TeamConnect
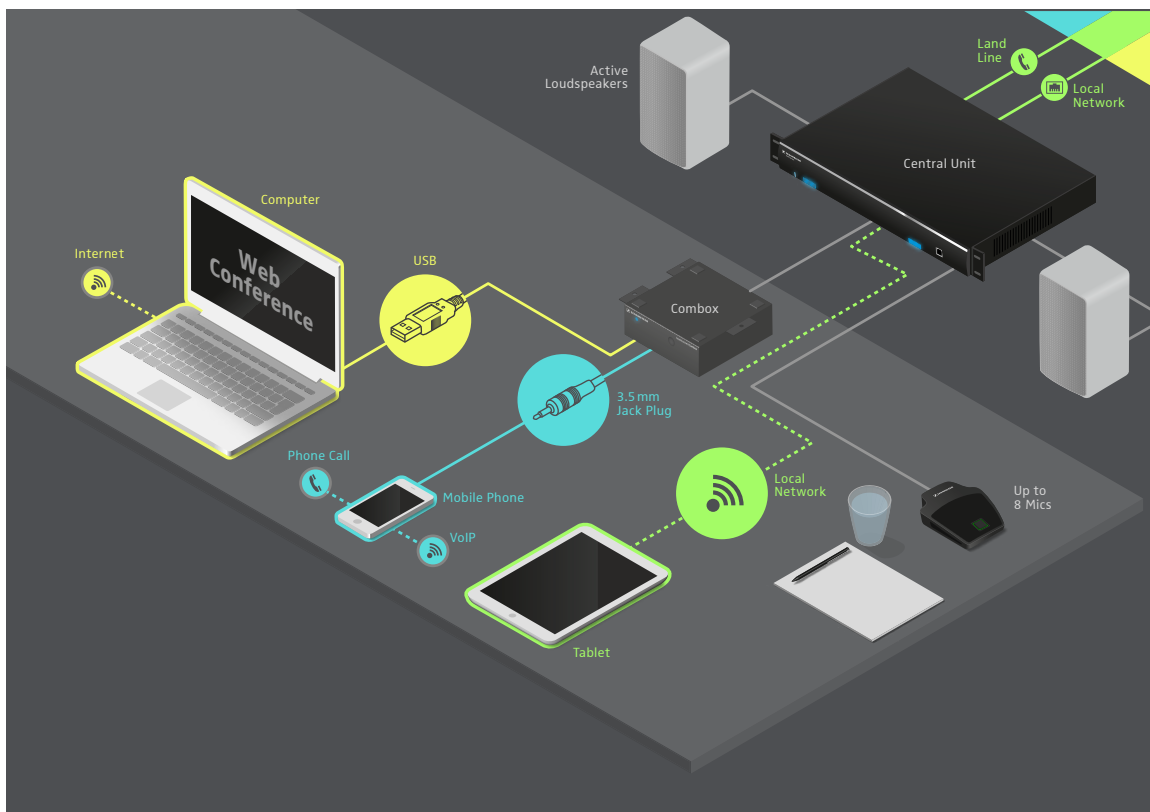# TeamConnect System - The perfect audio solution for meetings

FEATURES

- One solution with high flexibility for end-users
- Easy to use with iOS app or any network device via web server application
- Hassle free operation with nearly any personal mobile device
- Sennheiser well known audio quality
- High efficiency of remote meetings because of high speech intelligibility and audio quality
- Minimum effort of administration and maintenance
- For remote meetings with up to 16 participants per location

With TeamConnect Sennheiser provides a professional complete audio system for meeting rooms which require a web and telephone conference infrastructure. Due to the optimization for speech intelligibility all TeamConnect components such as microphones and loudspeakers match perfectly. By using your business devices such as your iPad or your notebook you will be able to start the meeting immediately. All necessary components are provided by Sennheiser with the main objective: you care for your business, Sennheiser for your conversations at meetings.

SYSTEM OVERVIEW

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ARCHITECT'S SPECIFICATION

A complete professional audio system for web and tele-conferencing applications in standard meeting rooms, comprised of a central unit, a combox and other devices such as microphones and active loudspeakers.

The audio system shall be capable of simultaneous multiple conferencing operation, i.e. capable of allowing users to combine several conferences set up on different connection types (e.g. a web conference via Skype, a teleconference via landline and a mobile phone conference via GSM) into one conference where all participants can interact with each other simultaneously.

The central unit shall be an automatic mixer for professional quality audio in multiple microphone web and teleconferencing applications. It shall provide advanced mixing capabilities and configuration options. All devices used in the system shall be connected, directly or indirectly, to the central unit. The central unit shall be equipped with a TELCO telephone interface. An Ethernet port shall be provided for network connections. The central unit shall feature an RS-232 control port for connecting a third party media control system (Creston, AMX, etc.). The central unit shall have a USB 2.0 port for connecting a PC for configuration purposes and shall also be configurable via the RS-232 port or the network (Ethernet port). The required "Configuration Manager" PC software for configuring the central unit and all other components shall be supplied. The central unit shall feature eight mic/line inputs (each with 24V switchable phantom power), two additional line inputs and eight audio outputs for connecting e.g. active loudspeakers. The central unit shall work with any microphone with a standard terminal connector. The central unit shall support mono and stereo acoustic echo cancellation, i.e. one or two out of the eight outputs shall be selectable as the acoustic echo cancellation reference. If all eight output channels do not suit the echo cancellation needs, two freely configurable virtual reference channels shall be selectable as the reference for echo cancellation. The connection between the central unit and the combox shall be made by means of a standard CAT5 cable.

The combox shall be "plug and play" (no drivers required) and shall be the system's audio interface, allowing the system to be used as an audio extension. The combox shall be used to process computer audio as well as headset or enterprise telephone audio in the system. The USB 2.0 port of the combox shall allow the connection of a PC. Via the combox, the system shall be capable of playing back all audio from the PC (e.g. web conferences, any audio and video content) as well as picking up and processing the audio in the meeting room and feeding it back to the PC. In addition, any device with a 4-pin 3.5 mm jack socket (e.g. a mobile phone or tablet PC) shall be connectable to the combox's headset socket via a 4-pin special cable, thus allowing audio from the mobile device to be processed in the system. The combox shall not be required for teleconferencing via landline.

Using the "TeamConnect" dialer iOS app for iPad/iPhone or the browser-based dialer (e.g. computer, Android tablet PCs, ...), the central unit shall be remote controllable. The dialer used shall be capable of establishing the landline connection for teleconferencing and shall include remote control functions for the overall system (e.g. selecting and applying previously saved configuration presets, adjusting the volume, muting the whole system and accessing a phone book).

The microphones shall be pre-polarized condenser boundary layer microphones operating on 24V phantom power. The microphone capsules shall be optimized for speech intelligibility. The microphones shall be available as surface-mounted versions with either an omni-directional or a cardioid pick-up pattern and as a tabletop version with a cardioid pick-up pattern. The tabletop version shall also be available as an -S variant with a programmable microphone button (toggle on/off, PTM, PTT and permanent on) and a bi-color LED ring for status indication. The surface-mounted microphones shall be available as -L variants featuring an XLR-5 connector and a bi-color LED ring.

The loudspeaker shall be active and optimized for speech intelligibility. Its high, medium and low frequency levels shall be adjustable in order to obtain optimum sound quality depending on the mounting position of the speaker and the room characteristics. The loudspeaker shall have 2 power modes: on and auto standby. The loudspeaker's high pass filter shall be adjustable to 50 Hz, 70 Hz or 100 Hz. The input sensitivity shall be selectable between -6 dBu, 0 dBu or +10 dBu. The loudspeaker shall come complete with a wall mounting kit and, when wall mounted with the supplied spacers, shall be pivotable by 180° and tiltable. Up to eight loudspeakers shall be connectable to the central unit.

Dimensions shall be as follows: central unit: 432 x 191 x 51 mm (17" x 7.5" x 2"); combox: 119 x 143 x 44 mm (4.7" x 5.6" x 1.7"); tabletop boundary layer microphone: 85 x 100 x 25 mm (3.35" x 3.94" x 0.98"); surface-mounted boundary layer microphone: 28.5 mm (1.12") in diameter and 83 mm (3.27") in total height, installation height shall be 12 mm (0.57"); loudspeaker: 240 x 140 x 161 mm (9.45" x 5.51" x 6,34"). Approximate weights shall be as follows: central unit: 2.25 kg (4.5 lbs.); combox: 0.75 kg (1.51 lbs.); tabletop boundary layer microphone: 291 g (10.27 oz); surface-mounted boundary layer microphone: 58 g (2.05 oz); loudspeaker: 3.1 kg (6.83 lbs.).

The devices shall be manufactured by Sennheiser and shall be as follows: central unit shall be type CU1; combox shall be type CB1; tabletop boundary layer microphones shall be type MEB 114 and MEB 114-S; surface-mounted boundary layer microphones shall be type MEB 102 and MEB 104 and their -L variants; loudspeaker shall be type SL Loudspeaker 52 A W.

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SPECIFICATIONS

SL TeamConnect CU1

MIC / LINE INPUTS 1-8

Impedance	10 kΩ balanced
Maximum level	-65 dBu to +17 dBu
Echo cancellation	128 ms tail time (works with 12 dB of room gain)
Phantom power	24 V DC at 10 mA

LINE INPUTS 1-2

Impedance	10 kΩ balanced
Maximum level	17 dBu

LINE OUT OUTPUTS 1-8

Impedance	50 Ω
Nominal level	0 dBu
Maximum level	17 dBu

TELEPHONE INTERFACE

Telephone audio performance conditions	Unless otherwise specified, all measurements are performed withTransmit Limiter and Receive ALC disabled
Frequency response	250 Hz to 3.3 kHz ±1 dB
THD+N	< 0.30 % re-max level 250 Hz to 3.3 kHz
SNR	> 62 dB re-max level
Telco line echo cancellation	Tail time: 32 ms Null: 55 dB nominal
Telephone noise cancellation	6 - 15 dB attenuation

RS-232 CONTROL PORT

Connector	DB9 female
Baud rates	9,600 / 19,200 / 38,400 / 57,600 (default) / 115,200
Protocol	8-bit / 1 stop / no parity
Hardware flow control	ON (default)/OFF

SL TeamConnect CB1

HOUSING

Dimensions (W x H x D)	4.7" x 5.6" x 1.7" (11.9 cm x 14.3 cm x 4.4 cm)
Weight	1.51 lbs. (0.75 kg)

AUDIO PERFORMANCE

Frequency response	40 to 3,300 Hz THD
Noise	< 0.04 % re-max level with 0 dB gain at 1 kHz
Dynamic range	> 84 dB (non A-weighted)

External Power Supply

DC output voltage	+12 V
AC input voltage	100 to 240 V AC
AC input frequency	47 to 63 Hz
Input current	0.8 A (RMS) max. at 115 V AC 0.5 A (RMS) max. at 240 V AC
Leakage current	3.5 mA max.
Output power	30 W
Temperature	Operation: 0 to +40 °C (32 to 104 °F) Storage: -30 to +85 °C (-22 to 185 °F)
Relative air humidity	20 to 90 %

SL Mic Hub 1

Housing	metal
Dimensions	144 x 76,3 x 31,5 mm

PORTS

4x Mic	5-pin terminal connector
2x Connect/Status	6-pin terminal connector
1x Mute	7-pin terminal connector
1x Audio	RJ-45

POWER SUPPLY

The SL Mic Hub 1 ist connected to the TeamConnect Combox CB1 via a 6-pin terminal connector cable. The Combox delivers the necessary power supply to operate the bi-color status LEDs of the mute button MAS 1 TC and the hook buttonMAS 2 TC.
The Combox supplies sufficient power for up to 5 MAS 1/2 buttons. If you want to use more than 5 buttons in your setup, you need to connect an external power supply (5 V, >100 mA, recommended Sennheiser Power supply Art.-No. 534480) to pin 6 and 7 of the MUTE socket.

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SPECIFICATIONS

	MEB 102-L TC	MEB 104-L TC
Transducer principle	pre-polarized condenser microphone	pre-polarized condenser microphone
Acoustic principle	boundary layer microphone	boundary layer microphone
Pick-up pattern	omni-directional	cardioid
Frequency response	40 Hz – 20 kHz	40 Hz – 20 kHz
Nominal impedance at 1 kHz	200 Ohm	200 Ohm
Sensitivity	16 mV/Pa	14 mV/Pa
Maximum sound pressure level	125 dB	125 dB
Equivalent noise level	21 dB (A)	28 dB (A)
Equivalent noise level weighted as per CCIR 468-3	31 dB (CCIR)	38 dB (CCIR)
Dynamic range	104 dB (A)	97 dB (A)
Phantom power	P 24 – P 48	P 24 – P 48
Current consumption	6 mA	6 mA
Connector	XLR 5	XLR 5
Pin assignment XLR-5M out	1 = gnd 2 = + (Mic +) 3 = - (Mic -) 4 = LED green (trigger signal) 5 = LED red (default)	1 = gnd 2 = + (Mic +) 3 = - (Mic -) 4 = LED green (trigger signal) 5 = LED red (default)
LED light ring color	red / green	red / green
TTL levels for LED activation	high > 2.4 V low < 0.4 V	high > 2.4 V low < 0.4 V
Connection cable	XLR-5F / Terminal connector 5-pin, length 3 m	XLR-5F / Terminal connector 5-pin, length 3 m
Weight	58 g	60 g
Height	83 mm (12mm above surface)	90 mm (19 mm above surface)
Diameter	28.5 mm	28.5 mm
Thread	M 20	M 20
Operating temperature	0 ° to +40 °C	0 ° to +40 °C

MAS 1 TC | MAS 2 TC

Supply voltage	5 V (12 mA max.)		Current consumption LED ring	12 mA
Connector	XLR-5M		Weight	60 g
Pin assignment XLR-5M out	1 = Switch 2 = Switch 3 = LED red - 4 = LED green - 5 = LEDs +5 V in		Height	81 mm (8 mm above surface)
			Diameter	28.5 mm
LED light ring color	red / green		Thread	M 20
TTL levels for LED activation	12 V		Operating temperature	-10 ° to +50 °C

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SPECIFICATIONS

MEB 114-S TC

Transducer principle	pre-polarized condenser microphone
Acoustic principle	boundary layer microphone
Pick-up pattern	cardioid
Frequency response	40 Hz – 20 kHz
Nominal impedance at 1 kHz	200 Ohm
Sensitivity	10 mV/Pa
Maximum sound pressure level	140 dB
Equivalent noise level	29 dB (A)
Equivalent noise level weighted as per CCIR 468-3	39 dB (CCIR)
Dynamic range	111 dB (A)
Switchable low cut	at 120 Hz
Phantom power	P 24 – P 48

Current consumption	5,3 mA
Connector	Terminal block 5-pin
Pin assignment	1 - mute 2 - mute status 3 - ground 4 - audio + 5 - audio -
LED light ring color	red / green
Microphone modes	controlled externally
Logic out	high level output voltage > 2.4 V low level output voltage < 0.4 V
Logic in	high level input voltage > 2.0 V low level input voltage < 0.8 V
Weight (without cable)	291 g
Dimensions (WxDxH)	85 x 100 x 25 mm
Operating temperature	-10 °C to +50 °C

SYSTEM COMPONENTS

Central Unit
SL TeamConnect CU1

Combox
SL TeamConnect CB1

Microphone Hub
SL Mic Hub 1

Active loudspeaker
SL Loudspeaker 52 A

On-table microphone
MEB 114-S TC

In-table microphones
MEB 102-L TC | MEB 104-L TC

Logic control buttons
MAS 1 TC | MAS 2 TC

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PRODUCTS

SL TeamConnect CUCB1 (Central unit & Combox)	Art. No. 506230	MEB 102-L TC- black	Art. No. 506729
		MEB 102-L TC - white	Art. No. 506763
SL Mic Hub 1	Art. No. 506606	MEB 102-L TC - grey	Art. No. 506764
SL Mobile Adapter 1	Art. No. 506767		
SL Loudspeaker 52 A	Art. No. 506243	MEB 104-L TC- black	Art. No. 506730
		MEB 104-L TC - white	Art. No. 506765
MAS 1 TC - black	Art. No. 506722	MEB 104-L TC - grey	Art. No. 506766
MAS 1 TC - white	Art. No. 506723		
MAS 1 TC - grey	Art. No. 506724	MEB 114-S TC- black	Art. No. 506600
MAS 2 TC - black	Art. No. 506603	MEB 114-S TC - white	Art. No. 506601
MAS 2 TC - white	Art. No. 506604	MEB 114-S TC - grey	Art. No. 506602
MAS 2 TC - grey	Art. No. 506605		

ACCESSORIES

Mains cable 5 m EU white	Art. No. 506276	Mains cable 1.8 m EU black	Art. No. 549345
Mains cable 5 m UK white	Art. No. 506277	Mains cable 1.8 m UK black	Art. No. 556917
Mains cable 5 m US white	Art. No. 506278	Mains cable 1.8 m US black	Art. No. 556918
		3.5 mm jack stereo cable for SL Mobile Adapter 1	Art. No. 556961

BUNDLES

	TeamConnect System	TeamConnect Standard Fix	TeamConnect Standard Flex	TeamConnect Large Fix	TeamConnect Large Flex
SL TeamConnect CUCB1	1	1	1	1	1
SL Mobile Adapter 1	1	1	1	1	1
SL Mic Hub 1	-	1	1	2	2
SL Loudspeaker 52 A	-	2	2	2	2
MAS 1 TC	-	1	-	2	-
MAS 2 TC	-	-	1	-	1
MEB 104-L TC	-	4	-	8	-
MEB 114-S TC	-	-	4	-	8
Mains cable 5 m	-	2	2	2	2
Mains cable 1.8 m	1	1	1	1	1
3.5 mm jack stereo cable	1	1	1	1	1

TeamConnect System EU	Art. No. 506235
TeamConnect System UK	Art. No. 506236
TeamConnect System US	Art. No. 506237
TeamConnect Standard Fix EU	Art. No. 506737
TeamConnect Standard Fix UK	Art. No. 506738
TeamConnect Standard Fix US	Art. No. 506739
TeamConnect Standard Flex EU	Art. No. 506740
TeamConnect Standard Flex UK	Art. No. 506741
TeamConnect Standard Flex US	Art. No. 506742
TeamConnect Large Fix EU	Art. No. 506743
TeamConnect Large Fix UK	Art. No. 506744
TeamConnect Large Fix US	Art. No. 506745
TeamConnect Large Flex EU	Art. No. 506746
TeamConnect Large Flex UK	Art. No. 506747
TeamConnect Large Flex US	Art. No. 506748