# Sennheiser TeamConnect Ceiling 2

| | |
|---|---|
| **Version** | 1.0.0 |
| **Simpl+ Module filename** | Sennheiser_TCC2_1.0.0_NO.usp |
| **Simpl# Library filename** | Sennheiser_Modules_CSharp.clz |
| **Tested on processor** | CP3 |
| **Tested on processor firmware** | 1.601.0050 |
| **Tested on device model** | Sennheiser SL Ceiling Mic 2 |
| **Tested on device firmware** | 1.4.2 |
| **Developed by** | Niklas Olsson – JaDeVa AB |

**Summary:**

This module integrates with Sennheiser TeamConnect Ceiling 2, a microphone mounted in the ceiling of the room.

**Release notes:**

- 1.0.0
    - Initial release

| PARAMETERS | |
|---|---|
| **Device_IP_Param** | The IP-address of the device we will connect to.<br>If you want to be able to change this during runtime, instead use serial input **Device_IP**. |
| **Device_UDP_Port_Param** | The UDP port of the device we will connect to. This should most likely always be 45d<br>Default: 45d |

| INPUTS | |
|---|---|
| Connect | Opens the connection to the device when signal is high. I you use the parameters to set Device Ip and Port, you may define this signals as '1'. |
| Debug | Enables debug messages to be printed to the text console while signal is high. Make sure this is not left high when not used. |
| Enable_Incoming_Commands | When set to high, all received data from the device will be outputed on the serial output **Incoming_Command_FB**. |
| Enable_Beam_Azimuth_Feedback<br>Enable_Beam_Elevation_Feedback<br>Enable_Input_Peak_Level_Feedback | Set this high when you want the analog output Beam_Azimuth_Degrees_FB / Beam_Elevation_Degrees_FB / Input_Peak_Level_FB to start outputing values.<br>You may define this signals as '1'.<br>The reason you have to manually enable this is because the device is quite "chatty" so if you don't use this feature all that traffic is unnecessary. |
| Mute_On<br>Mute_Off<br>Mute_Toggle | Mutes/Unmutes/toggles the audio outputs. This will also |
| Identify_On<br>Identify_Off<br>Identify_Toggle | Turns on/off/toggles the identify feature of the device. It blinks a LED on the frontpanel. |
| Exclusion_Zone_Active<br>Exclusion_Zone_Inactive<br>Exclusion_Zone_Toggle | Activates/disables/toggles the exclusion zones. Exclusion zones are areas where the microphone should not be listening. These are configured in the device settings. |
| Custom_Led_Active<br>Custom_Led_Inactive<br>Custom_Led_Toggle | Activates/disables/toggles the custom led color. The color is set with the analog input Custom_Led_Color. |
| Custom_Led_Color | Sets the custom led color. The color is activated with digital inputs Custom_Led_Active/Inactive/Toggle.<br>Range: 0-7 |

| | |
|---|---|
| | 0 = Light Green<br>1 = Green<br>2 = Blue<br>3 = Red<br>4 = Yellow<br>5 = Orange<br>6 = Cyan<br>7 = Pink |
| **Mic_Mute_Led_Color**<br>**Mic_On_Led_Color** | Sets the led color for muted/unmuted states.<br>Range: 0-7<br><br>0 = Light Green<br>1 = Green<br>2 = Blue<br>3 = Red<br>4 = Yellow<br>5 = Orange<br>6 = Cyan<br>7 = Pink |
| **Led_Brightness** | Sets the brightness of the leds on the device.<br>Range: 0-5<br>0 = Off<br>…<br>5 = Full |
| **Dante_Output_Gain** | Sets the Dante output gain. Value is in dB.<br>Range: 0-24 |
| **Speaker_Detection_Threshold** | Sets the sensitivity of the speaker detection based on the noise in the room.<br>Range: 0-2<br><br>0 = Quiet room<br>1 = Normal room<br>2 = Loud room |
| **Set_Name** | Sets the name of the device.<br>Max length: 8 characters. |
| **Set_Location** | Sets the location of the device.<br>Max length: 8 characters.<br>Allowed chars: 0-9, A-Z, a-z or <space><br>Must start with a letter<br>May not start or end with a – or _ |
| **Set_Position** | Sets the position of the device. Intended to be used as the position in the location. Example if location is ”Room_1”, position might be ”Over the table”.<br>Max length: 30 characters. |

| | |
|---|---|
| | Allowed chars: 0-9, A-Z, a-z or <space> |
| **Send_Custom_Command** | Makes it possible to send your own commands to the device. Refer to the Sennheiser Sound Control Protocol (SSC).<br>Example command: {"device":{"reset":true}} |
| **Device_IP** | The IP-address of the device we will connect to.<br>Make sure you connect after this is set. |
| **Device_UDP_Port** | The UDP port of the device we will connect to. This should most likely always be 45.<br>Make sure you connect after this is set. |

| **OUTPUTS** | |
|---|---|
| **Responding_FB** | This is high as long as the device is responding. As the protocol uses UDP there is no connection state, so it might take up to a minute before responding goes low after the device has stopped responding. |
| **Mute_On_FB** | This is high while the audio output is muted. |
| **Identifying_FB** | This is high while the device is in identifying state. |
| **Exclusion_Zone_Active_FB** | This is high while exclusion zones are active in the device. Exclusion zones are areas where the microphone should not be listening. These are configured in the device settings. |
| **Custom_Led_Active_FB** | This is high while the leds on the device show the custom color. |
| **Custom_Led_Color_FB** | The currently selected custom led color.<br>Range: 0-7<br><br>0 = Light Green<br>1 = Green<br>2 = Blue<br>3 = Red<br>4 = Yellow<br>5 = Orange<br>6 = Cyan<br>7 = Pink |
| **Mic_Mute_Led_Color_FB**<br>**Mic_On_Led_Color_FB** | The currently selected led color for muted/unmuted states.<br>Range: 0-7<br><br>0 = Light Green |

| | |
|---|---|
| | 1 = Green<br>2 = Blue<br>3 = Red<br>4 = Yellow<br>5 = Orange<br>6 = Cyan<br>7 = Pink |
| **Led_Brightness_FB** | The currently selected brightness of the leds on the device.<br>Range: 0-5<br>0 = Off<br>…<br>5 = Full |
| **Dante_Output_Gain_FB** | The current Dante output gain. Value is in dB.<br>Range: 0-24 |
| **Speaker_Detection_Threshold_FB** | The currently selected sensitivity of the speaker detection.<br>Range: 0-2<br><br>0 = Quiet room<br>1 = Normal room<br>2 = Loud room |
| **Beam_Azimuth_Degrees_FB** | If you set the digital input **Enable_Beam_Azimuth_Feedback** high, this will output he horizontal angle to the person currently speaking.<br>Value is in degrees.<br>Range: 0-359 |
| **Beam_Elevation_Degrees_FB** | If you set the digital input **Enable_Beam_Elevation_Feedback** high, this will output the vertical angle to the person currently speaking.<br>Value is in degrees.<br>Range: 0-90 |
| **Input_Peak_Level_FB** | If you set the digital input **Input_Peak_Level_Feedback** high, this will output the current input peak level of the microphone. Value is in dB.<br>Range: -90 - 0 |
| **Name_FB** | The name of the device. |
| **Location_FB** | The location of the device. |
| **Position_FB** | The position of the device. Intended to be used as the position in the location. Example if location is ”Room_1”, position might be ”Over the table”. |

| | |
|---|---|
| **Product_FB** | The product name of the device. Example: SLCM2 |
| **Version_FB** | The firmware version of the device. Example: 1.4.2 |
| **Serial_FB** | The serial number of the device. Example: 1234567890 |
| **Mac_Addresses_FB** | The mac adresses of the device. Example: 00:1B:66:11:22:33 |
| **Dante_Ip_Addresses_FB** | The ip addresses of the Dante outputs. This returns both addreses separated with a comma. If there's no network cable connected or no acdresses set, this might return a string only containing a comma.<br>Example: 192.168.10.2,192.168.10.3 |
| **Dante_Mac_Addresses_FB** | The mac addresses of the Dante outputs. This returns both addresses separated with a comma.<br>Example: 00:1B:66:44:55:66,00:1B:66:77:88:99 |
| **Incoming_Command_FB** | If you set the digital input **Enable_Incoming_Commands** high, this will output all the received data from the device.<br>The use case for this would be to extend the functionality of the module. |