Back  to leave the call history.

## Redial List

The last 50 subscriber numbers dialled are saved in the redial list. The subscriber numbers are saved with the date and time of dial (or, for multiple dial attempts, the date/time of the last attempt).




---

### Accessing the redial list

- Press the Redial list button 
- or
-  > List **OUTGOING**

---




### Calling from the redial list

- Pick up the receiver
- or
- OK 
- or
- Headset 
- or
- Loudspeaker 
- or
- Tapping on an entry

---

### Deleting Entries from the Redial List

## Redial List



- Individual entry: Clear   
**or**
-  open list >  **Remove from list**  
**or**
- Entire list: Clear  (approx. 2 seconds)

## Missed Calls

The "Only missed calls" list contains the last 50 missed subscriber numbers. The subscriber numbers are saved with the date and time of dial (or, for multiple dial attempts, the date/time of the last attempt).




---

### Accessing the List of Missed Calls

- Message 
- or
-  > List **Missed**

---




### Calling from the List of Missed Calls


- Pick up the receiver
- or
- OK 
- or
- Headset 
- or
- Loudspeaker 
- or
- Touch entry

---

### Deleting Entries from the List of Missed Calls

## Missed Calls

- Individual entry: Clear   
**or**
-  open list >  **Remove from list**  
**or**
- Entire list: Clear  (approx. 2 seconds)

 **Note:** You cannot use the Message button to display seen missed calls if the screen has been set to Disabled in the **Display and LED > Seen missed calls** menu option.

## Certificates


External connections are encrypted to prevent listening in. The processes used to set up and shut down a connection, and signalling, are all encrypted by SIPS.

---

### Configuration


With the Configuration Manager:

- **Identities > Options for experts > SIPS**
- **Identities > Options for experts > Certificate**
- **Identities > Options for experts > Check hostname**

 For more information, see [Options for experts](#).

Or directly on the phone:

- **Settings > Identities > Security > SIPS**
- **Settings > Identities > Security > Certificate**
- **Settings > Identities > Security > Check hostname**

 For more information, see [Security](#).

Or using provisioning:

- For more information, see the [Auerswald DokuWiki](#).

## Conference calls

During a conference call you are talking with two subscribers at once.

All the options listed above are for a conference call that you have initiated yourself, see also [Conference calls](#).

The following actions are possible during a conference call:

---


### Splitting a call

During a conference call, you can talk to one of the two subscribers in turn, and put the other subscriber on hold in the background. You do not have to end the conference call, to do so.

---

### Connecting the other two conference call partners to each other

If you would like to leave a conference call, but the conference call partners would like to continue talking with each other, you can connect the two parties with each other.

 **Note:** To enable you to connect two external subscribers with each other, **Transfer of external calls to external** authorisation must be granted on the PBX.

---

### Splitting a conference call

The conference call is cancelled. One subscriber is put on hold and there is an active connection with the other subscriber. You can change between holding a call and an active call.

---

### Holding a conference call and initiating an additional call

The entire conference call is held. The conference call partner hears music on hold. When the call ends, the conference call can be continued.

---

### **Ending a call with a conference call partner**

You can end the call with a specific conference call subscriber and then keep talking to the remaining subscribers. This also applies if one of the conference call partners hangs up.


---

### **Ending a conference call completely**

If you initiated the conference call, you can end the conference call completely.



## Contacts

Use  to display saved subscriber numbers with names.

If a subscriber number associated with a contact is transmitted during a call, the assigned name will be displayed (instead of the subscriber number).

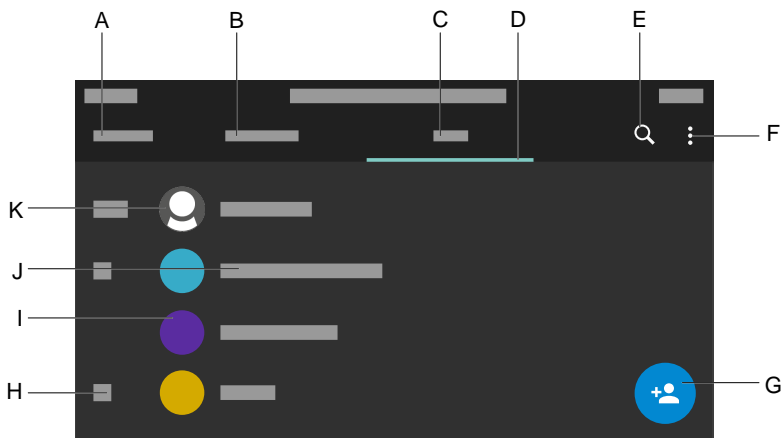
Additional subscriber number can be saved for each contact.

In addition, the internal subscriber numbers (subscribers, groups, emergency call) are displayed.

All contacts are displayed in alphabetical order in the contact list.

Contacts to whom calls are made frequently can also be displayed in the Favorites list.

### Contacts overview

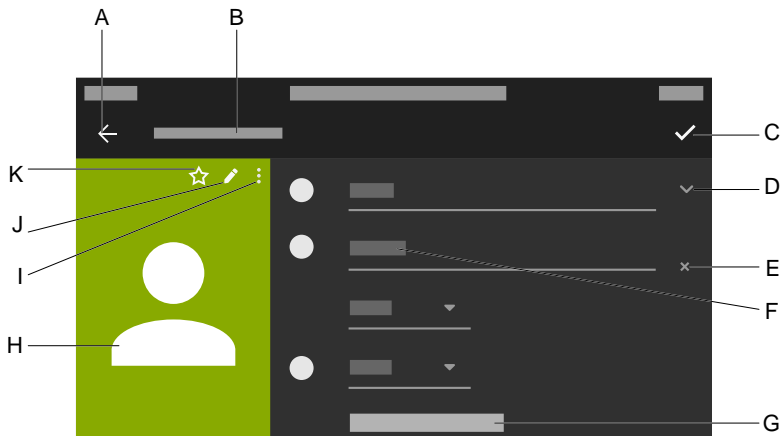


- A. Title of the current application: **Contacts**
- B. **Favourites**: Displays the contacts marked with a star.
- C. **All**: Displays all saved contacts.

## Contacts

- D. Displays the currently active list.
- E. Displays the search window.
- F. Displays more options.
- G. Opens the **Add Contact** menu.
- H. Alphabetical register
- I. Contact profile consisting of a coloured circle and an abbreviated name.
- J. Displays the saved name.
- K. ICH Contact, always in 1st place.


## Edit Contact



- A. Jumps to the **Contacts** menu.
- B. Title of the current application: **Add Contact**.
- C. Saves all the entries for the contact.
- D. Displays options for the entries that have been made.
- E. Removes entries that have been made.
- F. Enables you to fill in the field using the keypad or screen keyboard.

G. **Other fields**

H. Profile of the contact you have created.

 **Note:** Options I, J and K are only displayed for an existing contact, not for a contact that has just been created.

I. Displays the **Delete** option.


J. Edit an existing contact.

K. Marks the selected contact as a Favourite.

## Data Backup

During a data backup, a backup file is created that contains the configuration and other data for the phone. If required, this backup file can be uploaded to the phone again.

A data backup can, for example, be useful if the phone is reset to its default settings and it is not planned to completely reconfigure it.

 You will find more information on this subject in the [Reset to default](#) topic.

---

### Requirement for use


- A data backup involves protected data. Before downloading starts, you must acknowledge that in the dialog window.

---

### Configuration

With the Configuration Manager:

- **Backup**

 **Important:** Note the following legal notes before backing up the data. The data backup includes these elements with special legal protection:

- The phone's configuration
- Names of internal subscribers
- Passwords set for the telephone, subscribers, VoIP accounts and VoIP subscribers
- The phone's address books

## Data Backup

- Connection data sets with destination, source, and time information of a telecommunication connection

All the phone's users must be informed that this content will be transferred, and who will process the data obtained, before a backup is created. It is essential to store the data securely and in accordance with legal requirements. You must ensure that all legal requirements are met if you want to supply the data backup to your specialised dealer or the manufacturer for error analysis.

 For more information, see [Backup](#).

## Date and Time

The date and time are displayed in the phone's status line.

The date and time are needed to log incoming, outgoing and missed calls and to control various functions on the phone, such as automatic updates.

---

### Configuration

With the Configuration Manager:


- **Date and Time > Basic Network Settings**

Or directly on the phone:

- **Settings > Date and Time**

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

 **Note:** If you change the time zone, the time stamp assigned to all data on the phone is adjusted to suit the new time zone.

## Device Information


If required, you can display detailed information about the phone.

---

### Display Options


In the Configuration Manager:

- **Start**

 You will find more information on this subject in the [Status Information](#) topic.


Or directly on the phone:

- **Settings > About phone**

 You will find more information on this subject in the [About phone](#) topic.

## Dial a Subscriber Number Manually

**!** **Important:** Always enter external subscriber numbers with a leading exchange line access number. In the default settings, the PBX's exchange line access number is "0", but it can be changed in some PBXs (refer to "Advanced Information for the PBX").

**i** **Notes:** When dial through a standard SIP account, you can prevent the local area code from being output automatically by entering a leading "#" and thereby reach the VoIP provider's voice mailbox, for example. If you would like to exit dial preparation without dial the subscriber number entered, press Back .



## Display and LED

Settings in the Display and LED menu adjust the device to suit existing conditions at its place of use and your preferences. They affect the following:


- Potential device idle state
- Phone display brightness
- The brightness on all key extension modules that are connected
- The way the Message LED behaves.

---

### Configuration


With the Configuration Manager:


- **Display > Basic Network Settings**

 For more information, see [Display](#).

Or directly on the phone:

- **Settings > Display and LED**

 **Note:** To display the slider, used to set the brightness, you can also drag the status bar out of the top display edge.

 For more information, see [Display and LED](#).

Or using provisioning:

- For more information, see the [Auerswald DokuWiki](#).

---

### Process

### **Configuration Manager:**

- Select the time after which the telephone goes into idle state.
- Push the sliding adjuster to the left to reduce the brightness/contrast.
- Push the sliding adjuster to the right to increase the brightness/contrast.

### **Phone:**

- You can use the direction buttons on the directional pad to adjust the brightness and contrast in the menu:
  - The more you press the ◀ button, the more the brightness/contrast is reduced.
  - The more you press the ▶ button, the more the brightness/contrast is increased.
- You can use the sliding adjuster to reduce the brightness and contrast:
  - Push the sliding adjuster to the left to reduce the brightness.
  - Push the sliding adjuster to the right to increase the brightness.
- Make settings in the **Seen missed calls** and **Heard voice messages** menu options (only voicemail messages) to adjust the way the message LED works to suit your preferences.

## Do not Disturb

If Do not disturb is enabled, inbound calls are rejected.

The caller hears the busy tone.


The Do not disturb function has no effect on dialled calls and callbacks.

---

### Configuration


With the Configuration Manager:

- **Telephony > Do not Disturb**


 You will find more information on this subject in the [Do not Disturb](#) topic.

Or directly on the phone:

- **Settings > Telephony > Do not disturb**

 You will find more information on this subject in the [Telephony](#) topic.

Or using provisioning:

 You will find more information on this subject in the [Auerswald DokuWiki](#) topic.

## Firmware Update

A firmware update involves updating the firmware To add new features and resolve any problems that might exist. Here, the device sets up a connection with an update server, from which it downloads the latest firmware. (The settings on the device remain unchanged). There are three ways to carry out a firmware update:

- Manual update
- Automatic update
- Provisioning

---

### Requirements for configuration

- Connection to a broadband Internet connection
- Address of the update server

---

### Manual Update


During a manual update, the downloading of the update is triggered manually. After the update, the phone restarts automatically.

---

### Configuring a manual update


With the Configuration Manager:

- **Firmware Update > Basic Network Settings**

 You will find more information on this subject in the [Basic Settings](#) topic.

Or directly on the phone:

- **Settings > Firmware Update**

 You will find more information on this subject in the [Firmware Update](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

---

### Manual update process

1. Enable **Check for updates**
2. Enter the Update server URL  
In the default settings: <https://update.auerswald.de>
3. **Configuration Manager**: Press the **Start update** button  
**Phone**: Press the **Install** soft key as soon as the message that a new firmware version is available is displayed on the screen.

---

### Automatic update


In the case of an automatic update from the update server, a regular (e.g. weekly) automatic update can be configured. You can set the weekday and time.

---

### Configuring an automatic update


With the Configuration Manager:

- **Firmware Update > Basic Settings**

 You will find more information on this subject in the [Basic Settings](#).

Or directly on the phone:

- **Settings > Firmware Update**

 You will find more information on this subject in the [Firmware Update](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

 **Note:** It can take up to 60 minutes to perform an automatic update.

---


## Automatic update process

1. Enable **Automatically install updates**
2. Enter the **Update server URL**

In the default settings: <https://update.auerswald.de>

3. **Configuration Manager:**

Set the **Weekdays** and **Clock Time**.


 **Note:** When you set the Weekday/Clock Time for an automatic update, the system checks for new firmware during this time period and downloads and installs it if necessary. If automatic update is not enabled, the system only checks for a newer version of the firmware during this time period. If there is a newer version of the firmware, you are informed in a message on the screen.

---

## Provisioning

During provisioning, the phone is automatically configured via a provisioning server. Here, the phone sets up a connection with a provisioning server, over which it receives the necessary configuration data. A firmware update is then carried out.


## Firmware Update

 You will find more information on the provisioning process in [Provisioning](#).

## Function keys

The basic version of the device has 20 touch function keys which you can program to suit your needs. Each function key has a multi-colour display that indicates its status, based on its assignment.

The number of programmable function keys on the COMfortel<sup>®</sup> D-400 can be extended by adding up to three COMfortel<sup>®</sup> D-XT20 key extension modules (not included in the scope of delivery). Modules are attached to the right-hand side of the phone.

 **Note:** If you connect more than one key extension module, use a COMfortel<sup>®</sup> D-XT-PS power supply unit (not in the scope of delivery).

The programmable function keys on the key extension module can each be defined three times (on three levels). Consequently, in the fully extended system, there are 200 programmable settings.

---

### Configuration

With the Configuration Manager:


- **Function keys**

 For more information, see [Function keys](#).

Or directly on the phone:

- **Settings > Function keys**

or

- In the touch function keys area on the home screen >  **Add entry**



 For more information, see [Function keys](#).

Or using provisioning:

- For more information, see the [Auerswald DokuWiki](#).

---

## Process for assigning function keys using the phone

1. Select a key (a new one, or one that you want to edit).  
**Phone:** Keys with functions assigned to them are displayed in the list, with a number  
**Key extension module:** All keys that have a function assigned to them shine orange.
2. If necessary, use the control rocker to switch key level (only on the key extension module).
3. Press the key to which a function is to be assigned.  
The selected key flashes orange.
4. Select the function that is to be assigned to the key.
5. Set other necessary parameters, if necessary.
6. Press **OK** to confirm your entries.  
The assigned key label is displayed on the display.  
The key can be used with the function that has been assigned to it.

 For more information, see [Function keys](#).

---


## Process for assigning function keys using the Configuration Manager

1. Select a button to which a function has not already been assigned.
2. Change to the right level, if required (**Level 1– 3** tab, only extension module).

3. Select the function that is to be assigned to the button.
4. Set other necessary parameters, if necessary.
5. Save your settings.

The assigned key label is displayed in the screen.

The button can be used with the function that has been assigned to it.

 You will find more information on this subject in the [Edit function keys](#) topic.

---


### Extending the range of functionality using provisioning

You can use the templates in a provisioning file to extend the range of functions on the phone. These additional functions can be assigned to function keys.

Requirement for use


- Provisioning from PBX search enabled, see [Provisioning](#)
- PBX firmware from Version 7.4
- Suitable template < > phone assignment on the PBX

During the next provisioning process, the configurations in the template file are loaded into the phone. The additional PBX functions are in the **Choose a function** menu (phone) or **Function** menu (configuration manager) and can be assigned to the function keys.

 You will find more information on this subject in the [Provisioning](#) topic and in the [Auerswald DokuWiki](#).

## Hands-free calling mode

During hands-free calling, the loudspeaker and microphone on the device are switched on. This enables you to phone if you don't have a hand free. Other people in the room can take part in the call.

 **Note:** You will find more information on conversations in hands-free calling mode in [Hands-Free Calling](#).

## Headset mode

A headset enables you to participate in calls without actually holding the receiver, unlike when you use a receiver. Corded headsets and cordless headsets with a DHSG interface are supported.

A headset must be plugged in for these functions to work:

- Initiating headset calls
- Transferring an active call to the headset
- Ending a call in headset operation
- Initiating the listen-in function on the receiver
- Ending the listen-in function through the receiver

## Identities


General

PBX

VoIP provider

## General

An identity contains all the configuration data needed to register on a PBX/ with the provider and to enable telephoning. Up to 6 identities can be configured for the phone.

 **Note:** If you delete an identity, you must first back it up to a data storage device, if you want to restore it later.

# PBX

---

## Requirements for configuration

- You need to know the internal subscriber number for the phone entered in the PBX configuration
- You need to know the password entered in the PBX configuration
- You need to know the IP address set for the phone on the PBX
- The PBX must support the different codecs.


 See [Codecs](#)

---


## Configuration


With the Configuration Manager:


- **Identities** > Display settings  > **Basic Settings**

 You will find more information on this subject in the [Basic Settings](#) topic.

- **Identities** > Display settings  > **Options for experts**


 You will find more information on this subject in the [Options for Experts](#).

- **Identities** > Display settings  > **Codecs**


 You will find more information on this subject in the [Codecs](#) topic.

Or directly on the phone:

- **Settings > Identities**

 You will find more information on this subject in the [Basic Settings](#) topic.


Or using provisioning:


 You will find more information on this subject in the [Auerswald DokuWiki](#).

---

### Process for configuring an identity using the Configuration Manager

1. Enter the data specified by the PBX and make settings

 **Note:** SIP Username = internal subscriber number as assigned on the PBX, SIP Registrar = the PBX's IP address


2. Enable an identity 

---

### Process for configuring an identity using the phone

1. Select one of six possible identities from the list and confirm your choice

2. Enter the data specified by the PBX and make settings

 **Note:** SIP Username = internal subscriber number as assigned on the PBX, SIP Registrar = the PBX's IP address

3. Enable an identity



## VoIP provider

---

### Requirements for configuring an identity

- You need to know the user name assigned by the VoIP provider
- You need to know the password assigned by the VoIP provider
- You need to know the Authentication ID assigned by the VoIP provider
- You need to know the IP address assigned by the VoIP provider
- The VoIP provider must support the different codecs.


 See [Codecs](#)


---


### Configuration


With the Configuration Manager:


- **Identities** > Display settings  > **Basic Settings**

 You will find more information on this subject in the [Basic Settings](#) topic.

- **Identities** > Display settings  > **Options for experts**


 You will find more information on this subject in the [Options for Experts](#).

- **Identities** > Display settings  > **Codecs**


 You will find more information on this subject in the [Codecs](#) topic.

Or directly on the phone:

- **Settings > Identities**

 You will find more information on this subject in the [Basic Settings](#) topic.


Or using provisioning:


 You will find more information on this subject in the [Auerswald DokuWiki](#).

---

### Process for configuring an identity using the Configuration Manager

1. Enter the data specified by the VoIP provider and make settings

 **Note:** SIP Username = User name set by the VoIP provider, SIP Registrar = URL set by the VoIP provider


2. Enable an identity 

---

### Process for configuring an identity using the phone

1. Select one of six possible identities from the list and confirm your choice

2. Enter the data specified by the VoIP provider and make settings

 **Note:** SIP Username = User name set by the VoIP provider, SIP Registrar = URL set by the VoIP provider

3. Enable an identity

## Idle state

The telephone enters its idle state if it is not used before the time set here elapses.

The idle state display is displayed when the phone is in its idle state.

When the screen is in its idle state, it has:

- reduced brightness
- time display
- date display

Press any key to bring the phone out of its idle state. Tapping the display does not bring the phone out of its idle state.

If you want to make a call to a particular phone number while the phone is in idle state, the first digit key you press will bring the phone out of the state. You must then enter the first digit again to make the call.

 **Note:** **Not automatically** is set as the default value.

---

### Configuration


With the Configuration Manager:

- **Display > Basic Network Settings > Idle state**

 For more information, see [Display](#).

Or directly on the phone:

- **Settings > Display and LED > Idle state**

 For more information, see [Display and LED](#).

Idle state

Or using provisioning:

- For more information, see the [Auerswald DokuWiki](#).

## Language and Location


You can configure the phone to suit the particular locale by setting the language for the screen and the keyboard.

---

### Configuration


With the Configuration Manager:

- **Start > Language and Location**

 You will find more information on this subject in the [Language and Location](#) topic.


Or directly on the phone:

- **Settings > Language and Location**

 You will find more information on this subject in the [Language and location](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

 **Note:** In the Configuration Manager, you can set both the language and location, both for the Configuration Manager and for the phone. On the phone, you can only make settings for the phone.

# LDAP

Using LDAP (Lightweight Directory Access Protocol), you can, for example, make phone books on a PBX available to the phone.

---

## Requirement for configuration


- An LDAP server (for example, a PBX) and a minimum of one configured LDAP account.

---


## Configuration


With the Configuration Manager:

- **LDAP > Basic Network Settings**

 You will find more information on this subject in the [Basic Settings](#) topic.


- **LDAP > LDAP filter**

 You will find more information on this subject in the [LDAP filter](#) topic.

 **Note:** Only experts should make the settings that are possible in the **LDAP > LDAP filter** area. LDAP filter syntax is used. RFC 2254 and RFC 4515 are used.

Or directly on the phone:

- **Settings > LDAP**

 You will find more information on this subject in the [LDAP](#) topic.

Or using provisioning:

## LDAP

- You will find more information on this subject in the [Auerswald DokuWiki](#)


## **Loudspeaker listening mode**

In loudspeaker listening mode, both the loudspeaker in the receiver and the loudspeaker in the device are switched on. This enables other people in the room to listen in on the call. The call is continued using the microphone in the receiver (not hands-free operation).



## Music on hold

When an incoming call is on hold, the "music on hold" is played.


 **Note:** If the **Music On Hold** function has already been enabled on the PBX/at the provider, no additional settings are necessary here.

---

### Configuration

With the Configuration Manager:

- **Identities > Options for experts > Music on hold**

 You will find more information on this subject in the [Options for Experts](#).

Or directly on the phone:

- **Settings > Identities > Options for experts > Audio > Music on hold**

 You will find more information on this subject in the [Audio](#).

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## Network

General

IPv4

IPv6

VLAN

VPN

## General

A network is a group of more than one computer and other communication devices, which are connected together. It provides a way for multiple users to access shared resources.

These protocols can be set up for the device:

- IPv4
- IPv6
- VLAN
- VPN

## IPv4

A minimum of one IPv4 address and one subnet mask is required, to enable a device to communicate on the network.

An IPv4 address is 12 characters long and consists of 4 blocks, each containing 3 characters.

Example: 192,168,196,204

---

### Requirement for configuration


- There must be a connection to the network

---

### Configuration


With the Configuration Manager:

- **Network > IPv4**

 You will find more information on this subject in the [IPv4](#) topic.


Or directly on the phone:

- **Settings > Network > IPv4**

 You will find more information on this subject in the [IPv4 Settings](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

 **Note:** At least one protocol must be enabled and configured. IPv4 cannot be disabled if IPV6 is disabled.

## IPv6

A minimum of one IPv4 address and one subnet mask is required, to enable a device to communicate on the network.

Thanks to the longer IPv6 addresses, IPv6 offers a greater number of possible IP addresses than IPv4.

An IPv6 address is 32 characters long and consists of 8 blocks, each containing 4 characters.

Example: 2001:0db8:85a3:08d3:1319:8a2e:0370:7344

---

### Requirement for configuration


- There must be a connection to the network

---

### Configuration


With the Configuration Manager:

- **Network > IPv6**

 You will find more information on this subject in the [IPv6](#) topic.


Or directly on the phone:

- **Settings > Network > IPv6**

 You will find more information on this subject in the [IPv6 Settings](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

 **Note:** At least one protocol must be enabled and configured. IPv6 cannot be disabled if IPv4 is disabled.

## VLAN

A VLAN (Virtual Local Area Network) is a logical network within a physical network.

---

### Requirements for configuration


- VLAN is provided in the network
- The network interface type is VLAN

---

### Configuration


With the Configuration Manager:

- **Network > VLAN**

 You will find more information on this subject in the [VLAN](#) topic.

Or directly on the phone:

- **Settings > Network > VLAN**

 You will find more information on this subject in the [VLAN](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

# VPN

---

## Requirement for use

- Each end point must support the specific tunnelling protocol that is being used.
- You need to know the access data required to configure a VPN connection.

---

## Configuration


With the Configuration Manager:

- **Network > Enable LAN Port VPN**

 For more information, see [VPN](#).

Or directly on the phone:


- **Settings > Network > VPN**

 **Note:** The VPN can merely be enabled/disabled on the phone. It can only be configured in the Configuration Manager or by provisioning.

 For more information, see [VPN](#).

Or using provisioning:

- For more information, see the [Auerswald DokuWiki](#).

 **Note:** An example configuration, for a FRITZ!box (a German DSL modem/router), is described in the [Auerswald DokuWiki](#). This



configuration cannot be applied to VPN connections that are to be set up in a company environment.



---


### Process

1. Drag the slider right to enable **VPN**.  
Alternatively, you can enable **VPN** on the telephone.
2. Select the **VPN type**.
3. Enter the following parameters:
  - **Name**
  - **Server**
  - **User name**
  - **Password**
  - **DNS server**
  - **Search domain**
  - **IPsecIdentifier**
  - **Forwarding routes**
  - **Preinstalled IPsecSecret**
4. Load files for these parameters:
  - **IPsecUserCert**
  - **IPsecUserPrivateKey**
  - **IPsecCaCert**
  - **IPsec server certificate**
  - **Open VPN Configuration**

Follow these steps: **Browse** for the relevant file, select it and then tap > **Save**.

Other options in the upload fields and in the context menu which is now displayed are:

- **View file**
- **Download**
- **Close**
-  Delete
-  Copy

 **Caution:** The settings for **IPsec Xauth RSA-** and **IPsec Hybrid RSA-** type VPN connections depend on which server is in use. The network administrator must predefine the configuration.

## Outbound proxy

The outbound proxy is an intermediate server that processes all VoIP requests and connections going to the provider (except for registration).

You must make settings in the outbound proxy range if:

- the IP address cannot be resolved
- an outbound proxy is present in your own network
- the provider requires an outbound proxy

---

### Requirements for configuration


- Data provided by the VoIP provider/administrator for the **Outbound proxy host** and **Outbound proxy port**

---

### Configuration


With the Configuration Manager:

- **Identities > Options for experts > Outbound proxy**


 For more information, see [Outbound proxy](#).

Or directly on the phone:

- **Settings > Identities > Options for experts > Outbound proxy**

 For more information, see [Outbound proxy](#).

Or using provisioning:

 For more information, see the [Auerswald DokuWiki](#).

Pick-Up

## Pick-Up

Pick-up in idle state

Pick-up during a call

## Pick-up in idle state

During a pick-up in idle state, you can take a call on your own phone that was being made to another internal phone.

---

### Requirements for use:

- **Pick-up** permission granted in the PBX
- Pick-up is performed on the PBX and triggered with the sequence **##06**

**i Note:** To perform a pick-up using the speed dial button, you must enter the pick-up code.

- Function key with the speed dial for the internal phone that is to be called configured on it

---

### Procedure with speed dial configured

- The button with the speed dial function assigned to it flashes red.  
Press the button to accept the call.

---

### Proceed as follows without speed dial configured:

- Enter the same pick-up code as was entered in **Identities > [Options for Experts](#)**, and the subscriber number of the internal phone whose call is to be transferred.
- Press OK  to confirm.  
The call is transferred.

Pick-up in idle state

Example: **##06** (pick-up code) **158** (internal subscriber number) →  
**##06158**

## Pick-up during a call

During an active call, you can take a call on your own phone that was being made to another internal phone.

---

### Requirements for use:

- **Pick-up** permission granted in the PBX
- Pick-up is performed on the PBX and triggered with the sequence **##06**


**i Note:** To perform a pick-up using the speed dial button, you must enter the pick-up code.

- Function key with the speed dial for the internal phone that is to be called configured on it

---

### Proceed as follows with speed dial configured:

- The button with the speed dial function assigned to it flashes red.
- Press the button to accept the call.

**i Note:** If the button with the speed dial function assigned to it is not on the COMfortel<sup>®</sup> D-XT20 key extension module, but on the phone itself, there is no optical signalling to show that there is a call. To get this information, press Home . The current call information is hidden and the home screen is displayed. The button with the speed dial function assigned to it flashes red.

# Provisioning

Provisioning involves automatically configuring one or more phones using a provisioning server URL.

---

## Provisioning options

- **Provisioning with DHCP data**


The phone obtains the provisioning server's URL from a DHCP server. Additional data for controlling provisioning can also be transferred along with the URL.


- **Provisioning using a redirect server**

The phone obtains the provisioning server's URL from the redirect server.

- **Provisioning from PBX search**

The phone is configured automatically via the PBX.

 **Note:** Enable **Provisioning from PBX search**, for example, if you want to add PBX functions to the function key assignments.

 For more information, see the [Auerswald DokuWiki](#).

- **Provisioning using the provisioning server URL**

The URL is required if provisioning is not performed using DHCP data or a redirect server.

- **SIP provisioning**

The phone is configured using incoming SIP messages.



---

## Requirements for configuration

- The PBX or phone must be connected to a broadband Internet connection.
- There is network access with valid settings (see Network).
- The time is valid (see [Date and Time](#)).

---

## Configuration


With the Configuration Manager:

- **Provisioning > Basic Network Settings**
- **Provisioning > Schedule**
- **Provisioning > SIP provisioning**

Or directly on the phone:

- **Settings > Provisioning**

Or using provisioning:

 You will find more information on this subject in the [Auerswald DokuWiki](#).

---


## Automatic provisioning process

1. Enable **Automatic provisioning**.
2. Select one of these:
  - Provisioning with DHCP data
  - Redirect server
  - Provisioning from PBX search

- Provisioning server URL

You can select combinations of these options.

3. Configure the schedule.

 **Note:** You can only configure the schedule in the Configuration Manager.

Automatic provisioning is performed as set in the schedule and also each time the device is restarted.

---

### Manual provisioning process (only on the phone)

1. Select one of these:
  - Provisioning with DHCP data
  - Redirect server
  - Provisioning from PBX search
  - Provisioning server URL


You can select combinations of these options.

2. Press **Start provisioning**.  
Provisioning is performed.

---

### SIP provisioning process (only in the Configuration Manager)

- Switch on SIP provisioning.

 You will find more information on configuration via SIP messages and also the provisioning process in the [Auerswald DokuWiki](#).

## Query Calls

During a query call you are talking with one subscriber while the previous call partner is put on hold by the PBX in the background, and hears the on-hold music.

The phone supports 3 call channels. When the channels in the phone are put on hold in the PBX, they become inactive, so up to 2 calls can be on hold in addition to one active call.

A query call is initiated either by calling a query call subscriber, by using the [Pick-up during a call](#) or by accepting a call signalled by the call waiting tone (see [Call waiting](#)).

---

### Options during a query call

- **Splitting a call**

You can use the call-splitting function to alternate between the call partners.

- **Ending one of the two calls**

When you end a query call and would like to continue talking with one of the call partners, you can end the call with the other call partner separately.

Alternatively, one of the call partners can simply hang up so that you can continue talking with the other call partner.

- **Connecting the two call partners to each other**

If you would like to let your call partners speak with each other, you can connect them.

## Redial List

You will find more information on this subject in the [Redial List](#) topic.

## Reset to default


If you reset the phone to default settings, you can delete any data and settings saved on it. This includes, for example, deleting personal data (such as your contacts), function key assignments and identities.

The phone is shut down and then restarted. This can take some time.



**Note:** If you reset the phone to default settings, you can delete any data and settings saved on it. All personal data is deleted. You cannot undo this action. To save particular settings such as a configured identity, you can first perform a data backup. You will find more information on this subject in the [Data Backup](#) topic.

---

### Process

1. Disconnect the network cable that supplies the phone with current.  
The power supply is no longer provided.
2. Press and hold these two buttons at the same time:
  - Hold 
  - This directional pad: ►
3. Plug the network cable in again.  
The power supply is restored.  
The housing LED first flashes quickly, then more slowly.
4. As soon as the casing LED is flashing more slowly, release both buttons.  
You have reset the phone to its default settings.


## Reset to default

 **Note:** If you do not release the Hold  and the ► directional pad in the predefined time window, the phone boots in the normal way. The phone is not reset to its default settings.

## Reverse search

During inbound and outbound calls, the name for the subscriber number is searched for in the locally and non-locally saved contacts on the phone.

If inbound and outgoing calls are made with an unknown subscriber number, "unknown" is displayed in the screen, instead of the name if the caller does not transmit a subscriber number or number transmission is suppressed. However, if the called calls with a subscriber number that is not in any phone book, the transferred subscriber number is displayed instead of the name, unless the central ICT system has already transmitted its own designation instead of the name.

 **Note:** If you deactivate the reverse search, this only affects the device phone book and LDAP. Information that comes from the PBX is not affected and is still displayed, despite this.

---

### Configuration

With the Configuration Manager:

- **Telephony > Reverse Search**

Or directly on the phone:

- **Settings > Telephony > Reverse Search**

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## Silent Call

In a silent call, you can trigger a function by pressing the key to which it has been assigned without displaying the call on the telephone display.

---

### Requirement for configuration

- PBX's valid known URI
- Provisioning from PBX search is enabled, see [Provisioning](#)
- Adjusted XML file with which the PBX function can be triggered. For more information, see the [Auerswald DokuWiki](#).

---

### Configuration

Via provisioning:

- For more information, see the [Auerswald DokuWiki](#).

---

### Process

1. Provide a suitable provisioning file.
2. Enable **Provisioning from PBX search**.
3. Enter the relevant **Provisioning server URL**.
4. Set up a function key with the extended function provided by provisioning.



## SIP

The Session Initiation Protocol (SIP) network protocol sets up a communication session between two or more subscribers. SIP is only used to negotiate the communication conditions. Other protocols such as RTP are responsible for actual data transfer.

Session Timer, Session Timeout and Protocol type settings must be made, for problem-free communication.

You can select protocol type **UDP** or **TCP**.

- **UDP:** (the User Datagram Protocol) is used to send data packet over connectionless non-secure communication lines. UDP itself does not verify whether data has been transmitted successfully. When a UDP packet is sent, the sender cannot assume that the packet will definitely arrive at the recipient. This particular protocol only needs a small amount of additional information, which results in a better data throughput rate in a well-functioning network such as a LAN. UDP is used, for example, for DNS (Domain Name Server).
- **TCP:** TCP (Transmission Control Protocol) is a transport protocol that segments data into packets up to a specified size and reliably sends these individual data packets to the recipient address, in the correct sequence. In this process, every data packet sent must be resent until it has been confirmed as arrived. To ensure this happens, a large amount of information is sent along with the actual payload data. Most Internet services, e.g. HTTP (www), SMTP/POP3 (e-mail), etc. are implemented with TCP.


---

### Configuration

With the Configuration Manager:

- **Identities > Options for experts**

## SIP

 For more information, see [Options for experts](#).

Or directly on the phone:

- **Settings > Identities > SIP**

 For more information, see [SIP](#).

Or using provisioning:

- For more information, see the [Auerswald DokuWiki](#).

## SIPS

SIPS are SIP data encrypted using the TLS protocol. The network protocol sets up a communication session between two or more subscribers.

The provider encrypts external connections to prevent listening in. The processes used to set up and shut down a connection, and signalling, are all encrypted by SIPS.

---

### Requirement for configuration


- The phone's certificate must be known on the PBX.

---

### Configuration


With the Configuration Manager:

- **Identities > Options for experts > SIPS**

 You will find more information on this subject in the [Options for Experts](#).

Or directly on the phone:

- **Settings > Identities > SIPS**

 You will find more information on this subject in the [Basic Settings](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## Sound

Sets the sounds for signalling

- inbound calls
- Notifications
- Alarms

---

### Configuration

With the phone:

- **Settings > Sound > Default ringtone**
- **Settings > Sound > Default notification**
- **Settings > Sound > Default alarm**

 For more information, see [Sounds](#).

Or using provisioning:

- For more information, see the [Auerswald DokuWiki](#).

---

### Process

1. All available ringtones are listed.
2. You can listen to the ringtone by
  - using the directional pad keys to select the individual ringtones in the list.
  - and
  - hovering over a selected entry
3. When you confirm your ringtone selection, the menu closes.

## Sound

The selected ringtone is then used as the default for incoming calls.

## Speed dial

With the **speed dial** function, you can not only assign internal and external subscriber numbers to a function key, but also PBX programming sequences.

---

### Speed dial keys can be used in the following ways:

#### To Dial a Subscriber Number

The subscriber number will be dialled immediately when a speed dial button is pressed. If a speed dial button is pressed during a call, a query call is placed and the saved subscriber number is dialled immediately.

#### Assignment Overview

Speed dial buttons assigned to internal subscriber and group subscriber numbers provide a way for the user to view the LEDs and see which subscribers and groups are active or busy.

#### Pick-Up and Call Pick-Up

Speed dial buttons defined with internal subscriber and group subscriber numbers enable pick-up for these subscribers and groups. If the LED next to the button is blinking red because the saved subscriber number is being called, you can take the call on your phone by pressing the speed dial button and then confirming. If a subscriber allows call pick-up (for example on an answering machine), you can still take the call on your phone in the same manner, even after it has already been accepted.

---

### Configuration

With the Configuration Manager:

- **Function keys > Speed dialling**

Or directly on the phone:

## Speed dial


- **Settings > Function Keys > Speed dial**

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## SRTP

SRTP (Secure Real-Time Transport Protocol) is used to encrypt call data.


 **Important:** If you are using this on a PBX, the PBX specifies the encryption method. In contrast, you must adjust the encryption settings on the phone.

---

### Configuration


With the Configuration Manager:

- **Identities > Options for experts > SRTP**

 You will find more information on this subject in the [Options for Experts](#).

Or directly on the phone:

- **Settings > Identities > SRTP**

 You will find more information on this subject in the [Basic Settings](#) topic.

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)



## Transferring calls

Call transfer types

Transferring a call with an announcement

Transferring a call without an announcement

Calling a 3rd internal subscriber

## Call transfer types

A call partner can be transferred (connected) to an internal or external subscriber.

During an existing call, you can perform a call transfer in these ways:

- Transfer the call with an announcement
- Transfer the call without announcement (blind transfer)
- Call the 3rd internal subscriber and connect them to an active call partner

## Transferring a call with an announcement

---

### Requirement for use

- A query call that you initiated yourself.

---

### Process

To transfer a call, a query call is placed.

The call is announced.

The two call partners are connected with each other.

## Transferring a call without an announcement

Also called blind transfer.

---

### Requirements for use

- A query call that you initiated yourself.
- To connect two external communication partners, the following is required: **Transfer of external calls to external** permission granted in the PBX.
- Internal transfer destination

---

### Process

If an external call partner is to be transferred to another internal subscriber, there is no need to wait until the subscriber called in the query call picks up. The receiver can be put down during calling.

The call to the internal subscriber will be forwarded.

If the subscriber accepts the call, the connection is established.

If the called subscriber does not pick up, the call returns to the caller's own phone (the phone rings) after 2 minutes (or as set on the PBX or at the provider).

## Calling a 3rd internal subscriber

Calling a 3rd internal subscriber and connecting them to an active call partner

---

### Requirements for use

- A query call that you initiated yourself
- To connect two external communication partners, the following is required: **Transfer of external calls to external** permission granted in the PBX.

---

### Process

An additional call is added to a existing call (for example, when a call waiting call is accepted).

This second subscriber is to be transferred to another subscriber.


To do so, a third call is triggered and the second subscriber is connected to the third subscriber.

The original, existing call continues.

## User

The user adjusts the different authorisation levels setting so that they can make settings in the Configuration Manager. By default, the **admin** user is set up. You can add more users:

- Using provisioning
- By exporting the telephone configuration, editing the right section in the exported .xml file and then restoring the backup by importing the relevant file.


 For more information about exporting the telephone configuration, see [Backup and restore](#).

---

## Configuration



With the Configuration Manager:


- **User** > Display settings 

 You will find more information on this subject in the [User](#) topic.

---

## Process

1. Click on  to display/hide the currently set password.
2. Click on  to set a new password.  
Change an existing password, if required.

 **Caution:** Passwords that are unchanged from the default settings are a security risk. Change the password without delay.


## Voicemail number

A voice mailbox acts as an answering machine. Depending on the setting, it accepts incoming calls and stores recorded messages as audio files (.wav).

Messages and announcements are not stored on the phone, but on the PBX.

The size of the voice mailbox and the authorisation to use it are set on the PBX. A voice mailbox can be assigned to an individual subscriber or to a group. A subscriber can be given the authorisation to use several voice mailboxes.

You can link a configured voice mailbox with the selected identity by entering the associated voicemail number.

 **Important:** The voice mailbox is only available during operation on the following PBXs:

- COMpact 4000
- COMpact 5010 VoIP
- COMpact 5020 VoIP
- COMpact 5000/R
- COMpact 5200/R
- COMpact 5500R
- COMmander 6000/R/RX

In some PBXs, you will need to install another module (available as an optional extra) to run a voice mailbox:

- COMmander 6000/R/RX: COMmander VMF module



## Voicemail number

- COMpact 5010 VoIP: COMpact 2VoIP module
- COMpact 5020 VoIP: COMpact 2VoIP or 6VoIP module

---

### Requirement for use


- A configured and assigned voice mailbox

---

### Configuration


With the Configuration Manager:

- **Identities > Options for experts > Voicemail number**

 You will find more information on this subject in the [Basic Settings](#) topic.

Or directly on the phone:

- **Settings > Identities > Voicemail number**

 You will find more information on this subject in the [Options for Experts](#).

Or using provisioning:

- You will find more information on this subject in the [Auerswald DokuWiki](#)

## XML Minibrowser

The XML Minibrowser is a feature of COMfortel<sup>®</sup> D-series phones.

The browser enables menus and dialogs that you have created yourself, in XML, to be displayed. You can upload the XML documents from a normal web server, using http, provided they have been stored there.

You can use this function to display menus and dialogs that you have created specially for that purpose.

You can display and modify apps such as phone books created to meet your own special requirements, lists of missed calls, settings on the PBX on the own needs (for example, Do not disturb, Call forwarding etc.).

---

### Requirement for use

- .XML files stored on a web server

---

### Configuration

With the Configuration Manager:

- **Function keys > XML mini browser**

Or directly on the phone:

- **Settings > Function Keys > XML Minibrowser**

Or using provisioning:


- You will find more information on this subject in the [Auerswald DokuWiki](#)

---

### Process

- Press the button on which the **XML Minibrowser** function has been configured.

After you press that button, the phone sends an HTTP(s) GET command to the server, waits for the reply, and then decodes and displays this reply just like a normal web browser would.

 **Note:** You will find more information on the Auerswald dialect and configuration in the [Auerswald DokuWiki](#)

# Telephoning

Information about the section

Incoming calls

Call-Waiting Calls

Dialled calls

Call

Query Calls

Transferring calls

Conference calls

Hands-Free Calling

Loudspeaker listening

Headset Call

Call history

Pick-up

## Information about the section

This section describes the different ways that you can use the phone for telephoning.

**!** **Important:** The functions described in these instructions have been tested on Auerswald/FONtevo PBXs and then described. If the phone is operated on other PBXs or VoIP providers, functionality may be partially or completely restricted.

**i** **Note:** There are alternatives to the functions below. These alternatives have not always been listed.

---

### To create/end a connection

Pick up the receiver

**or**

press Loudspeaker 

**or**

press Headset 

**or**

press OK 

**or**



---

### Reject a call

## Information about the section

Press Back 

or



---

## Holding a call/Reconnecting from a call that is on hold

Press Hold 

or

press OK 

## Incoming calls

---

### Accepting a call

Pick up the receiver

**or**

press OK 

**or**

press Headset 

**or**

press loudspeaker 

**or**

press 

---

### Rejecting a call

Press 

---

### Putting an accepted call on hold

Press Hold 

---

### Reconnecting an on-hold call

Press Hold 

**or**

Incoming calls

press OK



## Call-Waiting Calls

---

### Accepting

Pick up the receiver

**or**

press OK 

**or**


press Headset 

**or**

press loudspeaker 

**or**




 You will find more information on this subject in the [Call waiting](#) topic.

---

### Rejecting



 You will find more information on this subject in the [Call waiting](#) topic.



---

### Forwarding



Transfer  > Enter destination number > Loudspeaker 


**or**

## Call-Waiting Calls

Transfer  > Enter destination number > 

**or**

Transfer  > Select a saved contact > 


 For more information, see [Call waiting](#).

## Dialled calls

---

### Dialling a Phone Number Manually


Pick up the receiver > dial a phone number

 You will find more information on this subject in the [Dial a Subscriber Number Manually](#) topic.

---

### Dial preparation


Dial the phone number > pick up the receiver

 You will find more information on this subject in the [Dial a Subscriber Number Manually](#) topic.

---

### Dialling from within the call history (all calls)

 > **All** > Select phone number/contact


 For more information, see [Overview. All call lists](#)

---

### Dialling from within the call history (missed calls)

 > **Missed** > Select phone number/contact


or

Select the  > **You have missed calls.** message key in the displayed status bar > Select phone number/contact.

 For more information, see [Missed calls](#).

---

## Dialling from within the redial list (outgoing)

 > **Outgoing** > Select phone number/contact


or


Redial key  > Select phone number/contact


 For more information, see [Redial List](#).

---

## Dialling from the contacts list

 > select contact > confirm selection or pick up the receiver


 **Note:** If more than one number is stored for a contact, you can select the number to call before you pick up the receiver.


 For more information, see [Contacts](#).

## Call

---


### Putting a call on hold

Active call > Hold 


 You will find more information on this subject in the [Call](#) topic.

---

### Reconnecting an on-hold call


To do this, press Hold  again

or

touch  on the display

or

OK .

 You will find more information on this subject in the [Call](#) topic.

---

### Accepting a call

During an active call, the LED on the key with the **Speed dialling** function assigned to it shines red. Press the key with the **Speed dialling** function assigned to it to pick up the call.


---

### Muting a call

Microphone 

---

## Switching off muting

Press microphone  again.


---

## Ending a call

Hang up the receiver

or



 You will find more information on this subject in the [Call](#) topic.



---

## Sending a DTMF signal during a call

To do this, enter digits and special characters

## Query Calls

### Initiating a query call (during a call)

Hold  > enter the destination number/contact (Keypad) > OK 

or


Hold  >  > enter the destination number/contact > OK 

### When you connect a COMfortel<sup>®</sup> D-XT20:

Hold  > press the speed dial button (key extension module)

or

press the speed dial button (key extension module)


 You will find more information on this subject in the [Query Calls](#) topic.

### Ending the query call and returning to the previous call

Hold 


or



 You will find more information on this subject in the [Query Calls](#) topic.

### Splitting a call (during a query call)

Select the call partner to whom you want to change > 


 You will find more information on this subject in the [Query Calls](#) topic.


---

### Ending one of the two calls

Either one of the call partners hangs up the receiver

**or**

you can select the call partner for whom you want to end the call > 

 You will find more information on this subject in the [Query Calls](#) topic.


---

### Connecting the two call partners to each other

To do this, hang up the receiver

**or**



 You will find more information on this subject in the [Query Calls](#) topic.



## Transferring calls

---


### Transferring a call with an announcement

#### Requirements:

- A query call that you initiated yourself, see [Query Calls](#)

#### Vorgehensweise:







 You will find more information on this subject in the [Transferring a call with an announcement](#) topic.

---

### Transfer without announcement (blind transfer)

#### Proceed as follows:

Hold  > enter destination number/contact > OK  > 

 You will find more information on this subject in the [Transferring a call without an announcement](#) topic.

## Conference calls

All the options listed above are for a conference call that you have initiated yourself.


---

### Initiating a call

Scenario:


- there is an existing connection between you and at least two other subscribers.




 You will find more information on this subject in the [Conference calls](#) topic.

---

### Splitting a call

To do this, select the required subscriber > 


 **Note:** If you press  several times, you restore the conference call.

 You will find more information on this subject in the [Conference calls](#) topic.

---

### Connecting the other two conference call partners to each other



 You will find more information on this subject in the [Conference calls](#) topic.


---

## Splitting a conference call






One subscriber is put on hold and there is an active connection with the other subscriber. You can change between holding a call and an active call.

Press Hold  to do this.


 You will find more information on this subject in the [Conference calls](#) topic.


---

## Holding a conference call and initiating an additional call

Select the conference call > Hold  >  > OK 


The conference call partners are put on hold and hear the "music on hold".

When the call ends, you can continue the conference call by pressing Hold  again.


 You will find more information on this subject in the [Conference calls](#) topic.

---

## Ending a call with a conference call partner

Select the subscriber for whom you want to close the connection > 

Then, there will only be a connection with the remaining subscriber.

 You will find more information on this subject in the [Conference calls](#) topic.


---

## Ending a conference call completely

To do this, hang up the receiver

or




 You will find more information on this subject in the [Conference calls](#) topic.

## Hands-Free Calling

---


### Accepting a call in hands-free calling mode


Incoming call > 

or

Incoming call > loudspeaker 

or

Incoming call > OK 

 You will find more information on this subject in the [Hands-free calling mode](#) topic.

---

### Initiating a call in hands-free calling mode

Select contact > tap on receiver

or

Select the phone number > loudspeaker 

or

Select the phone number > wait for a short while

**Requirement: Automatic start of call** enabled, see [Automatic start of call](#)

 For more information, see [Hands-free calling mode](#).

---


### Ending a call in hands-free calling mode

## Hands-Free Calling



**or**

Loudspeaker 


 You will find more information on this subject in the [Hands-free calling mode](#) topic.

## Loudspeaker listening

---

### Switching on during a call through the receiver


Loudspeaker 

 You will find more information on this subject in the [Loudspeaker listening mode](#) topic.

---

### Switching off and returning to a normal call

Loudspeaker 

 You will find more information on this subject in the [Loudspeaker listening mode](#) topic.


---

### Ending a call in loudspeaker listening mode

To do this, hang up the receiver

or



 You will find more information on this subject in the [Loudspeaker listening mode](#) topic.

## Headset Call


---

### Personally initiating a call when headset operation is switched off (headset LED is not shining)

Headset 

or

EHS

 You will find more information on this subject in the [Headset mode](#) topic.

---

### Personally initiating a call when headset operation is switched on (headset LED is shining green)

Headset 

or




or

OK 

or

EHS

 You will find more information on this subject in the [Headset mode](#) topic.




---

## Transferring an active call to the headset

Headset 

or

EHS

 You will find more information on this subject in the [Headset mode](#) topic.

---

## Ending an active call in the headset


Headset 

or



or


EHS.

 You will find more information on this subject in the [Headset mode](#) topic.

---

## Initiating the listen-in function on the receiver during a headset call

Pick up the receiver > Headset 


 You will find more information on this subject in the [Headset mode](#) topic.

---

## Cancelling the listen-in function on the receiver during a headset call

## Headset Call

To do this, hang up the receiver


 You will find more information on this subject in the [Headset mode](#) topic.

## Call history

---

### To open the call history



 You will find more information on this subject in the [Caller list](#) topic.

---


### To list missed calls



> **MISSED**

or

message  > **You have missed calls**

 You will find more information on this subject in the [Caller list](#) topic.

---


### To list outgoing calls



> **OUTGOING**

or

Redial 

 You will find more information on this subject in the [Caller list](#) topic.


---


### Options for displaying entries in an active list

## Call history



or


OK  (hold down the key for approx. 2 sec.)

 You will find more information on this subject in the [Caller list](#) topic.

---

### Editing an entry in the call history before making a call


 >  >  **Edit number before call**

 You will find more information on this subject in the [Caller list](#) topic.

---

### Adding an entry in the call history to the contacts

 >  >  **Add to contacts**

 You will find more information on this subject in the [Caller list](#) topic.


---

### Deleting entries from the call history

 >  >  **Remove from list**


or


Clear 

 You will find more information on this subject in the [Caller list](#) topic.

---

## Deleting an entire call history

Clear  (hold the key for approx. 2 sec. )

 You will find more information on this subject in the [Caller list](#) topic.

---

## Calling from an opened call historyn

Pick up the receiver

or


OK 

or

Loudspeaker 

or


Headset 

 You will find more information on this subject in the [Caller list](#) topic.

---

## To leave the call history

Back 

 You will find more information on this subject in the [Caller list](#) topic.

## Pick-up

---

### Pick-up (during call)

#### When speed dialling is set up

The LED on the key with the Speed dialling function assigned to it flashes red.

When you press the flashing function key, you pick up the call.

#### When speed dialling is not set up


Enter the pick-up code and phone number for the internal phone > pick up the receiver

or

OK 

or




 You will find more information on this subject in the [Pick-up in idle state](#) topic

---

### Pick-up (during a call of your own)


#### When speed dialling is set up

Home  > the LED on the key with the Speed dialling function assigned to it flashes red.

When you press the flashing function key, you pick up the call.

#### When speed dialling is not set up

## Pick-up

Home  > enter pick-up code and phone number for the internal phone >


pick up the receiver

**or**

OK 

**or**



 You will find more information on this subject in the [Pick-up during a call](#) topic

# Device overview

[Front View](#)

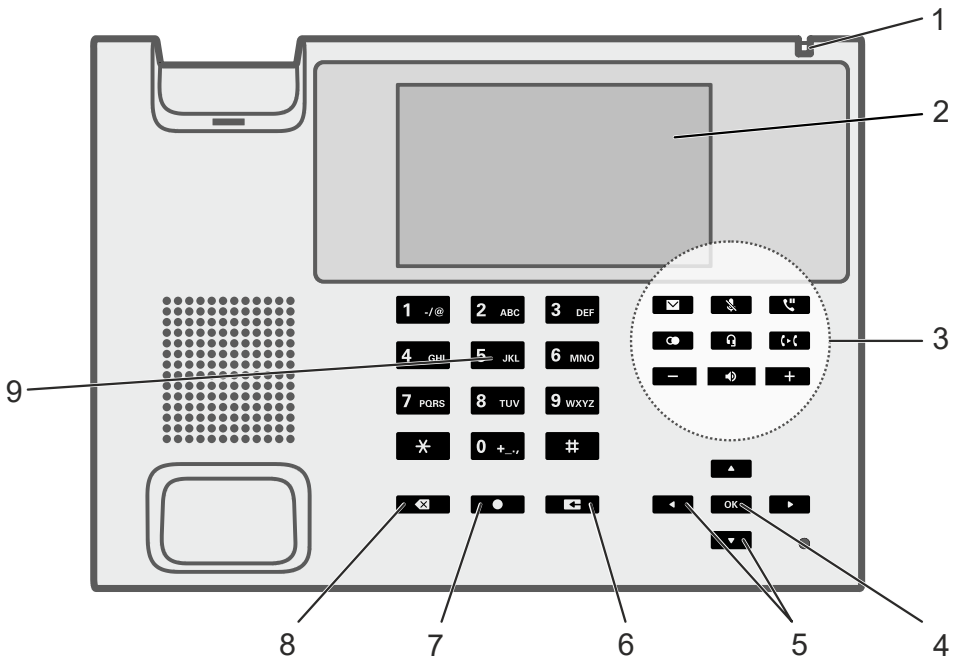
[Rear View](#)



## Front View

Each device has a touch display and different keys (some of which have LEDs). You can operate it using the keys or touch controls.

### Keys and LEDs on the basic unit

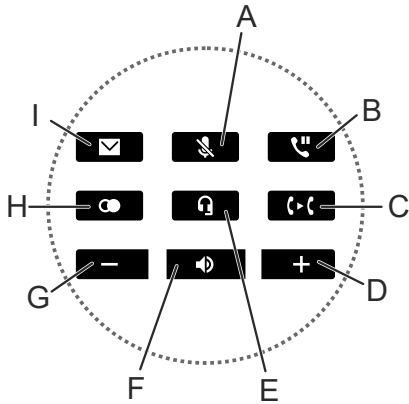


1. Casing LED
2. Touch display
3. Dedicated function keys
4. OK
5. Directional pad keys (Up, Down, Right, Left)
6. Back
7. Home

## Front View

8. Delete

9. Keypad



A. Microphone

B. Hold

C. Transfer

D. plus

E. Headset

F. Loudspeaker

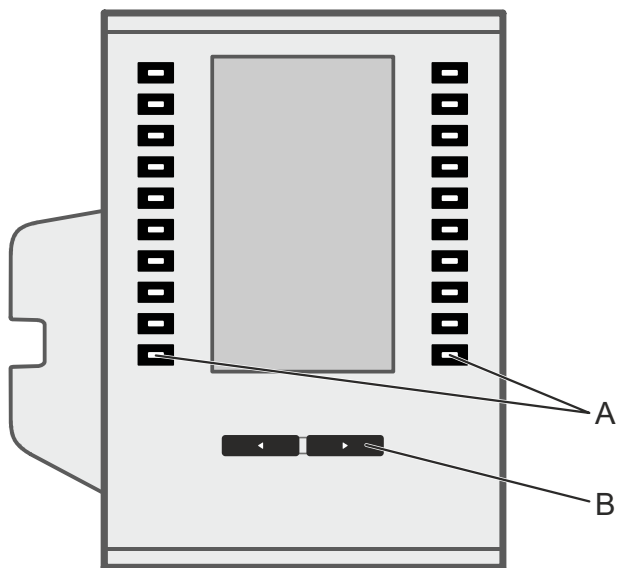
G. minus

H. Redialling

I. Messages

## Keys and LEDs on the key extension module

Front View



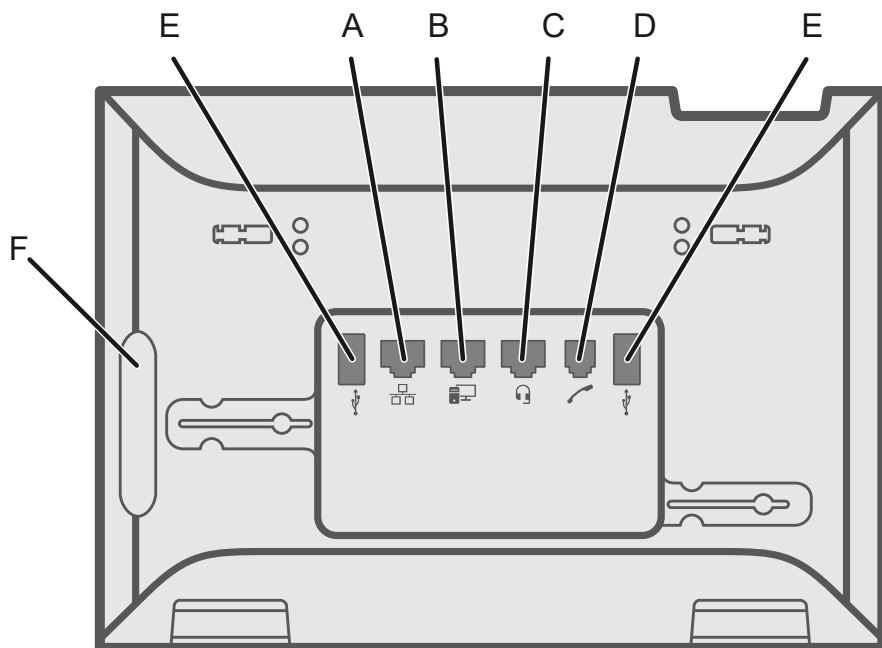
A. Function keys (10x on each side)

B. control rocker

## Rear View

The next figures show the connections on the bottom of the different devices.

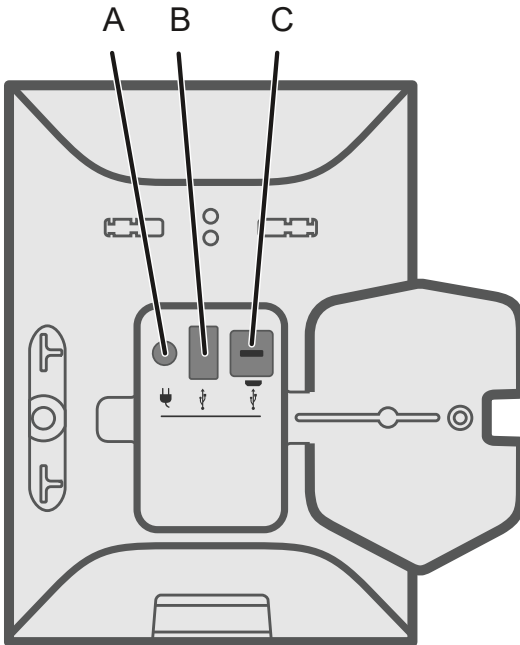
### COMfortel<sup>®</sup> D-400



- A. Network port
- B. Direct PC connection via network cable
- C. Headset socket
- D. Receiver socket
- E. USB ports (e.g. for connecting a COMfortel<sup>®</sup> D-XT20 key extension module)

- F. Rubber cover: to connect a COMfortel<sup>®</sup> D-XT20 key extension module, remove the cover and attach it to the extension module.

## COMfortel<sup>®</sup> D-XT20



- A. Socket into which you plug the COMfortel<sup>®</sup> D-XT-PS wall-mounted power supply (if you connect two or more key extension modules)
- B. USB port (e.g. for connecting another COMfortel<sup>®</sup> D-XT20 key extension module)
- C. Micro-USB port: use this to connect the telephone to the key extension module

# Using the Configuration Manager

[Introduction](#)

[Start](#)

[Display](#)

[Function keys](#)

[Provisioning](#)

[Identities](#)

[Firmware Update](#)

[Network](#)

[LDAP](#)

[Telephony](#)

[Date and Time](#)

[User](#)

[Backup and restore](#)

# Introduction

[Opening the Configuration Manager](#)

[Operating Instructions](#)

## Opening the Configuration Manager

You login with the authority level Administrator.

Requirement:

- Recommended browsers: Mozilla Firefox, Google Chrome. (current version)
- You need to know the phone's IP address. (You can find it on the phone: select **Settings > Network**)
- There must be an existing network connection between the PC and phone

Proceed as follows:


1. Enter the phone's IP address (e. g. http://192.168.178.4) in the browser address line.

The login window opens.

2. Enter your User name and Password access data.

If you are running the Configuration Manager for the first time, enter the following access data:

- **User name: admin**
- **Password: admin**

 **Caution:** Passwords that are unchanged from the default settings are a security risk. Change the User password without delay.

3. Click on Login.

You will now be logged on in the Configuration Manager and can make settings.



# Operating Instructions

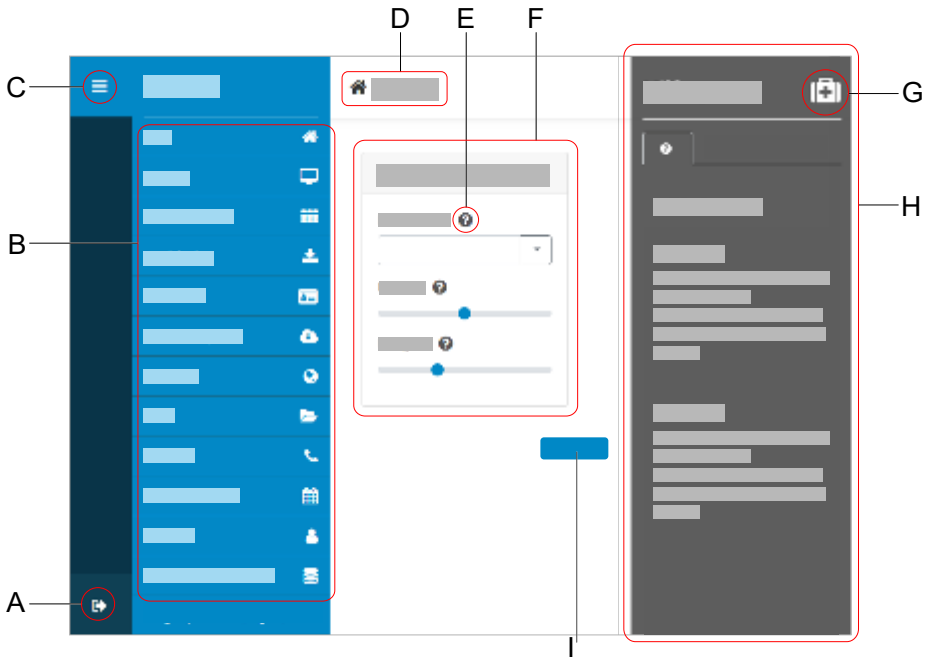
[Overview](#)

[Fields and User Elements](#)

[Appearance](#)

## Overview

The Configuration Manager is divided into several areas:



A. Log out user

B. Vertical navigation

Here, click on the required topic to select it.

C. Display or hide vertical navigation.

If the menu structure on the left is being displayed, a vertical navigation is displayed.

D. Breadcrumb navigation

Displays the branching within the Configuration Manager.  
Select the "house" icon to return to the home screen.

## Overview

E. Context-sensitive help

F. Content area


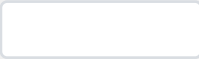
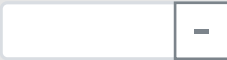

The topic selected using the vertical navigation is displayed here.

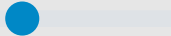
G. Displays or hide the help system.

H. Help system

I. Save

## Fields and User Elements


Element	Function
	<p>List field: enter settings in it to configure particular functions. The selected setting is displayed in the list field. Click on the arrow on the right of the list field to display possible options.</p>
	<p>Empty field: enter a name, value or web address in it. Click in the entry field and enter the text. The following characters must not be used:</p> <ul style="list-style-type: none"> <li>• " " quotation marks</li> <li>• \$ dollar sign</li> <li>• % percent sign</li> <li>• &lt; pointy bracket - smaller than</li> <li>• &gt; pointy bracket - higher than</li> <li>• \ backslash</li> <li>• ^ caret</li> <li>• [ ] square brackets</li> <li>• { } curly brackets</li> </ul>
	<p>Form field use to incrementally increase/reduce a value</p>
	<p>You can use a toggle button to enable some functions (move one point to the right) or disable them (move one point to the left). Click on an option to activate it. The previous selection is disabled at the same time.</p>

Element	Function
	Use sliders to make infinitely variable settings (e.g. contrast settings). The position of the slider identifies where the setting is. Drag the slider to the left to reduce the value. Drag the slider to the right to increase the value.

## Appearance

The display/legibility of the Configuration Manager may be affected by browser settings, e.g.

- Scale/zoom browsers (e.g. hold down Ctrl + scroll (mouse wheel))

 **Note:** If the Configuration Manager is no longer legible because of the way the browser has been scaled/zoomed, you can restore the original view. (For example, in Mozilla Firefox, select **View > Zoom > 100% (Original Size)** or press Ctrl + 0).

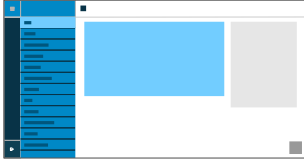
Start

## Start

[Status Information](#)

[Language and Location](#)

## Status Information



---


### Type

Displays the phone model used.

---

### Firmware version

Displays the firmware version currently in use on your device.

 For more information, see [Firmware Update](#).

---

### Version web server

Displays the version of the Configuration Manager currently in use.

If the firmware is updated, this does not necessarily change the Configuration Manager version.

---

### Serial number

Displays your device's serial number.

---

### MAC address

Displays your device's physical address on the network.

---

### Clipboard





Copies status information to the clipboard, so you can access it easily, for example, to make a request for support.

---

## Online Help

Displays the online help in your browser.

---

## Data protection

Displays a multi-lingual PDF that contains information about the way Auerswald processes data, and how data is sent to Auerswald.

---

## Auerswald license

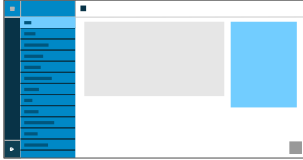
Displays a multi-lingual PDF that contains Auerswald's software license agreement.

---

## Open source licenses

Displays a multi-lingual PDF that contains information about the open source licenses that are in use.


## Language and Location



---

### Configuration Manager language


Changes the language used in the Configuration Manager.

 For more information, see [Language and Location](#).

---

### Phone language

Changes the language used on the phone user interface.


 For more information, see [Language and Location](#).

---

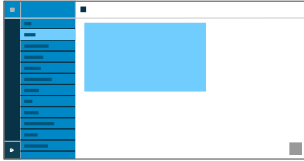
### Location

Sets the phone's actual or required location.

Audio frequencies (pitches, pulse/pause characters and/or ringing tones), and also the time and time format, are different for each selected location.

 For more information, see [Language and Location](#).

## Display



---

### Idle state

After the selected time, the phone is automatically returned to the idle state.

- **Not automatically**


The phone is not automatically returned to the idle state.

 For more information, see [Idle state](#).

---

### Brightness

Sets the brightness.

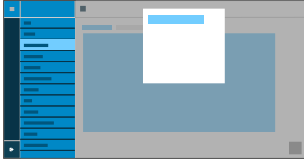
 For more information, see [Display and LED](#).

## Function keys

[Overview](#)

[Edit function keys](#)

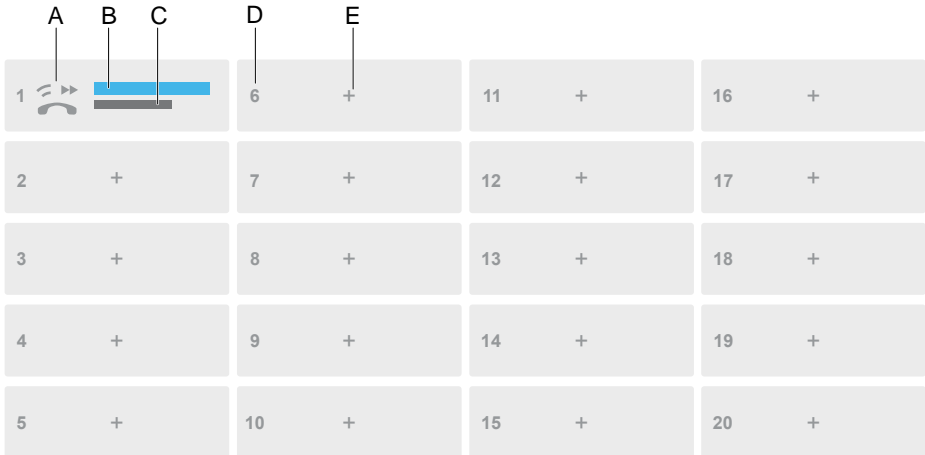
# Overview



## Function keys

You can see the interface in which you configure the function keys for the phone in the Function keys tab.

## User interface phone



- A. Function keys icon. Also see [System icons](#)
- B. Enter the same text as in the **Edit function keys > Key label** section
- C. Function selected as described in the **Edit function keys > Function** section

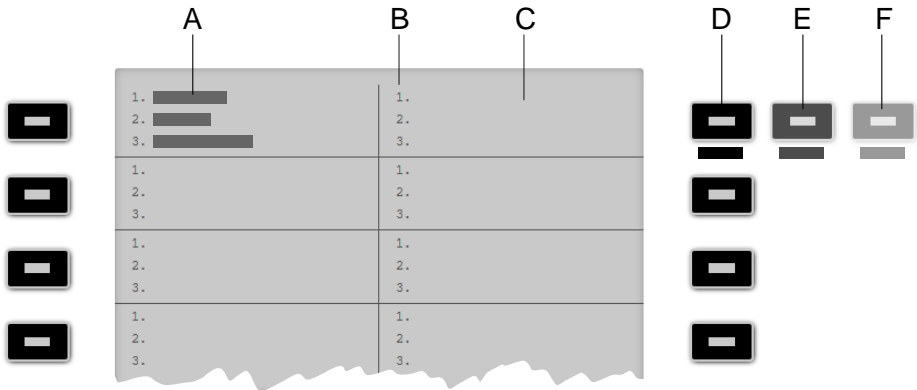
- D. Seq. number (1 – 20)
- E. Displays the **Edit function keys** dialogue

**i Note:** If a key already has a function assigned to it, the LED shines orange. You can assign a different function. For more information, see the [Edit function keys](#) section.

### Key extension module (1 – 3)

You can see the interface in which you configure the function keys for the selected module in Key extension module tab 1 – 3. Up to 3 key extension modules can be connected.


### User interface extension module



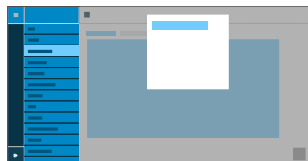
- A. Shows that the phone's top left function key has had a function assigned to it on all 3 levels.
- B. Lists all 3 possible levels to which a function can be assigned
- C. Display
- D. **Level 1** (always visible)

Click on the selected key to open the Edit function keys window

- E. **Level 2** (opens when you pass over it with the mouse)  
Click on the selected key to open the Edit function keys window
- F. **Level 3** (opens when you pass over it with the mouse)  
Click on the selected key to open the Edit function keys window

 **Note:** If a key already has a function assigned to it, the LED shines orange. You can assign a different function.

## Edit function keys



---

### Key label

Displayed beside each function key on the screen.

---

### Function

Selects the function and displays the necessary parameters:

- **Speed dial**

 For more information, see [Speed dial](#).

- **Identity**

 For more information, see [Identities](#).

- **Call waiting**


 For more information, see [Call Waiting](#).

- **Do not disturb**


 For more information, see [Do not disturb](#).

- **Anonymous call**



 For more information, see [Anonymous Call](#).

- **Call forwarding on busy**

 For more information, see [Call forwarding](#).

- **Call forwarding on no reply**

 For more information, see [Call forwarding](#).


- **Call forwarding immediately**


 For more information, see [Call forwarding](#).


- **VPN**

 For more information, see [VPN](#).

- **XML Minibrowser**

 For more information, see [XML Minibrowser](#).

 **Note:** Configure the **Call waiting**, **Do not disturb**, **Anonymous call** and **Call Forwarding** functions on the phone: select **Settings** > **Telephony** or in the Configuration Manager: select **Telephony**.

 **Note:** You can use provisioning to extend the functions available on the keys, such as the **Call forwarding for external calls** PBX function. For more information, see the [Provisioning](#) topic and the [Auerswald DokuWiki](#).

---

## URI

- **Speed dialling:** Enter a phone number or a URI, such as 198@192.168.XX.YY or 198@company.com, here
- You will find more information on this subject in the [Speed dialling](#) topic.
- **XML mini browser:** Enter the web server address here
- You will find more information on this subject in the [XML mini browser](#) topic.

---

## Identity

- **Speed dial:** Identity used to trigger the call
- For more information, see [Speed dial](#).
- **Identity:** Identity used to trigger subsequent calls
- For more information, see [Identities](#).

---

## Reset level

Removes the function assigned to the key on the current level.

---

## Cancel

Closes the **Edit function keys** window without applying any of the changes you made.

---

## Save

## Edit function keys

Saves the entered parameters and close the window.

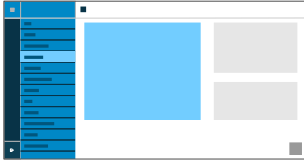
## Provisioning

[Basic Settings](#)

[Schedule](#)

[SIP provisioning](#)

## Basic Settings



---

### Automatic provisioning

Automatic provisioning is performed according to the schedule and each time the phone is switched on.

 For more information, see [Provisioning](#).

---

### Provisioning with DHCP data

The phone obtains the provisioning server's URL from a DHCP server. Additional data for controlling provisioning can also be transferred along with the URL.

 For more information, see [Provisioning](#).

---

### Redirect server

The phone obtains the provisioning server's URL from the redirect server.

 For more information, see [Provisioning](#).

---

### Provisioning from PBX search


Automatic provisioning of the phone is performed via the PBX.

 For more information, see [Provisioning](#).

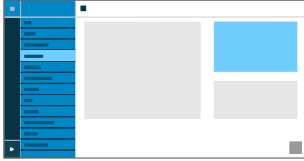
---

## Provisioning server URL

This URL is required if it is not obtained via DHCP or a redirect server.

 You will find more information on this subject in the [Provisioning](#) topic.

## Schedule



---

### Weekdays

The weekdays on which automatic provisioning is carried out.

 For more information, see [Provisioning](#).

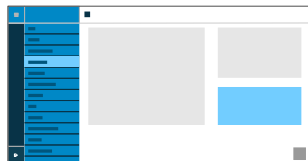
---

### Time

Time at which automatic provisioning is carried out. The time window is 60 minutes.

 For more information, see [Provisioning](#).

## SIP provisioning



---

### SIP provisioning

Starts remote configuration using SIP messages.

 For more information, see [Provisioning](#).



## Identities

[Managing Identities](#)

[Basic Settings](#)

[Options for Experts](#)

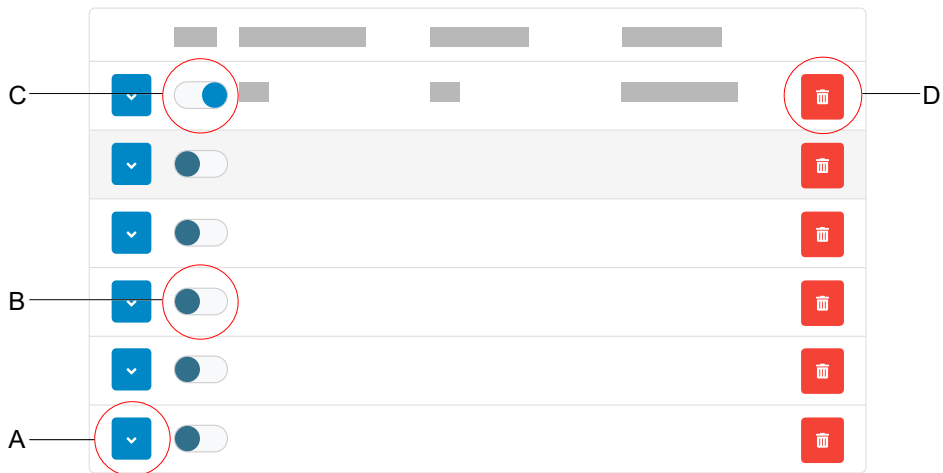
[Codecs](#)

[Registrar](#)

[NAT](#)

[Outbound proxy](#)

## Managing Identities



- A. Displays the settings for an identity
- B. Disabled identity
- C. Activated identity
- D. Deletes all the settings for an identity


## Basic Settings



---

### Active


Press this to switch on the selected identity.

 You will find more information on this subject in the [Identities](#) topic.

---

### SIP Username

Used to identify the device to the VoIP provider or in the PBX. Identical to the user name assigned by the VoIP provider or the internal phone number registered in the PBX.

 For more information, see [Identities](#).

---

### Password

Used to verify the user name. Identical to the password assigned by the VoIP provider when the identity was being created or the password entered in the PBX.

 For more information, see [Identities](#).


---

### Display Name

Freely selectable name.

The display name is displayed both in the Configuration Manager, under the Display name, and on the phone, below the status bar.

If you do not set a display name, the display on the phone contains these elements: SIP-username@SIP-registrar.


 You will find more information on this subject in the [Identities](#) topic.

---

### Authentication Username

Enter the authentication username provided by the VoIP provider.

You need the authentication username when you register with a VoIP provider. If you connect to an Auerswald PBX, you do not need to enter the authentication ID.

 For more information, see [Identities](#).

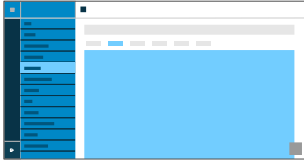
---

### SIP Registrar

This tells the phone where it can register itself. The information given here is the URL set by the VoIP provider on the IP address on which the registering PBX can be accessed.

 For more information, see [Identities](#).

## Options for Experts



---

### CLIR type (Number presentation suppression)

Area in the From header in which the VoIP provider expects to receive number presentation suppression. Selection as set in the PBX/at the provider.

#### **No display text**


A blank display text is sent in the From header.

#### **Anonymous**

The sent display text in the From header is "anonymous".

#### **User anonymous**


Both the display text and the User name section in the From header contain "anonymous".

 For more information, see [Anonymous Call](#).

---

### Voicemail number


Enter the voicemail number assigned by the VoIP provider or the voicemail number entered in the PBX.

 You will find more information on this subject in the [Voicemail number](#) topic.

---

## Pick-up code


This is required to perform a call pick-up. Character string stored on the PBX/at the provider, e.g. **##06** for Auerswald PBXs.

 For more information, see [Pick-Up](#).

---

## Music on hold

If a connection or call is on hold, the "music on hold" is played.

 You will find more information on this subject in the [Music on hold](#) topic.

---

## Framesize

Sets the RTP packet size (msec Audio/RTP package).

---

## Jitter buffer size

Specifies how many RTP packets can be cached to buffer or compensate for disruptions. (40 ... 160 msec)

 For more information, see [Identities](#).

---

## IP version

### IPv4


Sets IPv4 for the registrar.

### IPv6

Sets IPv6 for the registrar.

### Auto

Automatically sets the protocol used by the registrar.

 For more information, see [Identities](#).

---

## Interface type


The device can be accessed using the network or via VPN. Devices in one network cannot access devices in the other network. The Interface type sets the network in which the system is to look for devices, for the identity.

### Network

Sets the network as the interface.

### VPN

Sets VPN as the interface type.

 For more information, see [Identities](#) and [VPN](#).

---

## SRTP

Transport protocol for encrypted connections.

### Mandatory


This setting forces voice encryption to be on. If the voice partner (VoIP provider, PBX, external VoIP subscriber) does not support SRTP, the connection is not established.

### Preferred

Switches on negotiation for the encryption of call data via SRTP. When a call is made, the call partner will be asked if encryption is possible. If selected, voice data is transmitted in encrypted form. If not selected, it is not encrypted.

### Disabled

This setting forces voice encryption to be off. If the voice partner (VoIP provider, PBX, external VoIP subscriber) does not support encryption, the connection is not established.


 You will find more information on this subject in the [S RTP](#) topic.

---

## SIPS

Activates the transmission of encrypted SIP messages over TLS for connections with this identity.

The destination in the invite package header is contacted with an encrypted transmission.


 **Note:** To create a successful, secure connection, a certificate must be provided for the provided host, if necessary.

 For more information, see [SIPS](#) and [Certificate](#) topics.

---

## Peer-to-peer TLS

Forces the encryption of SIP messages over the entire route to the destination.

 **Note:** The call is not made if TLS is not available on the entire connection.

 For more information, see [Identities](#).

---

## Check hostname

Checks whether the certificate belongs to the domain/IP.



 For more information, see [Certificate](#).

---

## Certificate


If the **SIPS** function is activated, the system checks whether the certificate belongs to the domain/IP.

 For more information, see [Certificate](#).

---

## Session timer

Switches on the check after a connection for a call that is still in existence.

 **Note:** When the SIP session timer is switched on, this may result in the call being interrupted more frequently after the specified interval, if a VoIP provider has not implemented session renewal properly. In this case, set a different session timeout or disabled the session timer.

 For more information, see [SIP](#).

---

## Session timeout (in min.)

2 ... 255 minutes, default: 15 minutes

Specifies the number of minutes after which the SIP session timer is to check a call's connection.

 For more information, see [SIP](#).

---

## Protocol type


**UDP**

(the User Datagram Protocol) is used to send data packets over connectionless non-secure communication lines.

## TCP

(Transmission Control Protocol) segments data into packets up to a specified size and sends these individual data packets to the recipient address until receipt has been confirmed.

 For more information, see [SIP](#).


 **Important:** If encryption is enabled by SIPS, the TCP transport protocol is used. Manual settings are overwritten.


---

## Local SIP port

0 ... 65535

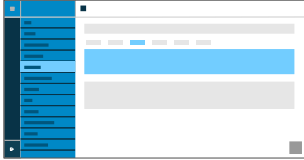
Sets the outgoing port for SIP messages.

 **Note:** Enter "0" to generate a random port.

 **Important:** If you define more than one identity, the SIP port for each identity must be different. If you enter "0", different ports are assigned automatically.

 For more information, see [SIP](#).

## Codecs



---

### Codecs

#### Active


Best available quality: G.711, G.722

Best possible compression: G.726, G.729, iLBC

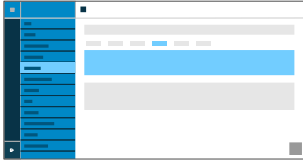
The sequence in which the active codecs are displayed in the list sets the sequence in which they are applied.

#### Inactive

You can select inactive codecs and drag & drop them in the **Active** list to arrange them, or remove them from the list.

 You will find more information on this subject in the [Identities](#) topic.


# Registrar



---

## Registrar active

Switches the registrar on.


 For more information, see [Identities](#).

---

## Realm

Name space that contains all the entries within one directory, specified by the VoIP provider/PBX operator.


Ideally, the **Realm** should be identical to the VoIP provider **SIP-Registrar** or PBX address.

 For more information, see [Identities](#).

---

## Registrar port

1 ... 65535

 **Caution:** Each time a port is opened on the router, this creates a potential security risk. It is essential you put additional protective measures in place.

 For more information, see [Identities](#).


---

### Time lapse registration (min.)

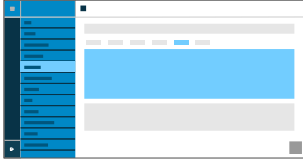
1 ... 60 minutes

The registration time is the number of minutes that must elapse before the telephone reregisters itself with the VoIP provider.

The value you enter here should be a compromise between a short timespan (which generates traffic with the provider) and a long de-registration period.

 For more information, see [Identities](#).

# NAT



## SIP NAT traversal

Requirements:


- configured DNS server
- When the **activated** option is selected: **Registrar** is enabled for the telephone

### Active

NAT traversal is performed by the telephone. The SIP request also contains an "rport" part in which the IP addresses used here (local, public) are transported.


### Active with STUN

NAT traversal is performed by the telephone. To do this, you must also specify a STUN server.

 **Caution:** Each time a port is opened on the NAT router, this creates a potential security risk. Implement appropriate security measures.

### Inactive

NAT traversal is not performed by the telephone. The router which connects the local area network with the Internet should be a properly functioning SIP-aware router which performs NAT traversal.

 For more information, see [Identities](#).

---


## RTP NAT traversal


Requirement:

- configured DNS server

### Active with STUN

NAT traversal is performed by the telephone. To do this, you must also specify a STUN server.

 **Caution:** Each time a port is opened on the NAT router, this creates a potential security risk. Implement appropriate security measures.

 **Note:** if there are problems with half-open (dropped) call connections, a STUN server should be used (**Active with STUN**).

### Inactive

NAT traversal is not performed by the telephone. The router which connects the local area network with the Internet should be a properly functioning SIP-aware router which performs NAT traversal.

 For more information, see [Identities](#).

---

## STUN server URL

Requirement:

- configured DNS server


**Note:** The STUN server is used if **Active with STUN** has been selected.


 For more information, see [Identities](#).


---

## STUN server port

1 ... 65535

 **Note:** If you encounter problems with half-open (dropped) call connections, enabling the RTP port might help.

 **Important:** Every time port forwarding is performed, there is a security risk. For this reason, we recommend you use port forwarding as little as possible.

 For more information, see [Identities](#).

---

## Time lapse registration (min.)

1 ... 60 minutes

The registration time is the number of minutes that must elapse before the telephone reregisters itself with the VoIP provider.

The value you enter here should be a compromise between a short timespan (which generates traffic with the provider) and a long de-registration period.


 For more information, see [Identities](#).


---

## NAT Keep-Alive Interval (sec.)

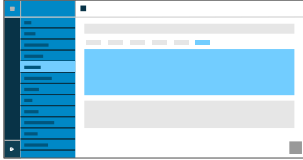
After the time specified here has passed, NAT Keep-Alive packets are sent to the firewall to maintain the NAT mapping.



 **Note:** Some providers lock accounts if the NAT Keep-Alive Interval is too short. As a rule, this is reported with error message 503 during SIP registration. If this problem occurs, we recommend you reduce the value (e.g. to 180).

 For more information, see [Identities](#).

## Outbound proxy



---

### Mode

#### Inactive

Deactivate this function if


- the registrar can be accessed without outbound proxy
- no outbound proxy is available

#### Automatically

The PBX automatically determines an outbound proxy.

#### Manually

The outbound proxy is a fixed default setting. Enter this data as an IP address or a URL.


 For more information, see [Outbound proxy](#).

---

### URL

Server address for the outbound proxy.

 **Note:** The **URL** must be added if **Manually** mode is selected.


 For more information, see [Outbound proxy](#).

---

## Port

Port for the outbound proxy.


 **Note:** The **Port** must be added if **Manually** mode is selected.

 For more information, see [Outbound proxy](#).

---

## Alternative URL


Alternative server address for the outbound proxy.

 For more information, see [Outbound proxy](#).

---

## Alternative port

Alternative port for the outbound proxy.

 For more information, see [Outbound proxy](#).

## Firmware Update

[Basic Settings](#)

[Scheduling](#)


## Basic Settings



---

### Check for updates


If selected, the phone automatically checks for current updates.

 For more information, see [Firmware Update](#).

---

### Automatically install updates


If selected, available updates are installed automatically.

 For more information, see [Firmware Update](#).

---

### Update server URL


In the factory settings: `https://update.auerswald.de`

 You will find more information on this subject in the [Firmware Update](#) topic.

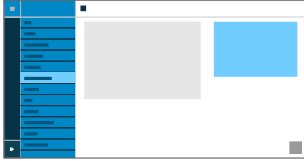
---

### Start update

Starts installation of a new firmware version.

 For more information, see [Firmware Update](#).


## Scheduling



---

### Weekdays


The weekdays on which the phone checks for available updates and installs them.

 For more information, see [Firmware Update](#).

---

### Time

Time at which the phone checks for available updates and installs them.

 For more information, see [Firmware Update](#).

## Network

Current Settings

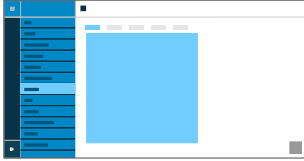
IPv4

IPv6

VLAN

VPN

## Current Settings




Lists all the network settings made on the phone.

---

### DNS

IP address of the DNS server used here.

 For more information, see [IPv4](#).

---

### IP addresses

#### Protocol

Shows which network protocol is in use.

#### IP address

Displays the phone's IP address.

#### Prefix

Different subnet mask notation.

Example: 24 corresponds to 255.255.255.0

---

### Forwarding routes

#### Protocol

Shows which network protocol is being used by the forwarding route.

#### Gateway



## Current Settings

Displays the IP address of the forwarding route.

If only one router is in use, the DNS's IP address is the same as that of the gateway. If more than one server is being used to handle these tasks, the IP addresses will be different.

## IPv4



---

### IPv4 mode

#### DHCP

The phone obtains its IP address automatically from a DHCP server.

#### Static

The telephone uses a fixed IP address (supplied by the system administrator).

#### Disabled

IPv4 can only be disabled if IPv6 is enabled.

 For more information, see [IPv4](#).


---

### IP address

If you select **DHCP**: the phone's IP address is displayed

If you select **Static**: you can enter/change the phone's IP address


In the factory settings: 0.0.0.0.

 You will find more information on this subject in the [IPv4](#) topic.

---

### Subnet mask

Example: 255.255.255.0


 You will find more information on this subject in the [IPv4](#) topic.

---

## Gateway

Example: 192.168.0.2


The gateway provides interoperability between networks, so data can pass from one to another. The provider or the network system administrator provide the gateway.

 You will find more information on this subject in the [IPv4](#) topic.

---

## DNS 1


The DNS server is needed for Internet access. The provider or network system administrator sets the DNS server.

 You will find more information on this subject in the [IPv4](#) topic.

---

## DNS 2

Optional

 You will find more information on this subject in the [IPv4](#) topic.

## IPv6



---

### IPv6 mode

#### DHCP

The phone obtains its IP address automatically from a DHCP server.

#### SLAAC (StateLess Address AutoConfiguration)

The phone obtains its IP address in messages sent from an IPv6 router at regular intervals.

#### Disabled


IPv6 can only be disabled if IPv4 is enabled.

 For more information, see [IPv6](#).

---

### DNS 1

The DNS server is needed for Internet access. The provider or network system administrator sets the DNS server.


 You will find more information on this subject in the [IPv6](#) topic.

---

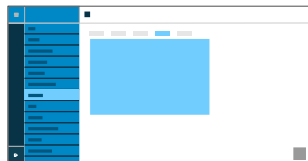
### DNS2

Optional

## IPv6

 You will find more information on this subject in the [IPv6](#) topic.

## VLAN



---

### Phone VLAN

Switches on VLAN for the phone.

➤ You will find more information on this subject in the [VLAN](#) topic.

---

### Phone VLAN ID

Enter the phone's VLAN ID: 1 ... 4094

The associated data packets are tagged with this ID.

➤ You will find more information on this subject in the [VLAN](#) topic.

---

### Phone VLAN priority

0 (lowest priority) to 7 (highest priority)

➤ You will find more information on this subject in the [VLAN](#) topic.

---

### PC port VLAN

Switches on VLAN for the PC port.


➤ You will find more information on this subject in the [VLAN](#) topic.

---

### PC port VLAN ID

Enter the PC port's VLAN ID: 1 ... 4094


The associated data packets are tagged with this ID.

 You will find more information on this subject in the [VLAN](#) topic.

---

### PC port VLAN priority

0 (lowest priority) to 7 (highest priority)

 You will find more information on this subject in the [VLAN](#) topic.

## VPN



---

### VPN

Switches on VPN for the phone.

 For more information, see [VPN](#).

---

### VPN type

#### IPsec Xauth PSK

Authentication is performed using a shared secret and a personal secret.

#### IPsec Xauth RSA

Authentication is performed using a key pair: one private key and one public key.

#### IPsec Hybrid RSA

A mixture of **IPsec Xauth PSK** and **IPsec Xauth RSA**

#### Open VPN

OpenVPN libraries are used to set up a VPN over an encrypted TLS/SSL connection.


 For more information, see [VPN](#).

---

### Name



Freely selectable name for the VPN connection.

 For more information, see [VPN](#).

---

## Server

Server address for the VPN connection.

Your network administrator will give you the server address.

 For more information, see [VPN](#).

---

## User name

User name for the VPN connection.

Your network administrator will give you your user name.

 For more information, see [VPN](#).

---

## Password

Password for the VPN connection.

Your network administrator will give you the password.

 For more information, see [VPN](#).

---

## DNS server

Address of the DNS server used for the VPN connection (e.g. 8.8.8.8).

Your network administrator will give you the DNS server address.

 For more information, see [VPN](#).

---

## Search domain

Search domain addresses for the VPN connection.

Your network administrator will give you the search domain addresses.

 For more information, see [VPN](#).

---

## Forwarding routes


Settings for the network, IP address range (e.g. 10.0.0.0/8).

Your network administrator will give you the IP address range for the forwarding routes.

 For more information, see [VPN](#).

---

## IPsecIdentifier

 **Caution:** IPsecIdentifier settings can vary greatly, depending on which server is in use. The network administrator must predefine the configuration.

 For more information, see [VPN](#).

---

## Preinstalled IPsecSecret

Authentication key.

 For more information, see [VPN](#).

---

## IPsecUserCert

This is generated by the system administrator or by the user.

The IPsecUserCert must fulfil these criteria:

- X.509 standard
- .pem format

 For more information, see [VPN](#).

---

### **IPsecUserPrivateKey**

This is generated by the system administrator or by the user.

The private key must fulfil these criteria:

- X.509 standard
- .pem format

 For more information, see [VPN](#).

---

### **IPsecCaCert**

Acts as a "trust anchor" for the connection.

The IPsec CA certificate (IPsecCaCert) must fulfil these criteria:

- X.509 standard
- .pem format

 For more information, see [VPN](#).

---

### **IPsec server certificate**

Server-side certificate.

The IPsec CA certificate (IPsecCaCert) must fulfil these criteria:

## VPN

- X.509 standard
- .pem format

 For more information, see [VPN](#).

---

### Open VPN Configuration

Contents of a configuration file (openvpn.cfg). Component part of setting up an open VPN.

 For more information, see [VPN](#).

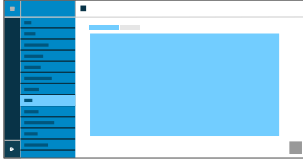
LDAP

## LDAP

[Basic Settings](#)

[LDAP filter](#)

## Basic Settings



---

### LDAP protocol

Protocol used on the LDAP server

#### LDAP

By default, unencrypted data traffic.

#### LDAP StartTLS

Data traffic encrypted using Transport Layer Security.

#### LDAPS

LDAP via SSL technology.

---

### Active


Switches on the directory service request.

 For more information, see [LDAP](#).

---

### Server


The LDAP server's domain name or IP address

 You will find more information on this subject in the [LDAP](#) topic.

---

## Port


The LDAP server's port. On PBXs, use the preset port: port 389.

 You will find more information on this subject in the [LDAP](#) topic.

---

## User name

User name assigned when the LDAP server was being configured. Used for identification to the LDAP server.


 **Note:** You can find the user name in your PBX's Configuration Manager: select **User data > Address Books > Settings**. The user name is in the **Simplified user name** line, beside the **User name** (e.g. cn=auerswaldschandelah,dc=auerswald).

 For more information, see [LDAP](#).

---

## Password

This is the password assigned when the LDAP server was being configured. It is used for identification to the LDAP server.

 **Note:** You can find the password in your PBX's Configuration Manager: select **User data > Address Books > Settings**. The password is in the **Simplified user name** line, beside the **Password**.

 For more information, see [LDAP](#).


---

## Search area

## Basic Settings

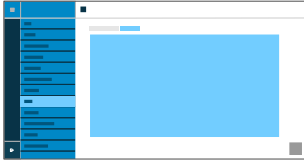
Point in the folder from which the LDAP search starts.

Example: BaseDN dc=auerswald

 You will find more information on this subject in the [LDAP](#) topic.



## LDAP filter



**i** Only experts should make the settings available in the **LDAP > LDAP filter** area. LDAP filter syntax is used. RFC 2254 and RFC 4515 are used.

To enable contact data to be transferred from the LDAP server, enter the following values, listed below, in the end device.

---

### Name filter

Sets the name filter used for the LDAP search.

**🔗** You will find more information on this subject in the [LDAP](#) topic.

---

### Number filter

Filter for assigning numbers to names for incoming and outbound calls.

**🔗** You will find more information on this subject in the [LDAP](#) topic.

---

### Number filter dial preparation


Filter for displaying the suggestions list in dial preparation.

**🔗** You will find more information on this subject in the [LDAP](#) topic.

---

## Max. Matches


Here, set the maximum number of search results that the LDAP server is to output.

 You will find more information on this subject in the [LDAP](#) topic.

---

## Name attributes


Relevant name attributes.

 You will find more information on this subject in the [LDAP](#) topic.

---

## Phone number attributes


Relevant phone number attributes.

 You will find more information on this subject in the [LDAP](#) topic.

---

## Sort by


Sorting algorithm (by First name, by Last name)

 You will find more information on this subject in the [LDAP](#) topic.

---

## Number search incoming


If "Number search incoming" is enabled, the display name is searched for via LDAP, for incoming calls.

 You will find more information on this subject in the [LDAP](#) topic.

---

## Number search outgoing

If "Number search outgoing" is enabled, the display name is searched for via LDAP, for outgoing calls.

 You will find more information on this subject in the [LDAP](#) topic.

## Telephony

Call signalling

Dialled calls

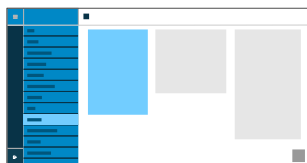
Call forwarding

## Call signalling

Reverse search

Call waiting

Do not Disturb




## Reverse search

---

### Reverse Search

For incoming and outbound calls, this option displays the names of saved contacts that are suitable for the phone number.

 You will find more information on this subject in the [Reverse Search](#) topic.

## Call waiting

---

### Active

Indicates an incoming call during a call.


 For more information, see [Call Waiting](#).

---

### Call waiting tone

This acoustic signal indicates that there is an incoming call during a call.

If this option is disabled, incoming calls are only signalled by a change in the display content during a call.

 You will find more information on this subject in the [Call waiting](#) topic.

## Do not Disturb

---

### Active

Rejects calls to the phone.

The caller hears a busy tone.

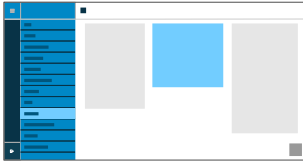
 For more information, see [Do not disturb](#).



## Dialled calls

Anonymous call

Automatic Start of Call




## Anonymous call

---

### Active

Stops your phone number from being displayed to the person you are calling


 For more information, see [Anonymous Call](#).

## Automatic Start of Call

---

### Active


The call starts automatically after the predefined time.

 For more information, see [Automatic Start of Call](#).

---

### Seconds until start of call

You can use the sliding adjuster to set the number of the seconds that the phone waits before making the automatic call.

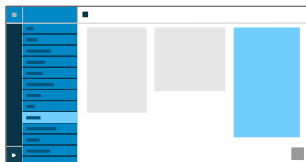
 You will find more information on this subject in the [Automatic Start of Call](#) topic.

## Call forwarding

Immediately

On busy

On no reply



## Immediately

---

### Active


Forwards incoming calls to the set destination number immediately.

 For more information, see [Call forwarding](#).

---

### Call forwarding destination

Enter the destination number here.

 You will find more information on this subject in the [Call Forwarding](#) topic.

## On busy

---

### Active


Forwards incoming calls to the set destination number if the subscriber is busy.

 For more information, see [Call forwarding](#).

---

### Call forwarding destination

Enter the destination number here.

 You will find more information on this subject in the [Call Forwarding](#) topic.

## On no reply

---

### Active


Forwards incoming calls to the set destination number if these calls have not been taken within a set time.

 For more information, see [Call forwarding](#).

---

### Call forwarding destination


Enter the destination number here.

 You will find more information on this subject in the [Call Forwarding](#) topic.

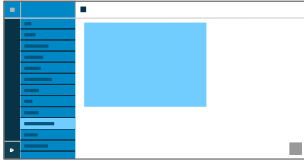
---

### Waiting time before call forwarding

Here, set the number of the seconds that the phone waits before activating call forwarding.

 You will find more information on this subject in the [Call Forwarding](#) topic.

## Date and Time



---

### NTP

The time is automatically transferred from the NTP server.

If NTP is not enabled, there is no synchronisation between the telephone and the time server. It is possible that the date and time may be displayed incorrectly.

 For more information, see [Date and Time](#).

---

### NTP server

The time server that supplies the time stamp. Use the address of a time server that is geographically close by, to achieve maximum accuracy.


Example: pool.ntp.org

 For more information, see [Date and Time](#).

---

### Time zone

Data on the phone that has a time stamp (such as call history entries, calendar entries and e-mails) is displayed with the correct time.

 You will find more information on this subject in the [Date and Time](#) topic.



---

## Time format

**12 h:** Time display in 12-hour format. In addition, the time range AM/PM is displayed.

**24 h:** Time display in 24-hour format.

 For more information, see [Date and Time](#).

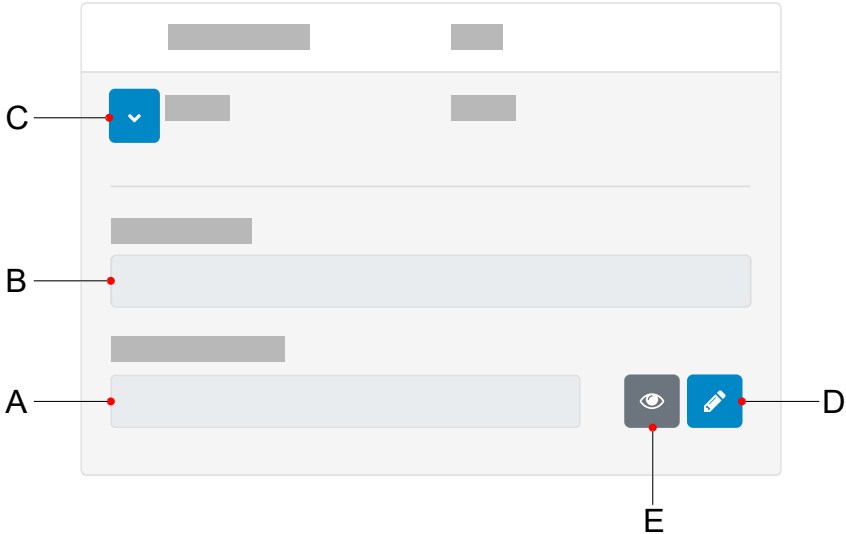
User

## User

[User administration](#)

[Settings](#)

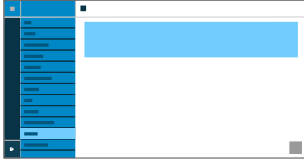
## User administration



- A. **Password** field
- B. **User name** field
- C. Displays the settings for a user
- D. Click on the Edit icon to assign a new password
- E. Displays/hides the currently set password (only in Edit mode)

**Note:** Currently, there is only one preset user (admin) whose user name and password can be changed.

# Settings




---

## User name

Displays the user name.

 **Note:** Do not enter colons ":" in the user name.

 You will find more information on this subject in the [User](#) topic.


---

## Password

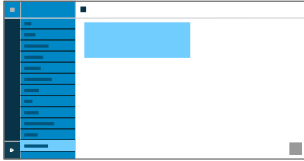
Enter/change the password here.

When you set a new password, comply with the conventions below. The password must:

- be different from the previous one used
- contain at least one number
- contain at least one capital letter
- contain at least one lower case letter
- contain at least one special character
- be at least 8 characters long

 You will find more information on this subject in the [User](#) topic.

## Backup and restore



---

### Create backup

Exports all phone settings to an .xml file.

A copy of the file will be saved on the PC.

**i Note:** Depending on the setting for your browser, when you export the file, you will either be prompted to specify where the file will be stored or the file will be saved to your PC's Downloads folder. Example, Mozilla Firefox: **Settings > Files and Applications > Downloads.**

 For more information, see [Backup](#).

---

### Restore backup

Uploads all settings in the saved .xml file to the phone.

There are two steps in the procedure:

- **Browse:** Displays a dialogue in which you can select a previously saved copy of the phone settings in the appropriate folder on the data storage device.
- **Import:** Uploads the settings from the selected .xml file to the phone.

 For more information, see [Backup](#).

# Using the Phone

[Introduction](#)

[Calls](#)

[Contacts](#)

[Notifications](#)

[Settings](#)

# Introduction

Display

Keys and LEDs

Apps

## Display

[Display overview](#)

[Status Line](#)

[Status widget](#)

[Status bar](#)

[Function Keys](#)

[System icons](#)

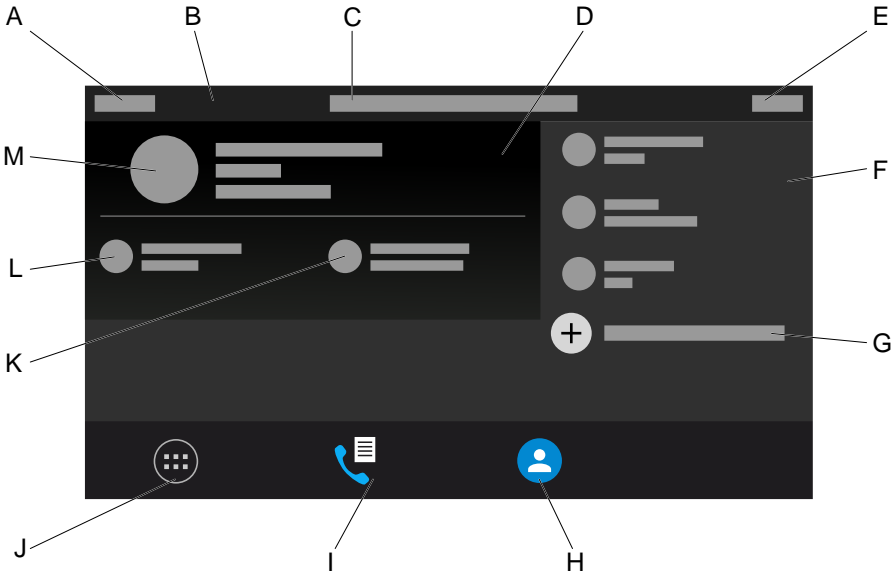
[Entry and Selection Fields](#)

[Screen keyboard](#)



## Display overview

The next figure shows the telephone display with the Home screen open.



- A. Calendar week
- B. Status line
- C. Date
- D. Status widget
- E. Time
- F. Touch function keys
- G. Add additional touch function keys
- H. Soft icon **Contacts**
- I. Soft icon **Call list**

## Display overview

- J. Soft icon **Menu**
- K. Soft icon **New messages**
- L. Soft icon **New calls**
- M. ICH Contact

## Status Line

The telephone's status line displays the following information:

- Calendar week
- Date
- Time


## Status widget

The status widget displays the following information:


- Avatar or profile picture
- Device type
- Contact name as assigned in **Contacts** > **ME**
- Display name as assigned in **Identities**
- Missed Calls
- Voice messages

## Status bar

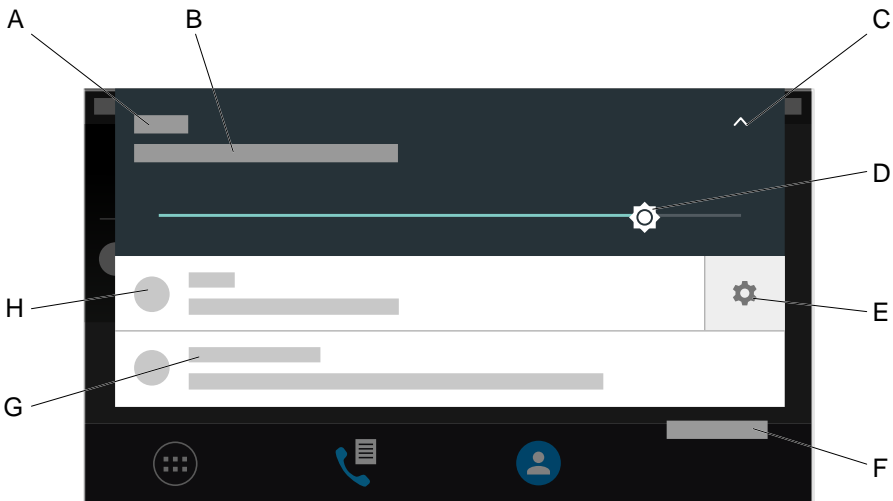
To display the status bar,

- swipe from the top edge of the display to the bottom
- press the  Messages key

To hide the status bar,

- swipe from the bottom edge of the display to the top
- press the  Back key


The status bar tells the user about the telephone's status at any time.



- A. Time
- B. Date
- C. Hides or displays the slider that is used to set the display brightness
- D. Brightness adjuster


E. **Settings icon** for working with notifications

F. Deletes all notifications

 **Note:** **Delete all** is only displayed when the brightness adjuster is hidden.

G. Notification text

H. Notification icon

 **Note:** If you need to make other notification-related settings, you will find other options in a context menu. Follow these steps to display it:

- Press and hold the notification
- Swipe the notification to the left or right, to display the **Settings icon**. Select the **Settings icon** to open the menu.

## Function Keys

---


### Touch function keys

The configured touch function keys are displayed on the top right of the display.

Press these keys to perform configured functions.

Use the up/down arrow keys or gesture control to scroll through the list, which contains more than 5 configured touch function keys.

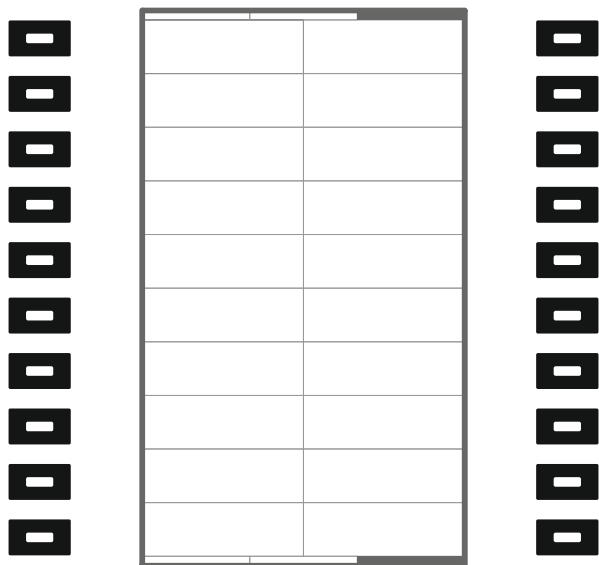
You can configure more than 20 function keys.

 You will find more information on using the telephone to configure touch function keys in the [Function keys](#) section, and using the Configuration Manager in the [Edit function keys](#) section.

---

### COMfortel<sup>®</sup> D-XT20 key extension module

The number of programmable function keys on the COMfortel<sup>®</sup> D-400 can be extended by adding up to three COMfortel<sup>®</sup> D-XT20 key extension modules (not included in the scope of delivery). Modules are attached to the right-hand side of the phone. When the maximum number of modules has been installed, 198 freely programmable function keys are available.



---

### Selecting a key level on the key extension module

Change between key levels by pressing the control rocker.

You can see the current key level on the horizontal scroll bar at the top and bottom edge of the display.

The display content changes according to the selected key level.



## System icons



Menu



Call list



Contacts



Add a function key



Function key: Speed dial



Function key: Identity



Function key: Call forwarding



Function key: Call waiting



Function key: Anonymous call



Function key: Activate config



Function key: Do not disturb



Function key: Group



Function key: XML Minibrowser



















Call forwarding immediately





Call forwarding on no reply

## System icons


-  Anonymous call
-  Do not disturb enabled
-  Incoming call
-  Duration of an active call
-  Active call
-  Call on hold
-  Accepted call
-  Missed call
-  Outgoing call
-  Unsuccessful outgoing call
-  Successfully forwarded call
-  Rerouted call
-  Call taken externally
-  Active conference call
-  Conference call participant
-  Own device is on hold

## System icons

 Own device is being forwarded


 Connect subscriber


 Delete numbers


 Switch to numerical entry


 Switch to alphanumeric entry

 Forward call


 Successful forwarding of a call


 Failure to forward a call

 Accept a call

 Reject a call/hang up


 Search

 Further information


 Back/quit search

 Add Contact


 Contacts


 Status icon: call

## System icons


 Status icon: New message


 Status icon: Missed call

 Firmware Update


 No account

 Warning

 Setting the volume


 Call details

 Edit number before call

 Add contact


 Delete from list

 Open list







 Close list

 Identity active

 Identity inactive

 Identity not configured

## Entry and Selection Fields

Element	Function
	<p>An empty entry field is displayed, in which you can enter a name, number or address. Tap on the entry field and enter the text or number. You can either use the screen keyboard or the keys on the telephone to enter it.</p> <p> <b>Notes:</b> Any text already present in the entry field is overwritten by the text you input.</p> <p> The device is equipped with a T9 dictionary. The dictionary language changes to the language set in the device. You can enter frequently-used words in the dictionary. These words are then displayed as suggestions when you are entering text.</p>
	<p>Option fields for selecting the required setting. The selected setting is marked by a coloured dot. Tap on an option to activate it. The previous selection is disabled at the same time.</p>
	<p>Check boxes for enabling or disabling settings and functions. An empty check box means "inactive". A selected check box means "active". To change a check box's state, tap on it.</p>
	<p>Use the sliders to make infinitely variable settings (e.g. brightness or volume settings). The slider's position shows where the setting is. The further the slider is to the</p>

<b>Element</b>	<b>Function</b>
	left, the lower the value that is set. The further the slider is to the right, the higher the value that is set.

## Screen keyboard



A. Marked text

B. Insertion marks

To change the marking, move the marks left or right.

C. **CUT**

Copies the selected text to the clipboard and removes it from the current view.

D. **COPY**

Copies the selected text to the clipboard.

E. **SELECT ALL**

Selects the entire text in the entry field.

F. Shift key

Switches between upper and lowercase letters.

G. Changes between numerical and alphanumeric entry.

H. Space bar

I. Confirms the entry and returns to the main menu.

## Screen keyboard

- J. Deletes the entry character by character.
- K. Keyboard  
Numerical or alphanumeric, depending on current setting.
- L. **FINISHED**  
Confirms the entry and returns to the main menu.



## Keys and LEDs

Keypad

Dedicated function keys

Clear, Home, Back

Directional pad and OK

Casing LED

## Keypad


Use the keypad to dial subscriber numbers and to enter numbers and letters. Press the digit keys one or more times until the required character appears. The assignment is then listed in the table below.

Key	Assignment
1	1 - / @ +
2	a b c 2 A B C ä Ä
3	d e f 3 D E F
4	g h i 4 G H I
5	j k l 5 J K L
6	m n o 6 M N O ö Ö
7	p q r s 7 P Q R S ß
8	t u v 8 T U V ü Ü
9	w x y z 9 W X Y Z
0	Spacer , . 0 : ' " ? ¿ ! i _
*	* ( ) [ ] < = > « » ^ ` ~ { }
#	# % & § £ \$ €

## Dedicated function keys

### Messages with LED

- Displays these lists:
  - Voice messages
  - Missed calls

 **Note:** You can configure how the LED on the message key works by selecting **Settings > Display and LED > Seen missed calls/Heard voice messages**.

### Microphone with LED

- Switches the microphone off (mute) or on again.
- LED is shining red: Microphone is disabled.

### Hold with LED

- You can put an active call on hold or reconnect it again.

### Redialling

- Displays the outgoing calls list.

### Headset with LED

- Press the Headset key to enable or disable the headset.
- LED is shining green: Headset operation is active.
- LED is flashing green: Inbound call.
- LED is shining red: There is an active call in the headset.

### Transfer without LED

## Dedicated function keys

- You can transfer calls with or without prior notification.

### **Minus**

- Reduces the volume of the ringer, receiver, or loudspeaker, depending on operational state.

### **Loudspeaker with LED**

- LED is flashing green: Inbound call.
- LED is flashing red: Loudspeaker listening is enabled.
- LED is shining red: Hands-free calling is enabled.

### **Plus**

- Increases the volume of the ringer, receiver, or loudspeaker, depending on operational state.

## Clear, Home, Back

### Clear

- Press this to delete the last character in front of the cursor.

### Home


- Press this to display the home screen. Previously started actions will continue in the background.

### Back

- Press this to return to the most recently opened menu and end the current action.

## Directional pad and OK

Use the directional pad to navigate in the display.

Use the directional pad direction keys to start operation and activate required elements in lists and menus. Press OK  on the directional pad to select an activated element and execute the element's function.

## Casing LED

The Casing LED indicates the following statuses:

- Flashing red (quickly): Incoming call
- Shining red: Active call

Apps


## Apps

[All Apps](#)

[Installing Additional Apps](#)



## All Apps

Tap on  to display all the apps and widgets installed on the telephone.



Displays a selection list containing settings for configuring the device.



You can view and process downloads performed with the browser.



F-Droid is an alternative app store for the Android mobile operating system. Only free software is offered on it, usually with a GNU GPL or Apache license.



Runs an app for viewing and managing pictures.



K-9 Mail is a free e-mail programme for the Android mobile operating system. The software is supplied under an Apache license and is available as an app from Google Play Store, F-Droid and the official website, among others.



Opens the calendar with the dates overview. You can enter new dates or date series.



Displays the contact list.



Runs an app for listening to and managing music.



Runs a calculator app with standard calculation types: addition, subtraction, multiplication and division.




Displays the call list.

## All Apps





Runs an app for showing the time on the display. You can also activate an alarm clock or use a stopwatch function.

## Installing Additional Apps

You can install additional apps from the FDroid App Store . To enable this, the installation of additional apps must be permitted, see [Apps](#).

To install an app:

1. To display the **Apps** dialogue, select **Menu > Settings > Apps**.
2. Select permission to install apps.
3. Close the menu.
4. Open FDroid App Store .
5. Select the app you want in the list.
6. Press the **Install** key.
7. Follow the additional instructions for the particular app.  
Installed apps are listed in the installed apps overview.

 **Caution:** Apps and files downloaded from the Internet may contain viruses which can damage your telephone. To protect your telephone and your personal data, we strongly recommend you only install apps and files from trustworthy sources.


Calls

## Calls

[Navigation](#)

[Options](#)

## Navigation

 You will find a graphical overview of how to navigate in the different lists in the [Caller list](#) topic.

---

### All

Press this to list all calls in chronological order.

---

### Missed

Press this to list all missed calls by how recent they are.

---

### Outgoing

Press this to list all outgoing calls by how recent they are.

## Options

---

### Trigger a call

Tap on the phone number/contact to start a call.

---

### Display options

- ∨ Displays the list with all available options.

---

### Call details

Displays additional details about the selected call:

- Call type icon
- Contact/phone number
- call type
- Date
- Time
- Call duration

---

### Edit number before call


Displays the previously selected phone number. You can then modify the number by selecting:

- Clear
- Complete

---

### Add contact



Jumps to the **Add Contact** menu.

 You will find more detailed information on how to create or edit a contact in [Edit Contact](#).

---


### Clear entry

Deletes the selected entry in the Call history.

**Note:** Alternatively, you can delete entries in the caller list by pressing Delete . To delete the entire list, press the  button for approx. 2 seconds.

---

### Using the Call History in Different Ways

1. Select an entry in the call history.
2. Press and hold OK  for approx. 2 seconds.  
The options described in the "Menu" topic are listed.
3. Select any required options.

## Contacts

[Navigation](#)

[Edit Contact](#)



# Navigation

---

## Favourites

Lists all the contacts that are marked as Favourites (identified by a star).

---

## All

Lists all contacts in a sorted sequence. The sorting procedure you select defines the sorting sequence.

---

## Options

- ⋮ Displays these options:
- **Displayed contacts**
- **Manage accounts**
  - Displays the settings for LDAP, see [LDAP](#)
- **Settings**
  - Here, you can modify the selected sorting process.

---

## Delete


Deletes one or more contacts.

To delete a single contact, follow these steps:

1. Tap on the contact to open it.
  - All the data stored for the contact is displayed.
2. Profile picture > ⋮ > **DELETE**
3. Confirm the action.


## Navigation

To delete one or more contacts, follow these steps:

1. Press the contact to be deleted for approximately 2 sec.  
A column with a check box is displayed.
2. Select the contact you want to delete.
3.  > **DELETE**
4. Confirm the action.

---

## Search

 Displays a search field. Use the screen keyboard that is now displayed to search for names, parts of names or numbers.

---

## Add Contact



Changes the menu, so you can create a new contact.

## Edit Contact

---

### Name

Enter a name using the

- keypad or
  - screen keyboard.
- ∨ You can then display or edit more details for the name.

---

### Phone

Enter a phone number using the

- keypad or
  - screen keyboard.
- ∨ You can then display or edit more details for the number.

---

### E-mail

Enter an e-mail address using the

- keypad or
  - screen keyboard.
- ∨ You can then display or edit more details for the e-mail address.

---

### Other fields

Enter more information for the contact using the

- keypad or

## Edit Contact



- screen keyboard.
- ✓ You can then display or edit more details for the contact.

---

## Save

- ✓ Saves the contact data locally in the telephone.

## Notifications

 **Note:** The options and displays provided in the Notifications menu option are identical to those for the message key , see [Dedicated function keys](#).

---

### A missed call

Select to open the list **Calls > Missed**.

---

### A new voice message

The mailbox is called and the dialler is displayed.

Follow the spoken instructions to find out what to do next.

## Settings

Network

Identities

Sound

Language and location

Display and LED

Telephony

Function keys

Firmware Update

Provisioning

Access

Apps

Date and Time

Contacts/LDAP

About phone

## Network

[IPv4 Settings](#)

[IPv6 Settings](#)

[VLAN](#)

[VPN](#)

## IPv4 Settings

---

### IPv4 mode

#### DHCP

The phone obtains its IP address automatically from a DHCP server.

#### Static

The telephone uses a fixed IP address (supplied by the system administrator).

#### Disabled

IPv4 can only be disabled if IPv6 is enabled.

 For more information, see [IPv4](#).


---

### IP address

If you select **DHCP**: the phone's IP address is displayed

If you select **Static**: you can enter/change the phone's IP address


In the factory settings: 0.0.0.0.

 You will find more information on this subject in the [IPv4](#) topic.

---

### Subnet mask

Example: 255.255.255.0

 You will find more information on this subject in the [IPv4](#) topic.


---

### Gateway



Example: 192.168.0.2


The gateway provides interoperability between networks, so data can pass from one to another. The provider or the network system administrator provide the gateway.

 You will find more information on this subject in the [IPv4](#) topic.

---

### DNS 1


The DNS server is needed for Internet access. The provider or network system administrator sets the DNS server.

 You will find more information on this subject in the [IPv4](#) topic.

---

### DNS 2

Optional

 You will find more information on this subject in the [IPv4](#) topic.

## IPv6 Settings

---

### IPv6 mode

#### DHCP

The phone obtains its IP address automatically from a DHCP server.

#### SLAAC (StateLess Address AutoConfiguration)

The phone obtains its IP address in messages sent from an IPv6 router at regular intervals.

#### Disabled


IPv6 can only be disabled if IPv4 is enabled.

 For more information, see [IPv6](#).

---

### DNS 1


The DNS server is needed for Internet access. The provider or network system administrator sets the DNS server.

 You will find more information on this subject in the [IPv6](#) topic.

---

### DNS2

Optional


 You will find more information on this subject in the [IPv6](#) topic.

## VLAN

---

### Phone VLAN

Switches on VLAN for the phone.


 You will find more information on this subject in the [VLAN](#) topic.

---

### Phone VLAN ID

Enter the phone's VLAN ID: 1 ... 4094


The associated data packets are tagged with this ID.

 You will find more information on this subject in the [VLAN](#) topic.

---

### Phone VLAN priority


0 (lowest priority) to 7 (highest priority)

 You will find more information on this subject in the [VLAN](#) topic.

---

### PC port VLAN

Switches on VLAN for the PC port.


 You will find more information on this subject in the [VLAN](#) topic.

---

### PC port VLAN ID

Enter the PC port's VLAN ID: 1 ... 4094


The associated data packets are tagged with this ID.

 You will find more information on this subject in the [VLAN](#) topic.

---

### PC port VLAN priority

0 (lowest priority) to 7 (highest priority)

 You will find more information on this subject in the [VLAN](#) topic.

## VPN

---

### VPN

Switches on VPN for the phone.

 For more information, see [VPN](#).

## Identities

[Identities Management](#)


[Basic Settings](#)

[Options for Experts](#)


# Identities Management


---

## Displaying settings

1. Select an identity in the list.
2. Tap it or confirm with OK  to open the identity.


Settings are displayed in the individual menu options.

 **Note:** You can only display settings for set-up identities.


 For more information, see [Identities](#).

---

## Creating a new identity


1. Select an unconfigured identity (---) in the list.
2. Press OK  to confirm your selection.
3. Make settings as described in Identities.


A new identity is added to the list.


 You will find more information on this subject in the [Identities](#) topic.

---

## Deleting an identity

1. Select the identity you want to delete in the list.
2. Press 

 For more information, see [Identities](#).

 **Important:** All settings made for the selected identity are deleted without asking you to confirm. If you back up the settings for an identity to a data storage device first, you can restore them if required.




## Basic Settings

---

### Active

Press this to switch on the selected identity.

 You will find more information on this subject in the [Identities](#) topic.

---

### SIP Username

Used to identify the device to the VoIP provider or in the PBX. Identical to the user name assigned by the VoIP provider or the internal phone number registered in the PBX.

 For more information, see [Identities](#).

---

### SIP Registrar

This tells the phone where it can register itself. The information given here is the URL set by the VoIP provider on the IP address on which the registering PBX can be accessed.

 For more information, see [Identities](#).

---

### Password

Used to verify the user name. Identical to the password assigned by the VoIP provider when the identity was being created or the password entered in the PBX.

 For more information, see [Identities](#).


---

## Display Name

Freely selectable name.

The display name is displayed both in the Configuration Manager, under the Display name, and on the phone, below the status bar.

If you do not set a display name, the display on the phone contains these elements: SIP-username@SIP-registrar.

 You will find more information on this subject in the [Identities](#) topic.

---

## Authentication Username

Enter the authentication username provided by the VoIP provider.

You need the authentication username when you register with a VoIP provider. If you connect to an Auerswald PBX, you do not need to enter the authentication ID.

 For more information, see [Identities](#).

## Options for Experts

Registrar

SIP

NAT

Function codes

Audio

Security

Outbound-Proxy

Interface

# Registrar

---

## Registrar active

Switches the registrar on.

 For more information, see [Identities](#).

---

## Realm

Name space that contains all the entries within one directory, specified by the VoIP provider/PBX operator.


Ideally, the **Realm** should be identical to the VoIP provider **SIP-Registrar** or PBX address.


 For more information, see [Identities](#).

---

## Registrar port

1 ... 65535

 **Caution:** Each time a port is opened on the router, this creates a potential security risk. It is essential you put additional protective measures in place.

 For more information, see [Identities](#).

---


## Time lapse registration (min.)

1 ... 60 minutes

## Registrar

The registration time is the number of minutes that must elapse before the telephone reregisters itself with the VoIP provider.

The value you enter here should be a compromise between a short timespan (which generates traffic with the provider) and a long de-registration period.


 For more information, see [Identities](#).

# SIP

---

## Session timer

Switches on the check after a connection for a call that is still in existence.

 **Note:** When the SIP session timer is switched on, this may result in the call being interrupted more frequently after the specified interval, if a VoIP provider has not implemented session renewal properly. In this case, set a different session timeout or disabled the session timer.

 For more information, see [SIP](#).

---

## Session timeout (in min.)

2 ... 255 minutes, default: 15 minutes

Specifies the number of minutes after which the SIP session timer is to check a call's connection.

 For more information, see [SIP](#).

---

## Protocol type


### UDP

(the User Datagram Protocol) is used to send data packets over connectionless non-secure communication lines.

### TCP

(Transmission Control Protocol) segments data into packets up to a specified size and sends these individual data packets to the recipient address until receipt has been confirmed.

 For more information, see [SIP](#).


 **Important:** If encryption is enabled by SIPS, the TCP transport protocol is used. Manual settings are overwritten.


---

## Local SIP port

0 ... 65535

Sets the outgoing port for SIP messages.

 **Note:** Enter "0" to generate a random port.

 **Important:** If you define more than one identity, the SIP port for each identity must be different. If you enter "0", different ports are assigned automatically.

 For more information, see [SIP](#).

# NAT

---

## SIP NAT traversal

Requirements:


- configured DNS server
- When the **activated** option is selected: **Registrar** is enabled for the telephone

### Active

NAT traversal is performed by the telephone. The SIP request also contains an "rport" part in which the IP addresses used here (local, public) are transported.

### Active with STUN

NAT traversal is performed by the telephone. To do this, you must also specify a STUN server.

 **Caution:** Each time a port is opened on the NAT router, this creates a potential security risk. Implement appropriate security measures.

### Inactive

NAT traversal is not performed by the telephone. The router which connects the local area network with the Internet should be a properly functioning SIP-aware router which performs NAT traversal.

 For more information, see [Identities](#).

---

## RTP NAT traversal


Requirement:




- configured DNS server

### Active with STUN


NAT traversal is performed by the telephone. To do this, you must also specify a STUN server.

 **Caution:** Each time a port is opened on the NAT router, this creates a potential security risk. Implement appropriate security measures.

 **Note:** if there are problems with half-open (dropped) call connections, a STUN server should be used (**Active with STUN**).

### Inactive

NAT traversal is not performed by the telephone. The router which connects the local area network with the Internet should be a properly functioning SIP-aware router which performs NAT traversal.

 For more information, see [Identities](#).

---

## STUN server URL

Requirement:

- configured DNS server


**Note:** The STUN server is used if **Active with STUN** has been selected.


 For more information, see [Identities](#).


---

## STUN server port

1 ... 65535

 **Note:** If you encounter problems with half-open (dropped) call connections, enabling the RTP port might help.

 **Important:** Every time port forwarding is performed, there is a security risk. For this reason, we recommend you use port forwarding as little as possible.

 For more information, see [Identities](#).

---

### Time lapse registration (min.)

1 ... 60 minutes

The registration time is the number of minutes that must elapse before the telephone reregisters itself with the VoIP provider.


The value you enter here should be a compromise between a short timespan (which generates traffic with the provider) and a long de-registration period.

 For more information, see [Identities](#).


---

### NAT Keep-Alive Interval (sec.)

After the time specified here has passed, NAT Keep-Alive packets are sent to the firewall to maintain the NAT mapping.

 **Note:** Some providers lock accounts if the NAT Keep-Alive Interval is too short. As a rule, this is reported with error message 503 during SIP registration. If this problem occurs, we recommend you reduce the value (e.g. to 180).

NAT

 For more information, see [Identities](#).

## Function codes

---

### Pick-up code


This is required to perform a call pick-up. Character string stored on the PBX/at the provider, e.g. **##06** for Auerswald PBXs.

 For more information, see [Pick-Up](#).

---

### Voicemail number

Enter the voicemail number assigned by the VoIP provider or the voicemail number entered in the PBX.

 You will find more information on this subject in the [Voicemail number](#) topic.

---

### CLIR type (Number presentation suppression)

Area in the From header in which the VoIP provider expects to receive number presentation suppression. Selection as set in the PBX/at the provider.

#### No display text

A blank display text is sent in the From header.


#### Anonymous

The sent display text in the From header is "anonymous".

#### User anonymous

Both the display text and the User name section in the From header contain "anonymous".

## Function codes

 For more information, see [Anonymous Call](#).

## Audio

---

### Framesize

Sets the RTP packet size (msec Audio/RTP package).

---

### Jitter buffer size


Specifies how many RTP packets can be cached to buffer or compensate for disruptions. (40 ... 160 msec)

 For more information, see [Identities](#).

---

### Music on hold

If a connection or call is on hold, the "music on hold" is played.

 You will find more information on this subject in the [Music on hold](#) topic.

---


### Codecs

Press this to display the codecs in the sequence in which they are used.


If you select a codec, you can replace it with a different codec, or none at all.

Best available quality: G.711, G.722

Best possible compression: G.726, G.729, iLBC

 **Note:** Codecs that are assigned multiple times are automatically removed from the list and replaced with ---.

## Audio

 You will find more information on this subject in the [Identities](#) topic.

# Security

---

## SIPS active


Enables the encrypted transfer of signalling data.


 For more information, see [SIPS](#), [Certificates](#) and [Identities](#).

---

## Peer-to-peer TLS

Forces the encryption of SIP messages over the entire route to the destination.

 **Note:** The call is not made if TLS is not available on the entire connection.

 For more information, see [Identities](#).

---

## SRTP

Transport protocol for encrypted connections.

### Mandatory

This setting forces voice encryption to be on. If the voice partner (VoIP provider, PBX, external VoIP subscriber) does not support SRTP, the connection is not established.


### Preferred

Switches on negotiation for the encryption of call data via SRTP. When a call is made, the call partner will be asked if encryption is possible. If selected, voice data is transmitted in encrypted form. If not selected, it is not encrypted.



## Disabled


This setting forces voice encryption to be off. If the voice partner (VoIP provider, PBX, external VoIP subscriber) does not support encryption, the connection is not established.

 You will find more information on this subject in the [SRTT](#) and [Identities](#) topic.

---

## Certificate


If the **SIPS** function is activated, the system checks whether the certificate belongs to the domain/IP.

 For more information, see [Identities](#) and [Certificates](#).

---

## Check hostname active

If this function is activated, the system checks whether the certificate belongs to the domain/IP.

 For more information, see [Identities](#) and [Certificates](#).

# Outbound-Proxy

---

## Mode

### Inactive

Deactivate this function if


- the registrar can be accessed without outbound proxy
- no outbound proxy is available

### Automatically

The PBX automatically determines an outbound proxy.

### Manually

The outbound proxy is a fixed default setting. Enter this data as an IP address or a URL.


 For more information, see [Outbound proxy](#).

---

## URL

Server address for the outbound proxy.

 **Note:** The **URL** must be added if **Manually** mode is selected.


 For more information, see [Outbound proxy](#).

---

## Port

Port for the outbound proxy.


 **Note:** The **Port** must be added if **Manually** mode is selected.

 For more information, see [Outbound proxy](#).

---

### Alternative URL


Alternative server address for the outbound proxy.

 For more information, see [Outbound proxy](#).

---

### Alternative port

Alternative port for the outbound proxy.

 For more information, see [Outbound proxy](#).

## Interface

---

### Network

Activates the network (LAN/WLAN) as an interface for the device.

 For more information, see [Network](#).

---

### VPN

Activates the VPN as an interface for the device.

 For more information, see [VPN](#).

# Sound

---

## Default ringtone

Lists the available ringtones.

Pause on the selected ringtone to play it.

If you confirm a selected ringtone, this enables it.

 For more information, see [Sounds](#).

---

## Default notification

Lists the sounds that are available for signalling a new notification.

Pause on the selected notification ringtone to play it.

Confirm to enable a selected notification ringtone.

 For more information, see [Sounds](#).

---

## Default alarm

Lists the sounds that are available for signalling an alarm.

Pause on the selected alarm ringtone to play it.

Confirm to enable a selected alarm ringtone.


 For more information, see [Sounds](#).

## Language and location

---

### Phone language

Changes the language used on the phone user interface.


 For more information, see [Language and Location](#).

---

### Location

Sets the phone's actual or required location.


Audio frequencies (pitches, pulse/pause characters and/or ringing tones), and also the time and time format, are different for each selected location.

 For more information, see [Language and location](#).

---

### Configuration manager language

Changes the language used in the Configuration Manager.

 For more information, see [Language and Location](#).

## Display and LED


---

### Idle state

After the selected time, the phone is automatically returned to the idle state.

- **Not automatically**


The phone is not automatically returned to the idle state.

 For more information, see [Idle state](#).

---

### Brightness

Sets the brightness.

 For more information, see [Display and LED](#).

---

### Seen missed calls

Sets the message key LED's reaction to seen missed calls.

- **LED lights up**

The message key LED shines and a text message is displayed in the Notifications menu.

- **LED is flashing**


The message key LED flashes and a text message is displayed in the Notifications menu.

- **No LED**

The message key LED does not flash and a text message is displayed in the Notifications menu.

- **Disabled**

The message key LED does not flash and no text message is displayed in the Notifications menu.

 For more information, see [Display and LED](#).

---

## Heard voice messages

Sets the message key LED's reaction to heard voice messages.

- **LED lights up**

The message key LED shines and a text message is displayed in the Notifications menu.

- **LED is flashing**


The message key LED flashes and a text message is displayed in the Notifications menu.

- **No LED**

The message key LED does not flash and a text message is displayed in the Notifications menu.

- **Disabled**

The message key LED does not flash and no text message is displayed in the Notifications menu.

 For more information, see [Display and LED](#).



## Telephony

---

### Call waiting

Indicates an incoming call during a call.


 For more information, see [Call Waiting](#).

---

### Call waiting tone

This acoustic signal indicates that there is an incoming call during a call.

If this option is disabled, incoming calls are only signalled by a change in the display content during a call.

 You will find more information on this subject in the [Call waiting](#) topic.

---

### Do not disturb

Rejects calls to the phone.

 For more information, see [Do not Disturb](#).

---

### Call forwarding

#### Immediately

Forwards an incoming call to the set forwarding destination immediately.

#### Destination immediately

Enter the destination number here.

#### On busy

Forwards an incoming call to the set forwarding destination if the connection is busy.

### **Destination on busy**

Enter the destination number here.

### **By time**

Forwards incoming calls to the set forwarding destination if these calls have not been taken within a set time.

### **Destination by time**

Enter the destination number here.

### **Waiting time before CF**


Sets the number of the seconds that the phone waits before activating call forwarding.

 For more information, see [Call forwarding](#).

---

## **Anonymous call**


Stops your phone number from being displayed to the person you are calling

 For more information, see [Anonymous Call](#).

---

## **Reverse Search**


For incoming and outbound calls, this option displays the names of saved contacts that are suitable for the phone number.

 You will find more information on this subject in the [Reverse Search](#) topic.

---

## Automatic start of call

The call starts automatically after the predefined time.

 For more information, see [Automatic Start of Call](#).

## Function keys



**i Note:** Select one of the following options to add new touch function keys:

- **Settings > Function keys > Add entry**
- In the touch function keys area on the home screen > **+ Add entry**.  
Also see [Display overview](#)

### Choose the key you want to modify, or add a new key.

The following options are available:

- Adding a new touch function key:  
**Add entry**
- Adding a new function key on the key extension module:  
Press a key that is not assigned
- Editing existing touch function key/function keys:  
Press a key that has already had a function assigned to it


**i Note:** Touch function keys are identified by a sequential number. You cannot add new touch function keys between touch function keys that are identified by a sequential number. Places where you can add a new touch function key are identified by . Places where you cannot add a new touch function key are identified by . The current position is marked with a horizontal line.

---

## Choosing a function

In the list, select the function that you want to assign to the previously pressed key:

- **Speed dial**
- **Identity**
- **Call waiting**
- **Do not disturb**
- **Anonymous call**
- **Call forwarding on busy**
- **Call forwarding on no reply**
- **Call forwarding immediately**
- **VPN**
- **XML Minibrowser**

 **Note:** Configure the **Call waiting**, **Do not disturb**, **Anonymous call** and **Call Forwarding** functions on the phone: select **Settings > Telephony** or in the Configuration Manager: select **Telephony**.

- **Key label**

Displayed beside each function key on the screen.

- **Subscriber number/URI**

**Speed dial:** Enter a phone number or a URI, such as 198@192.168.XX.YY or 198@company.com, here

**XML Minibrowser:** Enter the web server address here

- **Identity**

**Speed dial:** Identity used to trigger the call

**Identity:** Identity used to trigger subsequent calls

Set the required parameter and confirm the setting each time by pressing the **OK** key.

**i Notes:** In the display, the key label is shown next to the relevant function key. To make it easier to enter numbers, press and hold down the appropriate key on the keypad. To end parameter entry, press the **OK** soft key.

**i Note:** You can use provisioning to extend the functions available on the keys, such as the **Call forwarding for external calls** PBX function. For more information, see the [Provisioning](#) topic and the [Auerswald DokuWiki](#).

---

## Changing a key assignment

To do this, select a key to which a function has already been assigned.

You can choose one of these actions:

- **Edit** (e.g. change key label)
- **Clear** (cancels the current key assignment without prompting you to confirm)
- **Overwrite** (e.g. create a new function including key label)

To use these options, follow the procedure described in "Selecting a function".

---

## Selecting a Key Level (only extension module)

Change between key levels by pressing the **control rocker**.

## Function keys

On the key extension module, you can see the current key level on the horizontal scroll bar on the top and bottom edge of the display.


The display content changes according to the selected key level. The function key names are also displayed.

If no function keys have functions assigned to them, the display does not change.

## Firmware Update

### Start update


Starts the firmware update.

 For more information, see [Firmware Update](#).

---

### Check for updates


If selected, the phone automatically checks for current updates.

 For more information, see [Firmware Update](#).

---

### Automatically install updates


If selected, available updates are installed automatically.

 For more information, see [Firmware Update](#).

---

### Update server URL

In the factory settings: `https://update.auerswald.de`

 You will find more information on this subject in the [Firmware Update](#) topic.



# Provisioning

---

## Start provisioning

Starts manual provisioning.

---

## Automatic provisioning

Automatic provisioning is performed according to the schedule and each time the phone is switched on.

 For more information, see [Provisioning](#).

---

## Provisioning with DHCP data

The phone obtains the provisioning server's URL from a DHCP server. Additional data for controlling provisioning can also be transferred along with the URL.

 For more information, see [Provisioning](#).

---

## Redirect server

The phone obtains the provisioning server's URL from the redirect server.

 For more information, see [Provisioning](#).

---

## Provisioning from PBX search


Automatic provisioning of the phone is performed via the PBX.

 For more information, see [Provisioning](#).

---

## Provisioning server URL

This URL is required if it is not obtained via DHCP or a redirect server.


 You will find more information on this subject in the [Provisioning](#) topic.

## Access

---

### Web administration (https)

Activates access to the Configuration Manager.

 **Note:** You cannot call the Configuration Manager if this function is inactive.

---

### Android Debug Bridge (adb)


Enables the PC to access the phone via the software interface. You can then use ADB to execute commands on the Android system.

## Apps

---

### F-Droid

Activates the display and use of F-Droid.


 **Note:** If the function is not activated, the app is not displayed in the overview of installed apps.

 For more information, see [Apps](#).

---

### K-9 Mail

Activates the display and use of K-9 Mail.


 **Note:** If the function is not activated, the app is not displayed in the overview of installed apps.

 For more information, see [Apps](#).

---

### Firefox Klar

Activates the display and use of Firefox Klar.

 **Note:** If the function is not activated, the app is not displayed in the overview of installed apps.

 For more information, see [Apps](#).

## Date and Time

---

### NTP

The time is automatically transferred from the NTP server.

If NTP is not enabled, there is no synchronisation between the telephone and the time server. It is possible that the date and time may be displayed incorrectly.

 For more information, see [Date and Time](#).

---

### NTP server

The time server that supplies the time stamp. Use the address of a time server that is geographically close by, to achieve maximum accuracy.

Example: pool.ntp.org

 For more information, see [Date and Time](#).

---

### Time format

**12 h:** Time display in 12-hour format. In addition, the time range AM/PM is displayed.

**24 h:** Time display in 24-hour format.


 For more information, see [Date and Time](#).

---

### Time zone

Data on the phone that has a time stamp (such as call history entries, calendar entries and e-mails) is displayed with the correct time.

## Date and Time

 You will find more information on this subject in the [Date and Time](#) topic.

## Contacts/LDAP

---

### Active


Switches on the directory service request.

 For more information, see [LDAP](#).

---

### Max. Matches

Here, set the maximum number of search results that the LDAP server is to output.

 You will find more information on this subject in the [LDAP](#) topic.

---

### Sorting

Here, set the sequence in which the LDAP search results are sorted.

First name, Last name

Last name, First name

---

### Number search incoming

For incoming calls, searches for LDAP entries that match the transferred phone number.

---

### Number search outgoing

For outgoing calls, searches for LDAP entries that match the transferred phone number.

## About phone

---

### **Model**

Displays your device's model details.

---

### **Serial number**

Displays your device's serial number.

---

### **Keypad serial number**

Displays the serial number of the keyboard PCB installed on your device.

---

### **Build number**

Displays the build number of the software version installed on the device.

---

### **MAC address**

Displays your device's physical address on the network.

---

### **Android version**

Displays the Android version installed on your device.

---

### **Kernel version**

Displays the kernel version in use on your device.

---

### **Update system version**

Displays the update system version in use on your device.



---

## Bootloader version


Displays the bootloader version in use on your device.

---

## Licenses

Here, you can display the following license information:

- End User License Information (EULA)
- Android Licenses
- Licenses webserver
- Licenses webclient

 For more information, see [Device Information](#).

# Glossary

[Technical terms and functions](#)

[Abbreviations](#)

## Technical terms and functions

A

B

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D

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L

M

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X

Z

A

**A**

Account

## Account

Authorisation to access a VoIP provider or a VoIP PBX. Users must identify themselves by logging in with a username and a password.

B

**B**

Browser

## **Browser**

Special software to display websites from the Internet.

c

## C

Call Deflection

Client

Codec



## **Call Deflection**

Call Deflection – refers to call forwarding during the ringing period. If Call Deflection has been activated, the called subscriber can deflect the call on a case-to-case basis while the telephone is still ringing.

## **Client**

Piece of computer hardware or software that accesses a service made available by a server.

## Codec

Method to encode (digitise) analogue voice data for transmission and decode it again to convert it into back into voice. There are various codecs that feature different voice data compression rates thereby require different band widths for data transmission. The equality of VoIP calls depends on the codec used.

D

## D

DHCP

DNS

Domain

Downdate

DTMF

## DHCP

Dynamic Host Configuration Protocol – client/server protocol for dynamically allocating IP addresses and network parameters. The IP addresses are requested by the DHCP clients (PCs in the network) on the DHCP server (for example, a router or the Internet service provider). The DHCP server takes these IP addresses from a set address pool and sends them to the client. In addition, the client receives additional information (for example, the addresses for the standard gateway and DNS server).

The IP address is temporarily allocated for a certain amount of time. If the address is no longer required by the client, the server has access to it again and can allocate it to another client.

## DNS

Domain Name Service – needed to translate Internet addresses. The name of a computer on the Internet (for example, **www.auerswald.de**) is assigned to the corresponding IP address. This service is provided by DNS servers at the various Internet service providers or by upper domain servers.

## Domain

Globally unique name of a website, consisting of third-level domain (e. g. the service name “www“), second-level domain (e. b. “auerswald“) and top-level domain (e. g. the country code “uk“). The domain is part of the URL.

## **Downdate**

Reset of the telephone to the previous firmware version.



## **DTMF**

Dual Tone Multi Frequency dialling – dialling method that transmits the dialled number to the exchange as two superimposed sinusoidal signals.

E

## **E**

End Device

Ethernet

## End Device

Device that can be operated on a communication network or on a PBX, e. g. telephone, fax machine, answering machine, ISDN PC controller, etc.

## **Ethernet**

Network system with a speed of 10/100/1000 Mbit/s developed by the companies INTEL, DEC and Xerox.

F

## **F**

Firewall

Firmware

Frame size

## **Firewall**

Network security component that uses a set of security rules to protect a computer network or an individual computer against unauthorised access to or from the network.

## **Firmware**

Operating software on the telephone or PBX that is stored in the device itself. The device cannot function without firmware.

Frame size

## **Frame size**

Sets the RTP packet size (msec Audio/RTP package).



G

**G**

Gateway

## **Gateway**

PC or router that acts as an intermediary between two networks. The Internet service provider is the gateway for direct Internet dial-up connections. If you use a router, this is the gateway in a local network.

H

**H**

Host

HTTPS

## Host

Component of a data processing system that manages larger application programs and data volumes and makes them available to lower-order servers and clients.

## **HTTPS**

Hypertext Transfer Protocol Secure – communication protocol for tap-proof data transfer with encryption within the World Wide Web.

I

I

IMAP

IP Address

IPsec

IPv4

IPv6

## **IMAP**

Internet Message Access Protocol – protocol to download e-mails from a server, with extended functions as compared to POP3 (e-mails are stored on a server, not on the client PC, so that they cannot be lost due to a failure of the client PC).

## **IP Address**

Unique numerical address within a TCP/IP network that is assigned to one device and ensures that data packages reach the correct recipient.



## **IPsec**

The telephone uses the IPsec protocol to transport IP packages cryptographically secured via public networks.

## IPv4

IPv4 addresses consist of four numbers between 0 and 255 that are separated by a full stop, for example, 192.168.0.14. The network addresses are divided up into different classes (Class A to C) depending on how many computers can be located in a network.

Certain ranges are reserved for operating local networks:

- Class A: 10.x.x.x (for networks with up to 16.5 million PCs)
- Class B: 172.16.x.x to 172.31.x.x (for networks with up to 65534 PCs)
- Class C: 192.168.0.x to 192.168.255.x (for networks with up to 254 PCs)

These addresses have no validity on the Internet. This means that data packets with this kind of sender or recipient address cannot be sent over the Internet. However, they can be used in local networks without restriction. The benefit of this is that if data from a local network configured in this way comes in contact with the Internet, none of the data on the computers in the local network can leak out or be accessed externally.

## IPv6

IPv6 addresses consist of eight blocks, each containing four numbers or letters, and each separated by a colon e.g. 3001:00FF:ABC0:0EAC:0001:0000:0000:000F or, in short form, 3001:FF:ABC0:EAC:1::F.

Thanks to the longer address format, IPv6 offers a greater number of possible IP addresses than the Internet Protocol Version 4 (IPv4).

J

**J**

Jitter Buffer

## **Jitter Buffer**

Buffers RTP packages, to compensate irregular transfer rates of the Internet.

A high jitter buffer reduces short interruptions during the call. In return the delay of the RTP packages increases.

L

**L**

LDAP

LED

## **LDAP**

Lightweight Directory Access Protocol – protocol that enables you to query the data in a directory service (a hierarchical database) over the network.

LED

## **LED**

Light emitting diode - electronic device similar to a lamp and used for displays (also multi-coloured).



M

**M**

MAC

## MAC

Media Access Control address – specific, unique hardware address specified for each individual single network card used in the whole world. This means that the network card is unique and can be controlled and detected by the network without any problems. The IP addresses on the TCP/IP network are always mapped to the respective MAC address.

N

## **N**

NAT

NAT Traversal

NTP

## **NAT**

Network Address Translation – permits the mapping of a specific IP address used within a network to another IP address used by another network. This function is e. g. performed by a router which connects a local area network to the Internet.

## **NAT Traversal**

Method to establish and hold communication connections that allows IPsec-encrypted data packets to pass through NAT transition points.

## **NTP**

Network Time Protocol – protocol that synchronises the time on a computer or on other devices in the network with other computers or with an external clock via the Internet. An NTP server is selected to perform the time synchronisation. The time provided by the NTP server is synchronised as exactly as possible to Coordinated Universal Time (UTC).

If a local NTP server is available in a local network, it can be selected, or a public NTP server from a public list on the Internet can be used.

o

**O**

Open-Source License

## **Open-Source License**

Software license acknowledged by the Open Source Initiative (OSI). Open-source licenses are the basis of free-of-charge applications whose programming code may be modified without restrictions.



P

## **P**

PoE

POP3

Port

Provisioning

## PoE

Power over Ethernet (PoE) is a method by which small devices in a network, for example, VoIP telephones, receive both power and data via an Ethernet cable. Benefit: Fewer obtrusive power cables are required.

PoE is described in the IEEE 802.3af standard.

## **POP3**

Post Office Protocol, version 3 – ASCII protocol to download e-mails from a server.

## Port

A single PC can simultaneously establish multiple connections and provide multiple services for other PCs. Ports are used to differentiate these connections from parallel connections. Due to a common agreement, PCs usually provide their services on ports 1 to 1023. Outgoing connections are usually established starting at port 1024. Most services that use the standard port numbers (for example, web browsers use port 80).

## Provisioning

Automated configuration of one or more telephone(s) from a provisioning server.

R

## **R**

Redirect Server

Registrar

Router

RTP

Rubber cover

## **Redirect Server**

Supports the setup of a connection by identifying alternative addresses of a recipient in the database of the registrar and returning them to the originator of the request. The originator can then send a new request to the alternative address.

## Registrar

A domain name registrar is an organisation or company that registers Internet domains.

A SIP registrar tells the phone where it can register itself. The information given here is the URL set by the VoIP provider on the IP address on which the registering PBX can be accessed.



## Router

Routers connect two separate networks. This means, for example, that you can connect the local network to another LAN or a WAN. When a PC wants to send a data packet, this packet must travel over a router. The router uses the IP address to detect the network it must send the data to. In addition to connecting to networks, routers can also execute certain control functions, such as maintaining a simple firewall. In a home network, routers are usually used to connect the local network to the Internet and to enable simultaneous Internet access for multiple users.

## **RTP**

Transport Protocol – a transport protocol that guarantees complete data transport in real time, especially of audio/video data, for which a packet loss of 1 to 20% is acceptable, depending on the codec in use. RTP does not guarantee the service quality of the data transfer.

## **Rubber cover**

Rubber cover which must be removed before the key extension module can be mounted.

s

## S

Server

SIP

SIP-Port

SIPS

SLAAC

SMTP-Server

STUN

Subnet mask

Switch

## **Server**

Computer or software that performs different tasks as part of a network and, for example, provides other users (clients) of this network with specific information, data or services.

## **SIP**

Session Initiation Protocol – network protocol which provides establishing a communication session between two or more subscribers. Via SIP only communication conditions are arranged. Other protocols such as RTP are responsible for actual data transmission.

## **SIP-Port**

Port of the local system used as the communication port for the SIP transfer.

## **SIPS**

Session Initiation Protocol Secure – SIPS are SIP data encrypted using the TLS protocol. The network protocol sets up a communication session between two or more subscribers. The provider encrypts external connections to prevent listening in. The processes used to set up and shut down a connection, and signalling, are all encrypted by SIPS.



## SLAAC

Stateless Address Autoconfiguration – process for automatically and statelessly configuring IPv6 addresses on a network interface. "Stateless" means that the IPv6 address is not assigned and stored centrally. The host generates its own IPv6 address, using additional information as an aid. SLAAC is the further development of "classic" processes for IP auto configuration in IPv4. IPv6 routers have an active role, unlike those in IPv4. IPv6 offers the same convenience as operating a very simple DHCP server.

## **SMTP-Server**

Simple Mail Transfer Protocol – network protocol used for the secure transfer of e-mails between the PBX and external mail servers. The PBX needs an external SMTP server (outgoing mail server) to send system e-mails or forward voice mail messages and fax messages.

## **STUN**

Simple Transversal of UDP over NATs – used to determine the public IP address of an Internet connection. To do this, a STUN request is sent to a STUN server, which then shares its own IP address allocated by the VoIP provider with the Internet connection.

## Subnet mask

Configuring subnetworks makes it possible to connect many totally different networks located in totally different areas because each subnetwork receives its own address and can therefore be addressed by the router. A subnetwork is created when the IP address is linked with a subnet mask:

If a bit in the subnet mask is set, the corresponding bit in the IP address is considered a part of the network address. If a bit is not set in the subnet mask, the corresponding bit in the IP address is used as a part of the PC address.

The value of the subnet mask, as with IP addresses, is often given in decimal form (for example, 255.255.255.0 for IPv4 addresses).

## Switch

Active network distributor that distributes data packages to a destination defined by an IP address among the different segments of a network.

T

**T**

TCP

TLS

## TCP

Transmission Control Protocol – transport protocol that segments data into packets up to a specified size and reliably sends these individual data packets in the correct sequence to the recipient address. In this process, every data packet sent must be resent until it has been confirmed as arrived. In order to make sure this happens, a large amount of information is sent along with the actual payload data. Most Internet services are implemented with TCP, e. g. HTTP (www), SMTP/POPS (e-mail), etc.

## **TLS**

Transport Layer Security – protocol for the encryption and secure transmission of data on the Internet. TLS is often used to protect http connections, e. g. for commercial transactions (https).



U

## U

UDP

Update

Update-Server

URI

URL

## UDP

User Datagram Protocol) – protocol used to send data packets over non-secure communication lines without a connection. This means that successful transmission is dependent on the application and is therefore not always guaranteed. UDP itself does not verify whether data has been transmitted successfully. When a UDP packet is sent, the sender cannot assume that the packet will indeed arrive at the recipient. This particular protocol needs only a small amount of additional information, and results in a better data throughput rate in a well-functioning network, e. g., on a LAN. UDP is used by DNS servers, for example.

## Update

Installation of a new firmware version to integrate new features and to solve possible problems. Previous settings of the device remain unchanged.

## **Update-Server**

Server that provides up-to-date data, e. g. firmware files, provider profiles, etc., for downloading to a telephone.

## URI

Uniform Resource Identifier. Used to uniquely identify every single item in the World Wide Web, irrespective of whether it is a page with text, a video, a sound file, a moving image, a static image or a programme.

A URI usually describes:

- the mechanism used to access a resource
- the specific computer on which the resource is present
- the specific name of the resource (or the file name) on the computer

## URL

Uniform Source Locator – complete address of a resource (e. g. a website), consisting of a scheme (e. g. „http://“) and a scheme-specific part (e. g. domain „www.auerswald.de/“ and path „en/products/pbx/home-office.html...“).

v

## V

VLAN

VoIP

VoIP Account

VoIP Address

VoIP Provider

VPN

## **VLAN**

Virtual Local Area Network. This is a virtual network within a local network.

VLAN-enabled switches ensure that data packets within the subnet are not forwarded to a different VLAN, although the subnets might be connected to shared switches.

Among other things, a VLAN can be used to keep IP telephony separate from normal network traffic, at network level.



## **VoIP**

Voice over Internet – Internet telephony. An Internet connection (for example, DSL) is used for telephoning instead of an analogue or ISDN line. Digital voice data is sent as IP packets from one telephone to another. This functions the same way as the transmission of a webpage over the Internet.

The transmission quality and the reliability of Voice over IP depends to a great extent on the quality of the Internet connection used.

## VoIP Account

Account configured with a VoIP provider who provides the necessary access data required for VoIP calls. For this purpose, you need to register your name and address with a provider via their web site. Finally, one or more phone numbers accessible from the public switched network and the Internet as well as an account with a user name and password are allocated. Most of the time, it only takes a few minutes to configure the registered connection which can then be used almost immediately.

## VoIP Address

VoIP telephone number plus domain, separated by the @ character:  
<subscriber>@domain.

## **VoIP Provider**

Internet service provider offering internet telephony (VoIP, Voice over Internet Protocol).

## **VPN**

Ein VPN (Virtual Private Network) bindet entfernte oder benachbarte Netzwerke (LAN) über einen VPN-Tunnel in das eigene Netzwerk ein. Der Tunnel dient dabei als Hülle, in der die Daten eingebettet von einem zum anderen Netzwerk transportiert werden.

w

**W**

Dial Preparation

## **Dial Preparation**

Dialling of a number before a call is initiated by lifting the receiver.

x

**X**

XML



## XML

Extensible Markup Language – a markup language used to display hierarchically structured data, in a text file.

XML data can be opened and edited in an editor. Computers can also read and write XML format. XML consists of tags which are enclosed by pointed brackets: "<" ">". Unlike XML, HTML has only one fixed set of tags, such as, for example <h1>, or <li>. You can define your own custom tags in XML. The standard only defines what a tag must look like, not what it means. Tags can be nested, enabling a hierarchy to be created.

A Document Type Definition (DTD) describes the structure and grammar used in documents. It is an XML system component and is enabled by default.

z

**Z**

Certificate

## **Certificate**

Digital key issued by a Certification Authority (CA) to ensure the authentication and secure transmission of e-mails, web sites, etc.

## Abbreviations

AM		Answering machine
ARA	Auerswald Remote Access	
CLIR	Calling Line Identification Restriction	Phone number is not displayed if that is appropriate
CTI	Computer Telephony Integration	
<a href="#">DHCP</a>	Dynamic Host Configuration Protocol	
<a href="#">DNS</a>	Domain Name Service	
DSL	Digital Subscriber Line	
<a href="#">DTMF</a>	Dual Tone Multi Frequency	
ESMTP	Extended Simple Mail Transfer Protocol	
HTML	Hypertext Markup Language	
HTTP	Hypertext Transfer Protocol	
<a href="#">IMAP</a>	Internet Message Access Protocol	
IP	Internet Protocol	
<a href="#">IPsec</a>	Internet Protocol Security	
<a href="#">IPv4</a>	Internet Protocol Version 4	
<a href="#">IPv6</a>	Internet Protocol Version 6	

## Abbreviations

ISDN	Integrated Services Digital Network
LAN	Local Area Network
<a href="#">LDAP</a>	Lightweight Directory Access Protocol for easy access to directory server
<a href="#">LED</a>	Light-emitting diode
<a href="#">MAC</a>	Media Access Control
<a href="#">NAT</a>	Network Address Translation
<a href="#">NTP</a>	Network Time Protocol
PBX	Private Branch Exchange      Private PBX
<a href="#">PoE</a>	Power over Ethernet
<a href="#">POP3</a>	Post Office Protocol, Version 3
<a href="#">RTP</a>	Real-Time Transport Protocol
<a href="#">SIP</a>	Session Initiation Protocol
<a href="#">SIPS</a>	Session Initiation Protocol Secure
<a href="#">SLAAC</a>	Stateless Address Autoconfiguration
SMTP	Simple Mail Transfer Protocol
S RTP	Secure Real-Time Transport Protocol

## Abbreviations

SSL	Secure Sockets Layer
<a href="#">STUN</a>	Simple Transversal of UDP over NATs
<a href="#">TCP</a>	Transmission Control Protocol
TLS	Transport Layer Security
<a href="#">UDP</a>	User Datagram Protocol
<a href="#">URI</a>	Uniform Resource Identifier
<a href="#">URL</a>	Uniform Resource Locator
USB	Universal Serial Bus
<a href="#">VLAN</a>	Virtual Local Area Network
VMB	Voice Mailbox
VMF	Voice Mail and Fax
<a href="#">VoIP</a>	Voice over Internet Protocol
<a href="#">VPN</a>	Virtual Private Network
<a href="#">XML</a>	Extensible Markup Language