Media Control Systems

3rd party control of Sennheiser products using media control protocols

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Introduction

This document gives an overview of Sennheiser‘s media control protocols and the supported products.

We will present some application examples to get a better understanding of how the different Sennheiser products can interact with 3rd party media control systems in certain scenarios.

Application examples

The following examples will show some common situations in which a media control system can be useful.

Controlling a conference camera with TeamConnect Ceiling 2

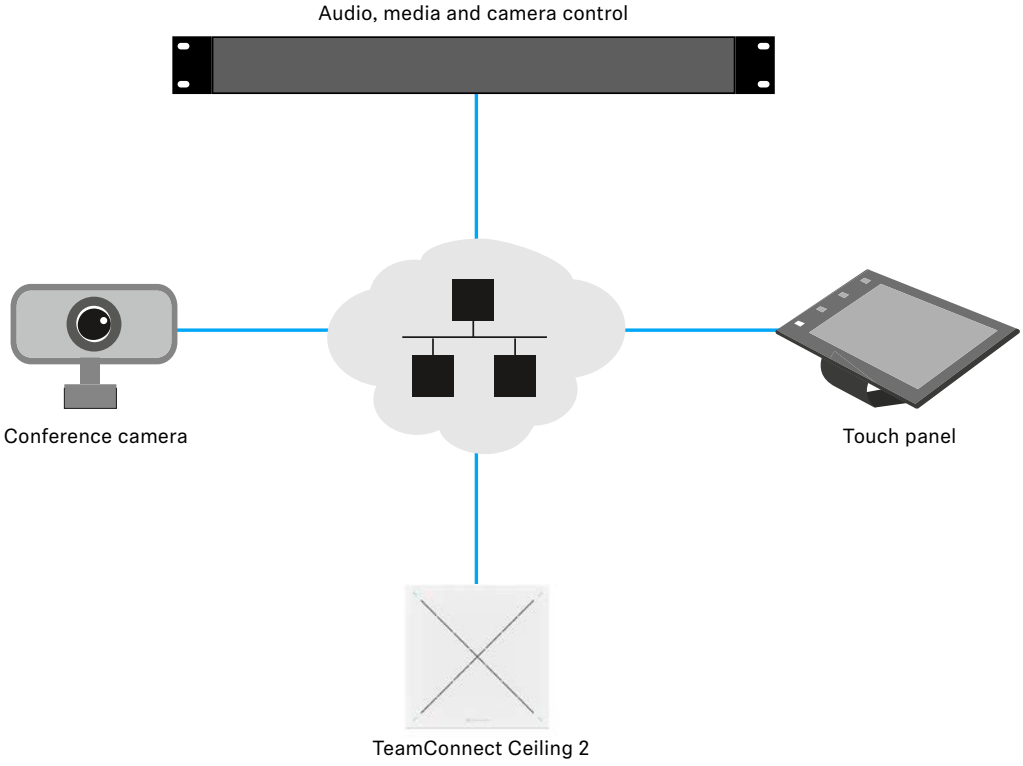
TeamConnect Ceiling 2 (TCC2) provides the status information of the horizontal and vertical angles of the beamforming via the SSC protocol. This information can be used for camera control.

This means that a camera controller can use that information to recall programmed positions of a videoconferencing camera.

The angle information of the TCC2 is related to the center of the audio beam. The beam itself has an opening angle of 30° (average, depending on the frequency) . This relates to a pick-up spot of approximately 2 m in diameter (= 1 m radius) on a distance of 4 m to the center of the microphone.

How to use the angle information: depending on the distance of the person speaking, the integrator needs to define a value range of horizontal and vertical angles for every participant position in the room which needs to be picked up. This needs to be set to a dedicated camera preset position.

Sennheiser just provides the status data of the beam. The configuration of the camera control needs to be done by an integrator.

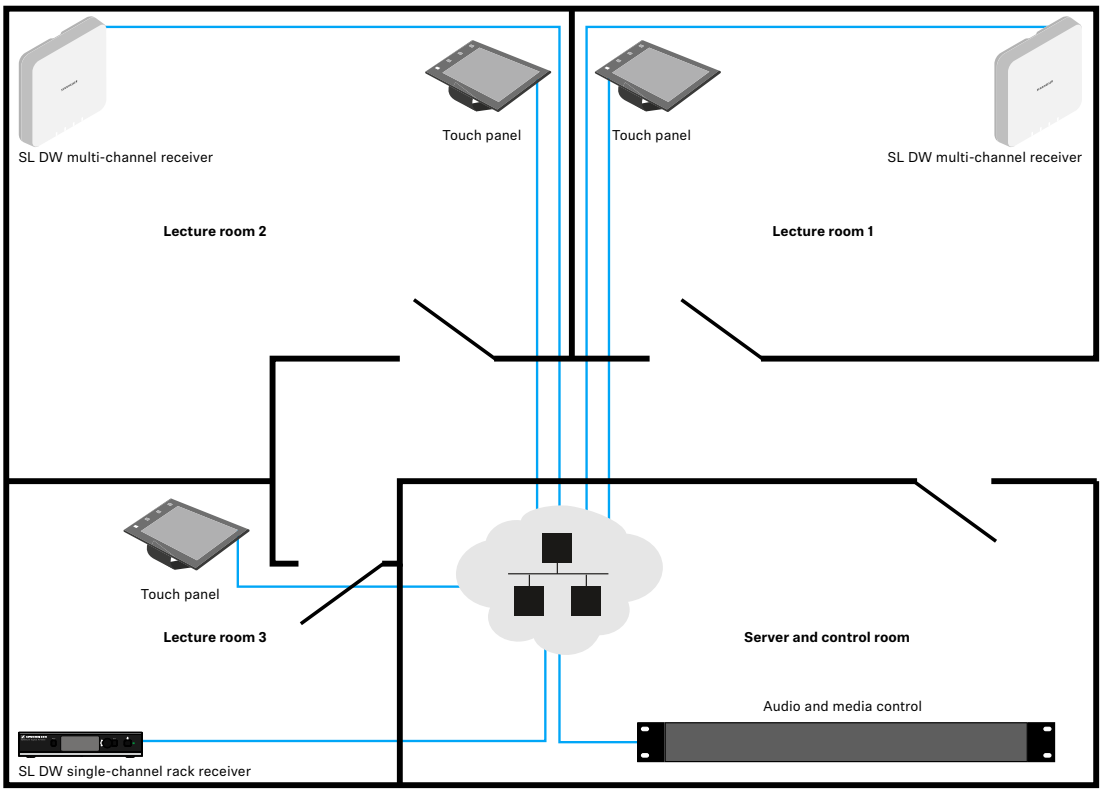


Controlling SpeechLine Digital Wireless microphones in multiple rooms of a university campus

A university campus has SpeechLine Digital Wireless installed in every lecture room. Every room is controlled via a media control system. On every desk there is a touch panel which the professor can use to mute or unmute the microphone. The professor can also select different profiles depending on the type of microphone (lavalier, headset, handheld, etc.).

On the display of the touch panel the remaining battery time of the transmitter is indicated. Volume adjustment is also possible.

That means that every lecture can be adjusted to the individual needs easily and without an on-site technician having to be present.



Media control protocols provided by Sennheiser

Sennheiser provides two proprietary media control protocols:

- **Sennheiser Sound Control Protocol (SSC)**
- **Sennheiser Media Control Protocol**

Below you will find an overview of the Sennheiser products which are compatible with these protocols.

Overview

Sennheiser Sound Control Protocol (SSC)	Sennheiser Media Control Protocol
SpeechLine Digital Wireless www.sennheiser.com/speechline-dw	ADN www.sennheiser.com/adn-cu1
TeamConnect Ceiling 2 www.sennheiser.com/tcc2	evolution wireless G3 www.sennheiser.com/em-300-g3
Digital 6000 www.sennheiser.com/digital-6000	evolution wireless G4 www.sennheiser.com/em-300-500-g4
Digital 9000 www.sennheiser.com/em-9046	2000 Series www.sennheiser.com/em-2050
evolution wireless D1 www.sennheiser.com/em-d1	

Media Control Protocol documentation

To obtain the media control protocol documentation for the products indicated in the table above proceed as follows:

▷ Open the respective product page on the Sennheiser website (specific links see above)

▷ Navigate to the download section of the product page.
In the category *Media Control Protocols* you will find the latest version of the documentation.

Ports and protocols used for media control communication

For detailed information on ports and protocols used for the communication with media control systems please refer to chapter „Ports and protocols“ at the end of this document.

3rd party media control systems

The following manufacturers provide media control systems which are compatible with Sennheiser products. For detailed information on supported devices and corresponding firmware version please refer to the manufacturers‘ documentation and information in the following links.

Manufacturer (alphabetic order)	Further Information
Bose	https://pro.bose.com
Crestron	https://applicationmarket.crestron.com
Extron	https://www.extron.com/download/driverfilter.aspx
QSC	http://www.qsc.com

Ports and protocols

Device	Ports & Protocol	Use case
ADN	53248	CU discovery
	53249.53250	CU monitoring
	any unused (1.0.0.2) 53251 (>= 1.0.0.3)	TCP/IP Traffic
Digital 6000	6970 / UDP	
	224.0.0.251:5353 Multicast	mDNS
	224.0.0.223:6969 Multicast	Auto setup
evolution wireless G4	224.0.0.225:8137	Multicast / device discovery
	8133 / UDP	all IP communication
	57276 - 57283	Service software internal communication
	57376 - 57383	Service software internal communication
TeamConnect Ceiling 2	45 / UDP	SSC
	69	Tftp (only temporarily during the firmware update)
	224.0.0.251:5353	mDNS via Multicast
MobileConnect/CS1	LAN1	Ruckus AccessPoint Connection + Audio Streaming to the Client in Standalone Mode
	LAN2 / TCP on 8000-9000, http, UDP on 3200-3400	Audio Streaming to the Client in Integrated Mode
	LAN3, 8000, http	Admin Interface Access
LSP 500 PRO	TCP:53265	Remote control protocol
	UDP: 239.255.12.42:1234	Multicast for discovery
SpeechLine Digital Wireless	45	Control Cockpit / FW Update
	5353	mDNS