SYMETRIX SOLUTIONS: TECH TIP

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Integrating Clockaudio CH32 Touch-switch and a Conference Microphone with Symetrix DSP

This Tech Tip will explain how to integrate the Clockaudio CH32 illuminated Halo LED touchpad and a cardioid desktop microphone with a Symetrix DSP.

It should be noted that any future Clockaudio products utilizing a bi-colored status indicator and switch will be standardized, using the same color code and connection method. At present, this tech tip is valid for the CH32, TS001, SM80S, S80, and CSS Series (CS1S-CS4S).





The integration of Clockaudio conference systems can be performed with any Symetrix DSP that has analog control inputs, however this tech tip uses a SymNet Edge specifically in all examples.

The CH32 is a translucent white, bi-color Halo Ring which includes a touch pad switch. There are (16) Red and (16) Green LEDs in the ring.

The logic outputs on the Edge unit can power single LEDs, but cannot provide the 60mA @ 12 VDC required to power the entire Halo Ring.

It is necessary to employ an external 12 VDC regulated power supply, in order to operate the CH32.



Cable Color	Function	RJ45 Pin Number	
Red	Red LED	2	
Blue	-V Switch	3	
Brown	+V (12 VDC) Switch	4	
Yellow	Switch Logic Control	5	
Green	Green LED	6	

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The CH32 has a wire pigtail with an RJ45 connector crimped on one end. The product comes with an RJ45 straight-through coupler to facilitate the connection to a permanently installed CAT5/5e/6 cable.

Please be aware that the wiring scheme may vary on your specific model of CH32. Always double check the manufacturer's documentation for the exact wire coloring of your model CH32.



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There are (3) important connections which need to be made between the CH32 and Edge.

- The Ground, Red LEDs, and Green LEDs wires from the CH32 should be connected to the Edge's Logic Outputs. For this example, use Logic Output #1 for the Red LEDs and Logic Output #2 for the Green LEDs.
- The Ground and Switch Control Logic wires should be connected to Edge's External Control Inputs. For this example, use External Control Input #1 for the Switch Control Logic.
- 3) Plus, minus, and ground of the audio line from the microphone should be connected to an Analog Mic/Line Input channel on Edge.

The final important connection is to an external power supply. In this example, a 12 VDC external power supply is connected across +V and -V/Ground. When the Green LEDs or the Red LEDs wire is grounded by Edge's Logic Outputs, the associated set of LEDs light. The Switch Logic Control wire will be open, or closed with respect to ground. The circuit's state is determined by toggle logic and should be connected to the Edge External Control Input.

It is the integrator's responsibility to configure (2) functions within the Edge unit:

- Touching the CH32 triggers a logic function on the Switch Logic Control wire. This contact closure must be connected to an External Control Input on the Edge unit and assigned to a parameter in software such as a Latched Button, then wired into a control process such as a Flip-Flop, in order to trigger a set of presets that mute and un-mute the microphone associated with the CH32.
- 2) The presets triggered by the contact closure after touching the CH32 should also include a parameter that pulls either the Green LEDs wire or the Red LEDs wire to ground on Edge's Logic Outputs connectors.

The integrator must decide whether it is desirable for the customer to have Red LEDs lit when the conference microphone is muted, or when it is open and in use.



Then, the presets in the Edge should be configured so the proper wire is pulled to ground according to the lighting scheme the customer wishes to have.



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Please refer to the diagram below as an example of wiring a CH32v02 to Edge's Logic Outputs, External Control Inputs, and Analog Mic/Line Inputs:



NOTE: The coupler that ships with the CH32 has its corresponding pins visually in a crossover pattern if looking down directly at the coupler. The coupler's pin pattern is directly duplicated on the opposite face. The wiring diagram above displays the colors considering that only pins 2 - 6 are used and assuming that the same colors are continued on the other side of the coupler.



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