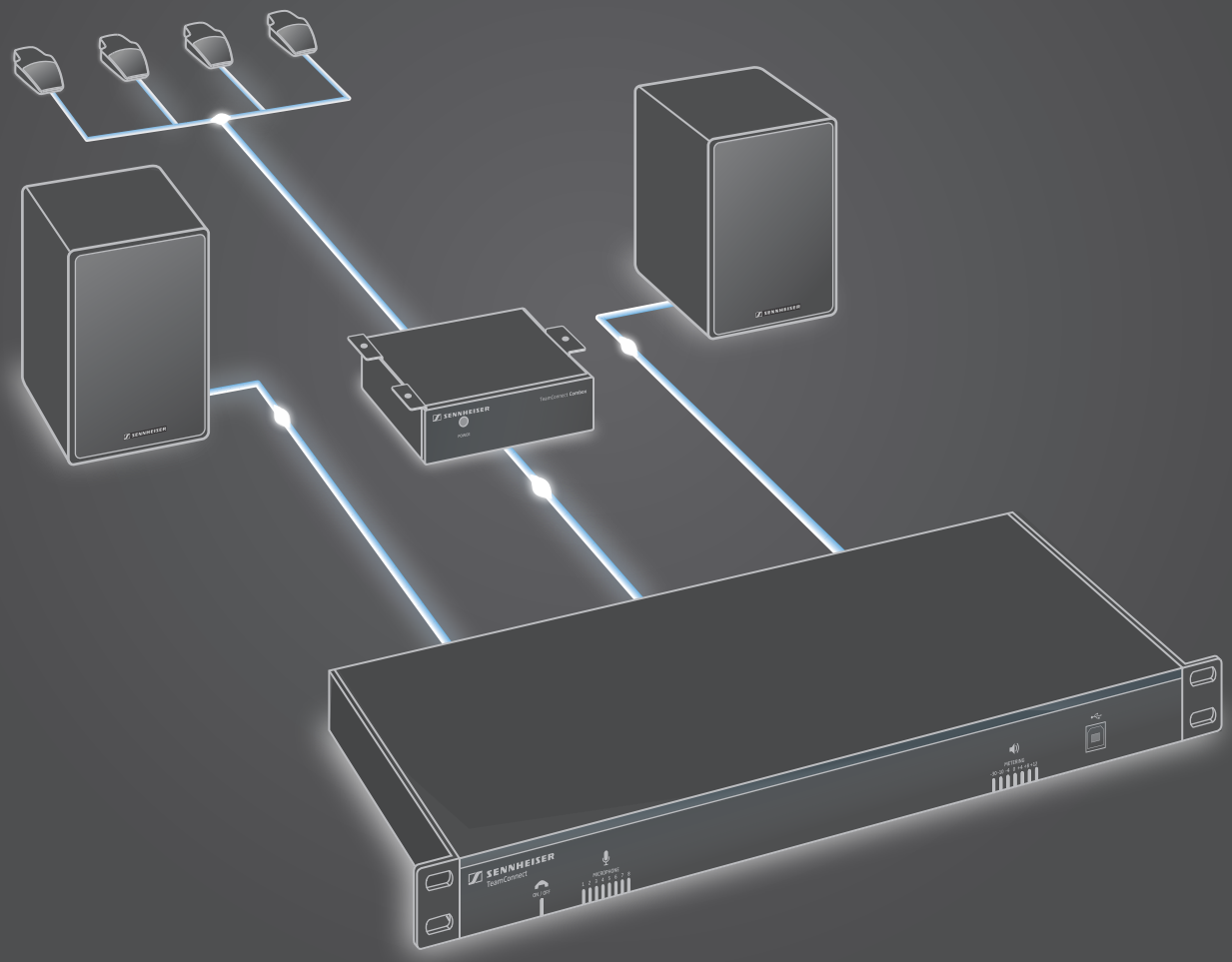
TeamConnect

Network and IT configuration



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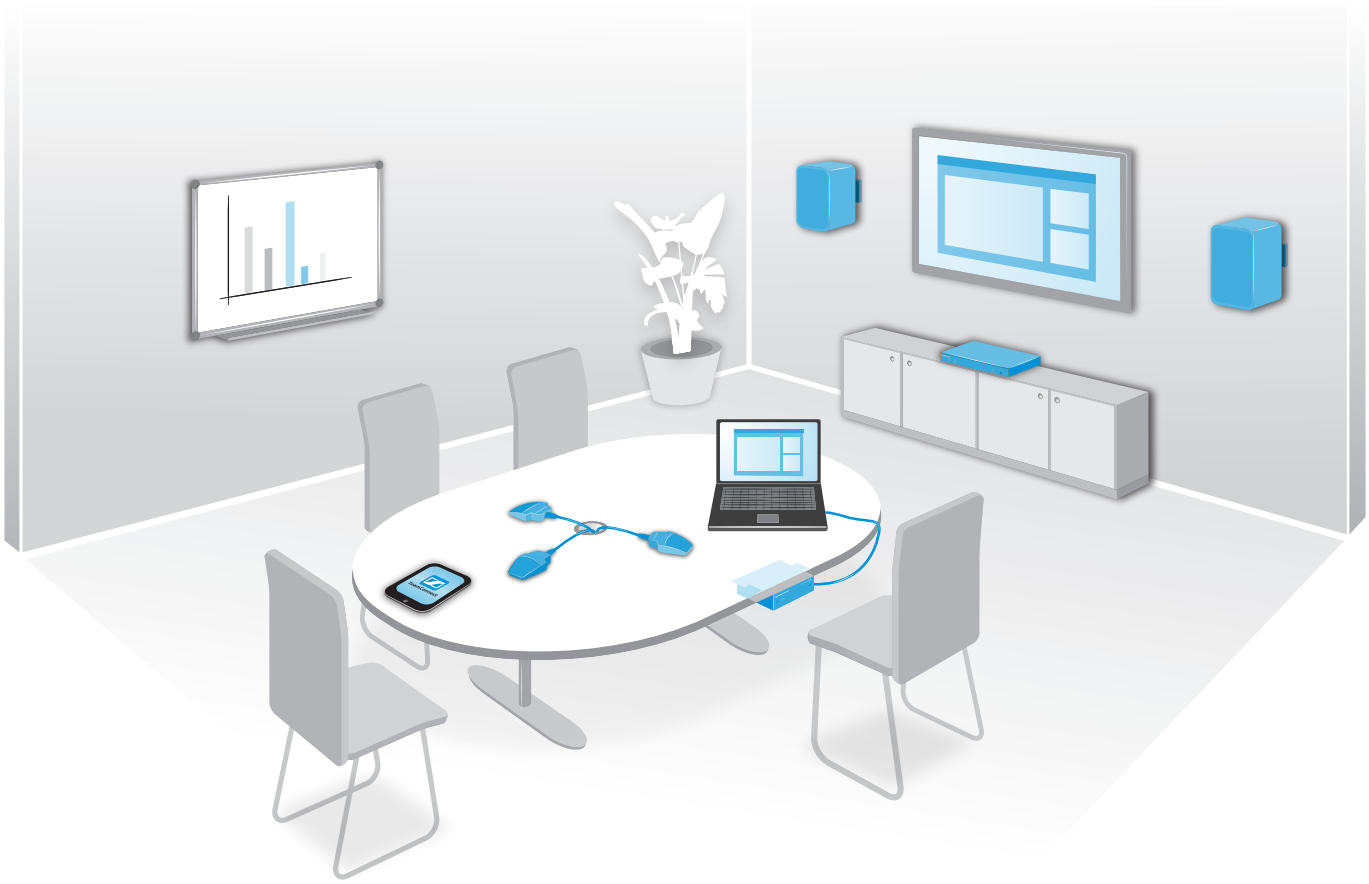
Introduction

This document is an addition to the **TeamConnect instruction manual**. The instruction manual is available for download on the TeamConnect product page at **www.sennheiser.com** and provides detailed information on how to set up, connect and configure the complete TeamConnect system.

This network and IT configuration document includes additional technical information which is required to set up and configure the network availability of the TeamConnect system in your corporate IT infrastructure.



Configuration and connection possibilities

Connecting a computer for configuring the system

For configuring the SL TeamConnect CU1 you need a computer with the Configuration Manager software installed. Please note that you need administrator rights for installing and using the Configuration Manager software.

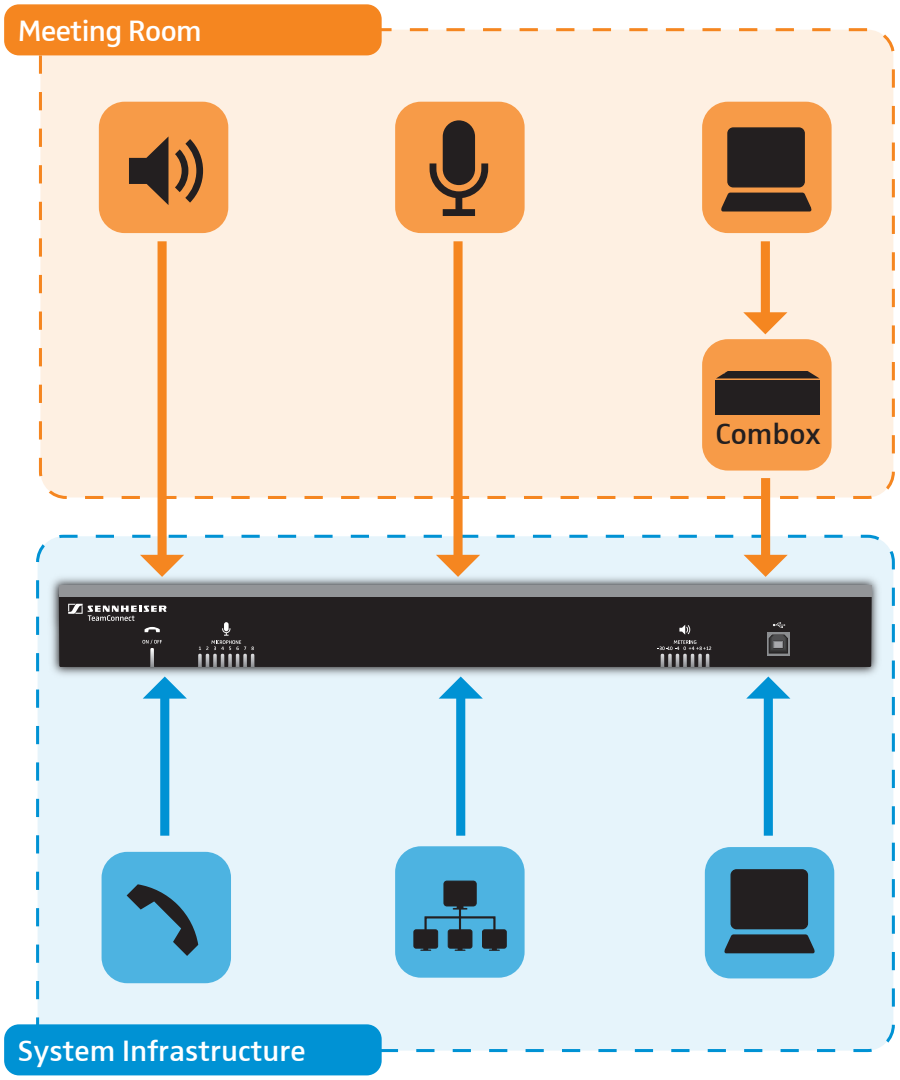
There are three possibilities to connect the computer to the SL TeamConnect CU1:

- via the USB port at the front of the SL TeamConnect CU1
- via the RS-232 port at the back of the SL TeamConnect CU1
- via an Ethernet connection

For the initial configuration of an SL TeamConnect CU1 we recommend connecting the computer directly to the SL TeamConnect CU1 via the USB port at the front of the SL TeamConnect CU1 using the supplied USB cable.

System configuration

The following illustration provides a schematic overview of the components and connections of the TeamConnect system. The components highlighted in orange must be accessible for the user in the meeting room. The components highlighted in blue form the system infrastructure.



Component	Explanation
	Telephone connection: The SL TeamConnect CU1 must be connected to an analog telephone network or system.
	Network connection: The SL TeamConnect CU1 must be connected to your corporate network infrastructure. Information about performing the network configuration is contained in this document and in the TeamConnect instruction manual.
	Admin computer: The TeamConnect system is configured on a computer with admin rights which is connected to the SL TeamConnect CU1 via USB, Ethernet or RS-232.

Component	Explanation
	Loudspeakers: The speakers need to be installed in the meeting room. For further information refer to the instruction manuals of the TeamConnect system and the Sennheiser SL Loudspeaker 52 A.
	Microphones: The microphones need to be installed in the meeting room. For further information refer to the instruction manuals of the TeamConnect system and the Sennheiser SpeechLine IS Microphones series.
	TeamConnect Combox: The SL TeamConnect CB1 needs to be installed in the meeting room. It can be used by the conference participants to connect their computers or mobile devices. For further information on the TeamConnect Combox refer to the instruction manual of the TeamConnect system.
	User computer: This computer can be any computer of the conference participants in the meeting room. It is connected to the SL TeamConnect CB1 and cannot be used for configuring the system.

Network information

This chapter gives an overview of the main IT features and functionalities of the TeamConnect system. It also indicates the default settings of these features and functionalities.

Core network settings

Setting	Default	Remarks
IPv4 configuration	• DHCP enabled	• network settings can be configured manually • IPv6 is not supported
Device name settings	• NetBIOS enabled • DNS client disabled	• default host name = TEAMCONNECT-XY • XY will be the last two characters of the device's physical network address (MAC address) • access to DNS server must be allowed
NTP client	• disabled	
Security	• IP filters for network access not configured	• up to 4 IP filters can be defined • 802.1X is not provided internally
Administrator account	• user name: Admin • password: Sennheiser	• not needed for serial/USB connections

Ports and protocols

Port	Direction	Protocol	Description
6972	Inbound/outbound	UDP	• used for TeamConnect device detection within the network segment • responds to UDP broadcasts sent by iOS dialer and Configuration Manager software
23	Inbound	TCP/IP	Telnet-based control protocol used by the Configuration Manager software, the iOS App and third party devices, e.g. AMX, Crestron, etc. (the Media Control Protocol for media control systems is available on the TeamConnect product page at www.sennheiser.com)
80	Inbound	TCP/IP	HTTP-based control protocol (used by the browser-based dialer application)

Configuring the SL TeamConnect CU1

This chapter describes how the IT relevant settings of the SL TeamConnect CU1 are configured in the Configuration Manager software.

For further information on connecting cables to the SL TeamConnect CU1 refer to the TeamConnect instruction manual on the TeamConnect product page at www.sennheiser.com.

To adjust the IT relevant configuration of the SL TeamConnect CU1:

- Install the Configuration Manager software on your computer.
- Connect your computer to the SL TeamConnect CU1.
- Start the Configuration Manager software.

  The **Connections** list on the left of the screen displays all available SL TeamConnect CU1 devices. The icons indicate the type of connection:

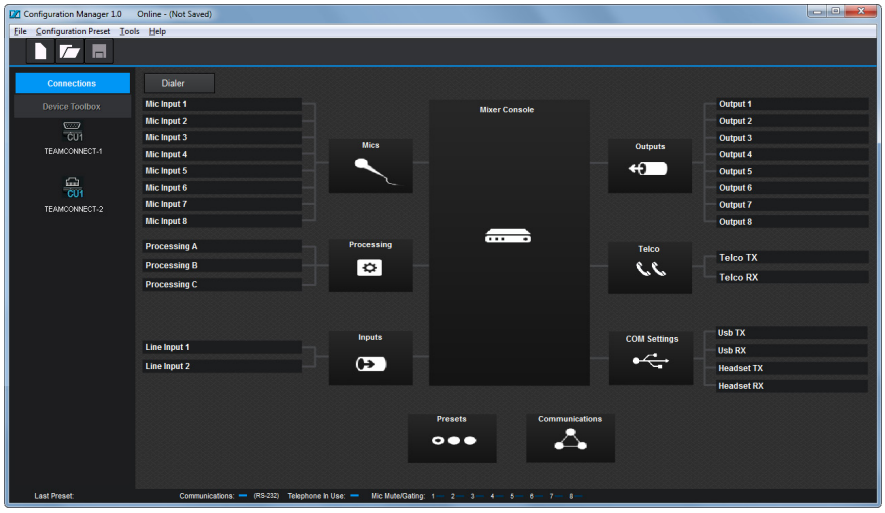
USB

RS-232

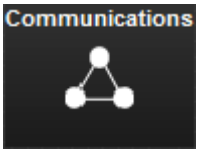
Ethernet

- Click on the icon of the desired SL TeamConnect CU1.

  The connection to the SL TeamConnect CU1 is established and the configuration screen of the device opens.



  The IT relevant settings are adjusted in the **Communications** configuration menu.



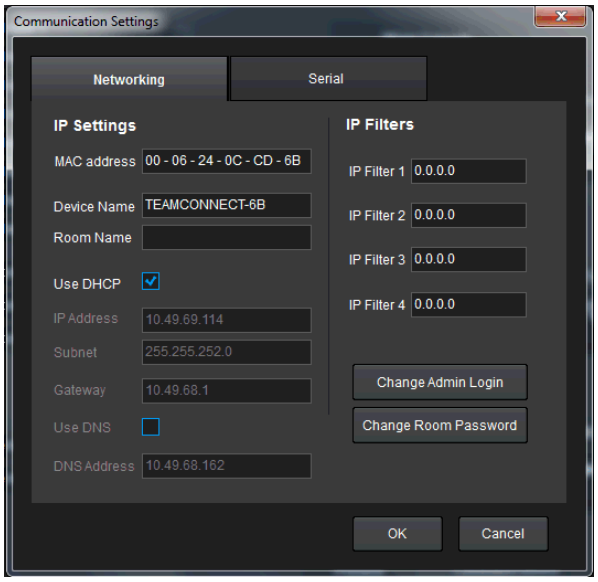
To open the **Communications** configuration menu:

- Click on the **Communications** icon in the configuration screen.

  The **Communication Settings** configuration window opens.

  The **Communication Settings** configuration window has two tabs where you can adjust the following settings.

Networking tab

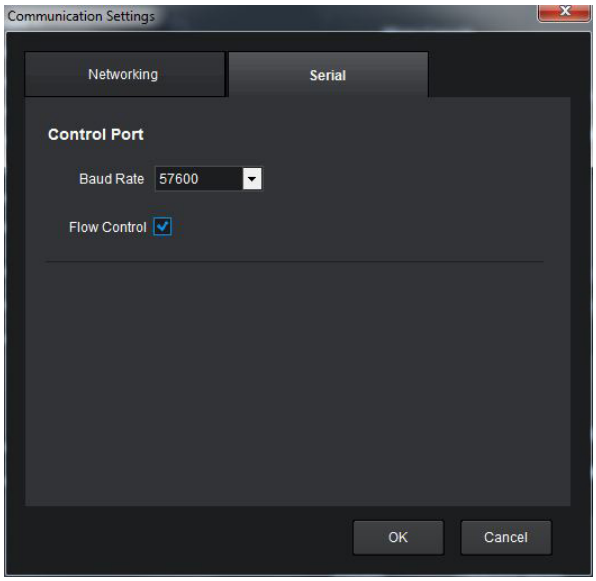


Option	Setting
MAC address	Indicates the MAC address of the SL TeamConnect CU1
Device Name	Defines the host name of the respective SL TeamConnect CU1 device in the network. The device name is also used to access the browser-based dialer (see page 11) and for manual connection in the iOS App (see page 12). Example: • Device Name: **TEAMCONNECT-123** • Address of browser-based dialer: **http://TEAMCONNECT-123** Character restrictions: • allowed characters: **A-Z** (upper case), **0-9**, **-** • max. 15 characters
Room Name	Defines the room name required to identify the respective SL TeamConnect CU1 in the mobile dialer iOS App when UDP or XML is selected as the connection method (see page 12). Character restrictions: • all standard western characters • max. 32 characters
Use DHCP	Defines if a DHCP server should be used to obtain an IP address or if the IP address is defined statically.
IP Address / Subnet / Gateway	Displays the IP address, subnet and gateway when DHCP is enabled or allows manual configuration if DHCP is disabled.
Use DNS	Defines if a domain name system is used for static IP addresses.
DNS Address	Defines the address of the DNS server.

Option	Setting
IP Filters	Defines up to 4 IP filters. If an IP filter is defined, only the devices with the IP addresses entered in the **IP Filters** area can connect to the SL TeamConnect CU1 via a (W)LAN connection.
Change Admin Login	Defines the user name and password required to access the SL TeamConnect CU1 via a (W)LAN connection in the Configuration Manager software. Character restrictions: • all standard western characters • max. 12 characters
Change Room Password	Defines the room password required to access the meeting room in the mobile dialer iOS App and the browser-based dialer. Character restrictions: • all standard western characters • max. 12 characters

Some changes might require a reboot of the SL TeamConnect CU1. During the reboot the audio signals are interrupted.

Serial tab



Option	Setting
Baud Rate	Adjusts the data rate of the RS-232 control port (fixed settings: 8-bit, 1 stop, no parity).
Flow Control	Manages the data rate between the PC and the SL TeamConnect CU1, preventing a fast sender from outrunning a slow receiver.

The recommended baud rate for reliable communication is 57,600 with **Flow Control** enabled.

The dialer

There are two variants of the TeamConnect dialer application: the browser-based dialer and the mobile iOS App dialer.

Both dialer versions have been developped for using the TeamConnect system for teleconferencing. In order to work properly, the dialers must be able to access all SL TeamConnect CU1 devices in the network which are used for conferencing.

The dialers have the following functions:

- A keypad for dialling telephone numbers
- The possibility to run audio setting presets stored in the SL TeamConnect CU1
- Volume control
- Mic mute function
- Access to the phonebook of the SL TeamConnect CU1 (browser-based dialer and iOS App) and to the contacts stored on the device (iOS App only)

The browser-based dialer

The browser-based dialer is an HTML application which is served by a web server on the SL TeamConnect CU1.

Compatibility

- Microsoft Internet Explorer 8 or higher
- Mozilla Firefox
- Google Chrome
- Apple Safari

The browser-based dialer can be operated on computers (Mac, PC, etc.) and mobile devices (Android, iOS, etc.).

Working conditions

The following conditions must be met in order for the browser-based dialer to work properly:

- network access via port 80 / http protocol.
- accessibility of the SL TeamConnect CU1 via (W)LAN

The mobile dialer iOS App

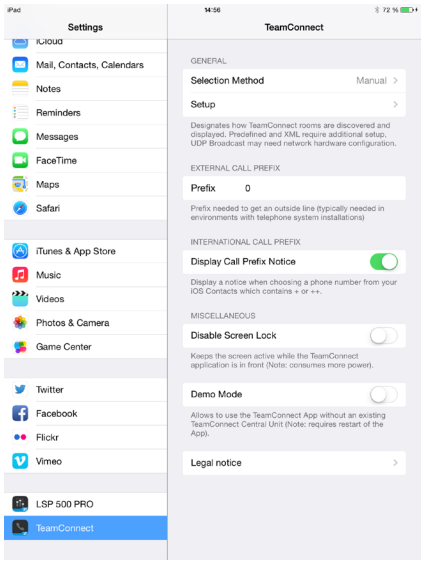
The mobile dialer is the iOS App version of the browser-based dialer.

To download the App:

- Download the iOS App via the QR code on the left.
  or
- Download the iOS App via the following link:
  https://itunes.apple.com/app/teamconnect/id691162558
  or
- Search for "Sennheiser TeamConnect" in the App Store.

The App is installed on the iOS device and communicates with the SL TeamConnect CU1 via **port 23 (Telnet)**.

Settings and configuration



The settings of the TeamConnect App are configured in the iOS settings.

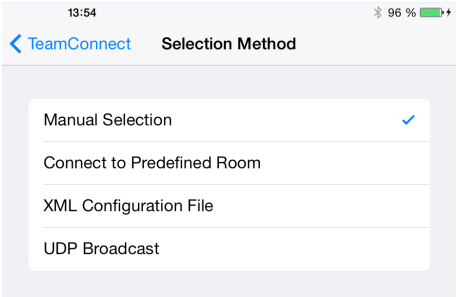
To configure the settings of the TeamConnect Dialer App:

- Open the **Settings** menu on your iOS device.
- Navigate to the **TeamConnect** settings menu.

You can configure the following settings:

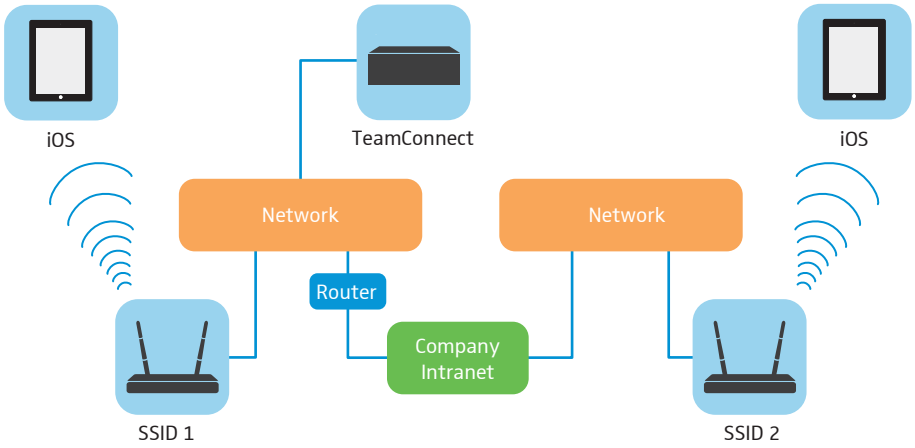
Selection Method

The following four room selection methods are available.



Option	Description
Manual Selection	The login information for the room must be entered manually after starting the App (**Device Name** and **Room Password**, see „Networking tab“ on page 9). ▶ Make sure that the iPad is able to connect to the SL TeamConnect CU1 via port 23.
Connect to Predefined Room	The App connects automatically to a predefined meeting room. The login data for the meeting room need to be specified under Setup in the App settings. See page 14.
XML Configuration File	A list of meeting rooms defined in an XML configuration file is displayed after starting the App. For further information on creating and accessing the XML file see page 15.

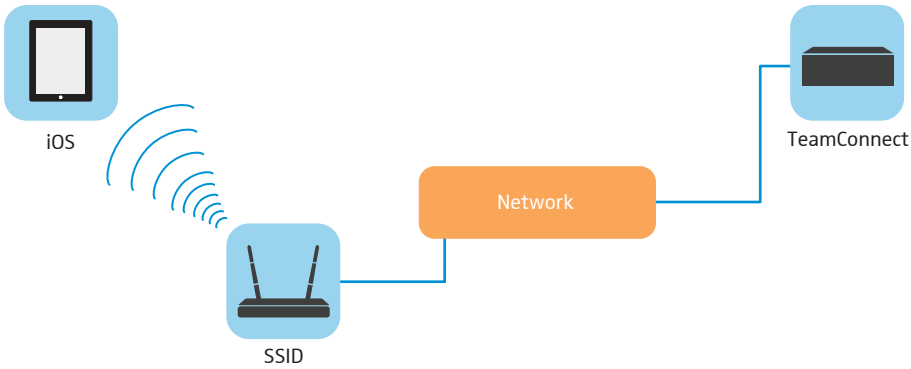
Example for a possible network structure for these three selection methods:



If the network consists of more than one network segment, the access across the network segments must be routed. The SL TeamConnect CU1 must be accessible from all network access points.

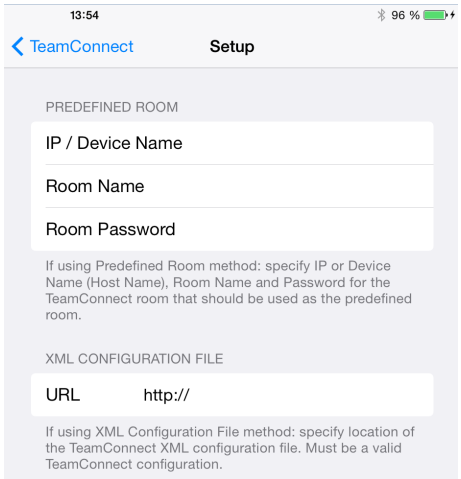
Option	Description
UDP Broadcast	A UDP broadcast is performed and all available rooms are displayed after starting the App. For this scenario, the iPad and the SL TeamConnect CU1 must be in the same network segment (subnet).

Required network structure for this selection method:



Setup

In the Setup menu of the App settings you can specify the details for connecting to a predefined room or to display the available rooms specified in an XML configuration file.



Predefined Room

If **Predefined Room** is chosen as the selection method, you need to configure the following settings here:

Option	Explanation
IP / Device Name	Enter the IP address or the device name of the desired SL TeamConnect CU1.
Room Name	Enter the Room Name of the desired SL TeamConnect CU1.
Room Password	Enter the room password required to access the desired SL TeamConnect CU1.

When the App is started, it will automatically connect to the SL TeamConnect CU1 which is specified here.

XML Configuration File

If **XML configuration file** is chosen as the selection method, you need to configure the following settings here:

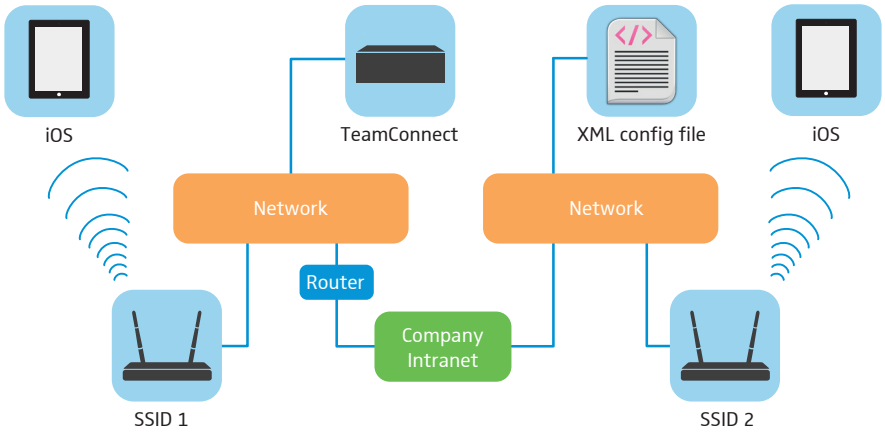
To create an XML configuration file for the room selection in the iOS App:

- Download the file **TeamConnectConfig.xsd** from the TeamConnect product page at www.sennheiser.com
- Create a new XML configuration file based on the XSD file you downloaded.
- Validate your XML configuration file against the XSD file.

  Only validated XML configuration files can be processed by the App.
- Store your XML configuration file at an accessible location in your network.
- Indicate the URL of the XML configuration file in the settings of the App.

  After starting the App, a list of all available rooms is displayed. This is the list of all the SL TeamConnect CU1 devices specified in the XML configuration file.

  Both the location of the XML configuration file and the SL TeamConnect CU1 devices defined in the file must be accessible in the network for this selection method to work.



This is an example of what the XML configuration file could look like:

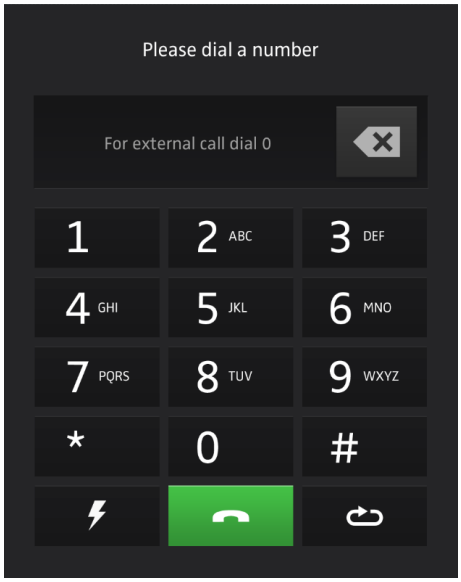
```
<?xml version="1.0" encoding="utf-8" ?>
- <teamConnectConfig xmlns="http://www.sennheiser.com/TeamConnect" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.sennheiser.com/TeamConnect TeamConnectConfig.xsd">
  - <devices>
    - <device>
        <displayName>TeamConnect Room 1</displayName>
        <host>tc-room-1</host>
      </device>
    - <device>
        <displayName>TeamConnect Room 2</displayName>
        <host>tc-room-2</host>
      </device>
    - <device>
        <displayName>TeamConnect Room 3</displayName>
        <host>tc-room-3</host>
      </device>
    - <device>
        <displayName>TeamConnect Room 4</displayName>
        <host>tc-room-4</host>
      </device>
    </devices>
</teamConnectConfig>
```

XML node	Information
<displayName>	This node contains the desciption of the SL TeamConnect CU1 device in the meeting room. It can be the same name specified as the **Room Name** in the **Networking** tab of the **Communication Settings** configuration window. However, you may also choose a different name.
<host>	This node must contain the device name of the SL TeamConnect CU1 in the meeting room. It must be the exact same **Device Name** as specified in the **Networking** tab of the **Communication Settings** configuration window.

External call prefix

If your corporate telephone system requires a dialling prefix for an outside line, you can indicate this prefix here.

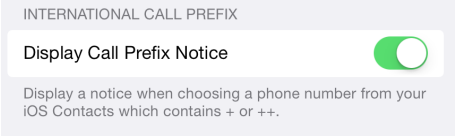
The prefix entered here will be displayed in the dialling pad of the dialer reminding the user to dial the prefix for external calls.



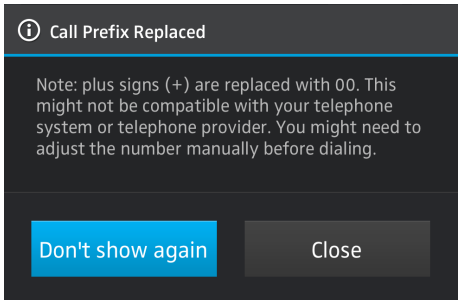
When choosing a contact from the local iOS contacts, the external call prefix will be added automatically.

International call prefix

When you select a phone number from the iOS contacts stored on your iOS device, which has a + at the beginning (e.g. +49), the + will be replaced by 00 in the dialer automatically. However, this prefix might not be supported by your local telephone provider or your telephone system.

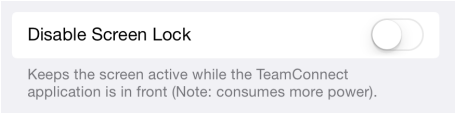


If this option is activated in the settings, the following notice will be displayed in the dialer after selecting a phone number with a + at the beginning from the iOS contacts:



Disable Screen Lock

This function keeps the iPad from entering the screen lock while the TeamConnect application is in front.



POSSIBLE LOSS OF CONNECTION

If a telephone connection is active in the TeamConnect application and the iPad enters the screen lock, the telephone connection will be lost.

We recommend activating this function.

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