ClearOne

TECH NOTE

PRODUCTS SUPPORTED:

All Converge Pro Products
except the TH20 and VH20

CLEARONE DOCUMENT 801-000-000-05
(REVISION 1.1) November 2012

USING THE CLOCKAUDIO® TS-001 WITH THE CONVERGE PRO

OVERVIEW

This Tech Note applies to the following Converge Pro systems using the ClockAudio CS 2S-RF microphone system:

- 880
- 880T
- 880TA
- 8i
- 840T
- SR1212
- SR1212A

The ClockAudio TS-001 is a Flush mount electronic touch switch with 10 green / red led arrays to give clear precise visual status of operation. This document gives instructions on how to wire the TS-001 to the Converge Pro and the necessary programming within the Converge Pro to use the TS-001.

The TS-001 requires 12 VDC for operation, but the voltage supply of the Converge Pro provides only 3.3 VDC. Because the Converge Pro does not supply the required voltage, an external power supply is required. .

This document assumes the reader has knowledge of programming with ClearOne Console. If further assistance is needed please refer to the Converge Pro user manual or available technical documents in the Resources section of the ClearOne website at http://www.clearone.com, or call ClearOne Technical Support at 1-800-283-5936.

OPERATION OF THE CLOCKAUDIO TS-001 TOUCH SWITCH

The ClockAudio TS-001 is a touch switch which supplies a logic low when pressed, and has an array of 10 red and 10 green LED's to show status. Depending on whether the ClockAudio TS-001's green wire or pink wire is grounded determines whether the array will illuminate green or red. When ground is provided for the red LED the ground for the green LED is lifted and vise versa. This ensures the array does not illuminate both red and green at the same time. If all eight microphone channels on the Converge Pro are to be connected with their own ClockAudio TS-001, a total of 16 switchable grounds, or status pins, are required. Because the Converge Pro has only 8 user assignable status pins, an external relay is required.

» NOTE: The four microphone channel Converge Pro 840T contains 8 user programmable status pins, two for each microphone, on Control Port A. Because of this a relay is not required with the 840T. See the "Converge Pro 840T" section below.

CONVERGE PRO 88X AND 8I CONFIGURATION

EQUIPMENT LIST

- Converge Pro
- Clock Audio TS-001
- Relay (RDL ST-LCR)
- External 24 Volt DC Power Supply
- External 12 Volt DC Power Supply
- DB25 Male Connector
- Wire (22 Gauge Recommended

WIRING

The ClockAudio TS-001 wiring requirements are shown in Image 1.

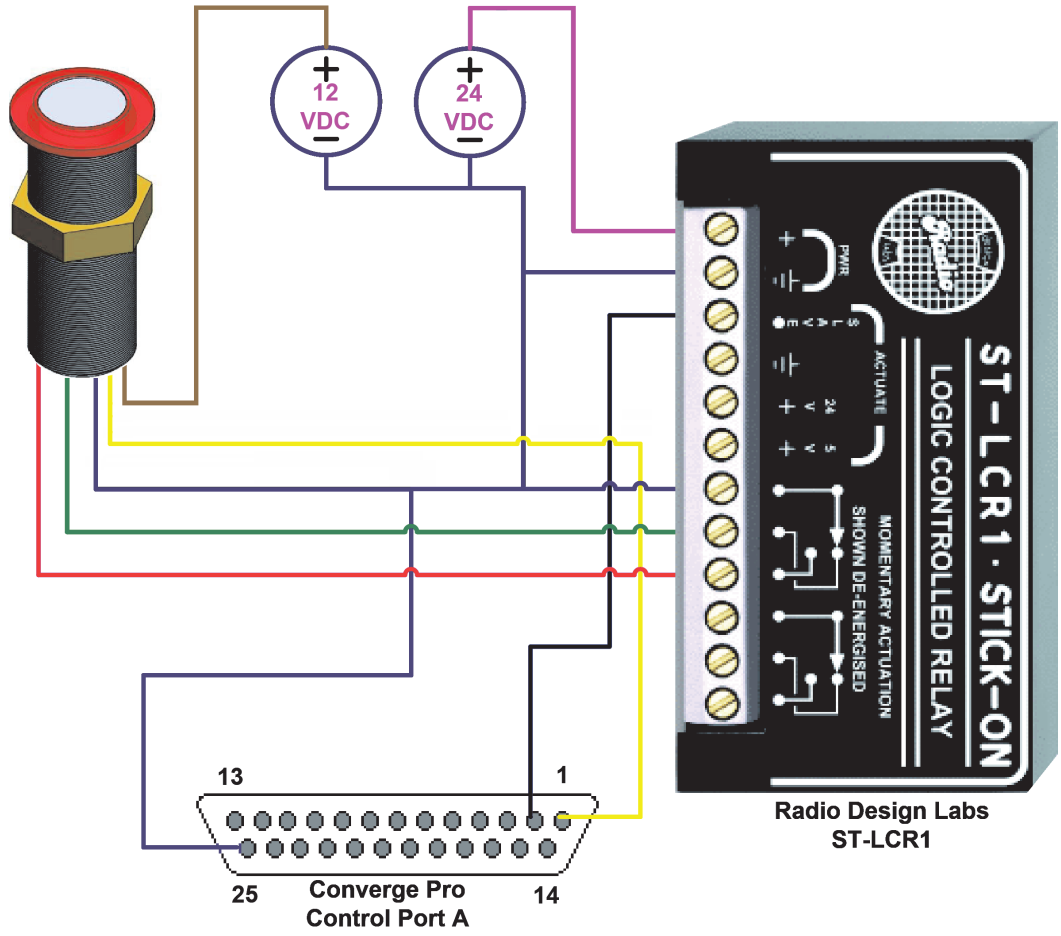

Image 1

Clock Audio Connections

SWITCH WIRE COLOR	FUNCTION
Brown	+ 12 VDC
Yellow	Open Collector Switch (Logic LOW when switch pressed)
Blue	Ground
Green	Grounded provides Green LED illumination
Red	Grounded provides Red LED illumination

FUNCTION

When the touch switch on the ClockAudio TS-001 is pressed, a contact closure is sent to the Converge Pro control pin. The Converge Pro mutes the microphone channel and sends out a “Mute On” response. With the “Mute On” response, the status pin is pulled to ground and the slave pin on the relay is grounded energizing the relay. When the relay is energized, the pink wire on the ClockAudio TS-001 is grounded and the red LED’s illuminate.

When the touch switch on the ClockAudio TS-001 is pressed again, a contact closure is sent to the Converge Pro control pin. The Converge Pro toggles the mute state of the microphone channel, un-muting the channel, sending out a “Mute Off” response. With the “Mute Off” response the first status pin is un-grounded or set to a high state. The slave pin on the relay is now de-energized. When the relay is de-energized the green wire on the ClockAudio TS-001 is grounded and the green LED’s illuminate.

CONVERGE PRO 88X AND 8I CONTROL/STATUS PROGRAMMING

The Converge Pro Control Status Port A must be programmed to control the muting of the microphone input and illuminate the LED’s in the halo. This programming may be done while connected to the unit or while offline and saved to your site file for future use.

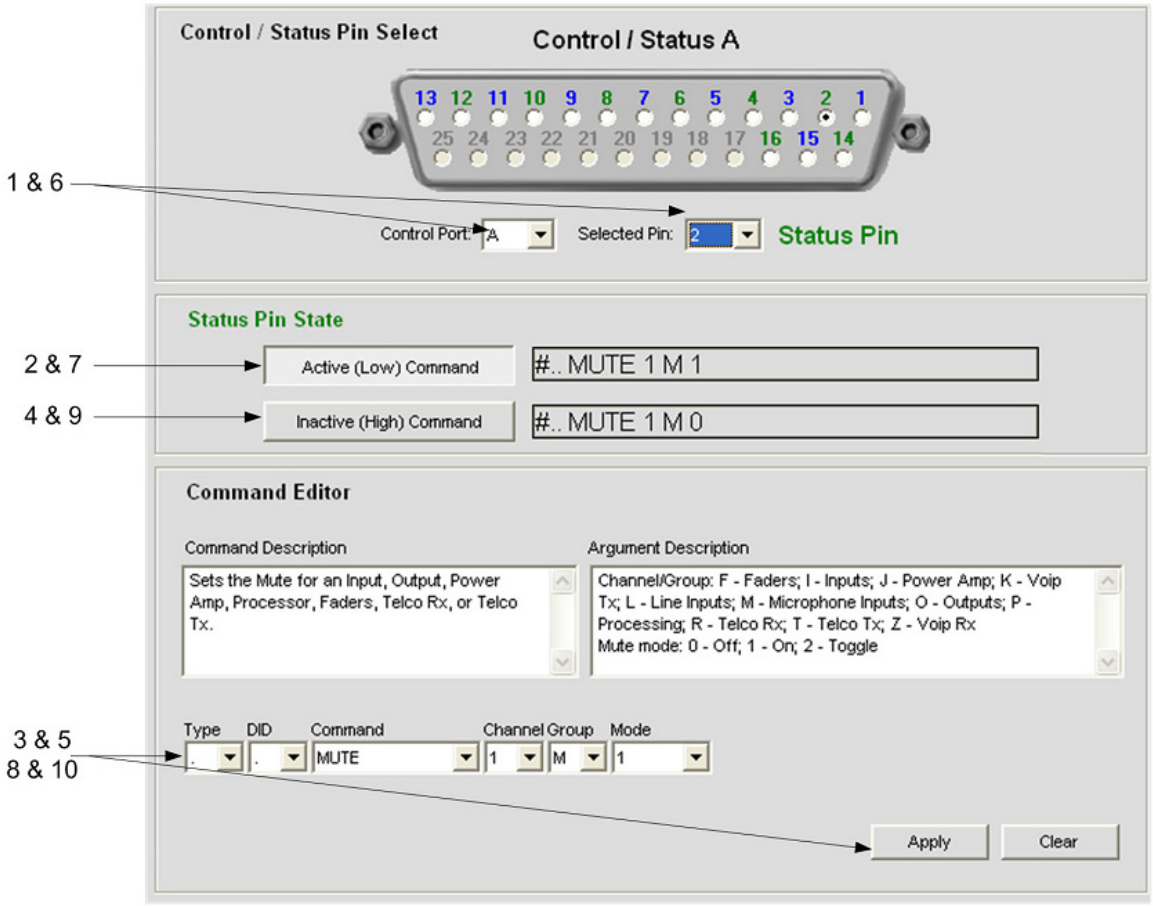

Image 2

To program Control Status Port A follow the steps below, referencing Image 2:

1. In the **Converge Console**, go to the **Control Tab** section and select **Control Port A** and select **Status Pin 1** from the respective drop-down list.
2. Click on the **Active (Low) Command** button.
3. In Command Editor, select the appropriate **Unit Type** and **DID** then choose command of **MUTE**, **Channel 1** and **Group M**:
    a. If the touch pad is to act as a toggle switch (press the switch once, the channel mutes, press it again and the channel un-mutes) choose **Mode 2**. Advance to step 6 below.
    b. If the touch pad is to act as a push to talk switch (press and hold the switch to unmute, release to mute), choose **Mode 0**.
    c. If the touch pad is to act as a push to mute switch (press and hold to mute, release to unmute), choose **Mode 1**.
    d. Click the **Apply** button located in the lower-right.

4. Click on the **Inactive (High) Command** button.
5. In Command Editor, select the appropriate **Unit Type** and **DID** then choose command of **MUTE**, **Channel 1** and **Group M**:
    a. If the touch pad switch is to act as a push to talk switch, choose **Mode 1**.
    b. If the touch pad switch is to act as a push to mute switch, choose **Mode 0**.
    c. Click the **Apply** button located in the lower-right.
6. Select **Control Port A** and **Select Pin 2**.
7. Click on the **Active (Low) Command** button.
8. In Command Editor, choose command of **MUTE**, **Channel 1** and **Group M**, and **Mode 1** from the pull-down lists. When microphone Channel 1's Mute state is ON, Pin 2 will be pulled low to ground and the relay will energize. The relay will switch the ground to the red wire, thus the red LED's illuminate.
9. Click on the **Inactive (High) Command** button.
10. In Command Editor, choose command of **MUTE**, **Channel 1** and **Group M**, and **Mode 0** from the pull-down lists. When microphone Channel 1's Mute state is OFF, Pin 2 will go high or float and the relay will de-energize. The relay will switch the ground to the green wire, thus the green LED's illuminate.

Repeat the above process for microphone Channel 2 using **Control Port A Select Pins 3** and **4**, microphone Channel 3 using **Control Port A Select Pins 5** and **6**, and so on for all 8 microphone channels.

CONVERGE PRO 840T CONFIGURATION

EQUIPMENT LIST

- Converge Pro 840T
- Clock Audio TS-001
- Relay (RDL ST-LCR)
- External 12 Volt DC Power Supply
- DB25 Male Connector
- Wire (22 Gauge Recommended)

WIRING

The ClockAudio TS-001 wiring requirements are shown in Image 3.

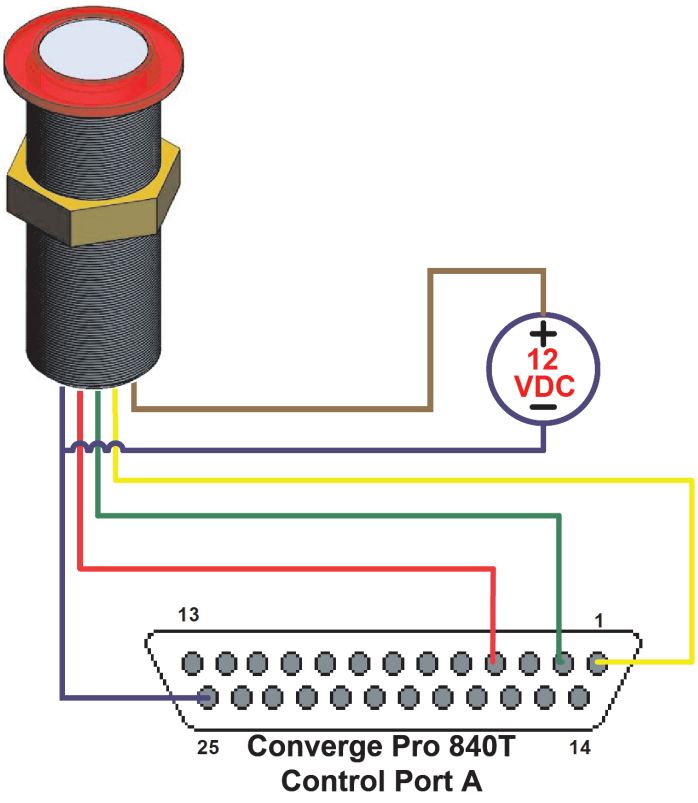

Image 3

Clock Audio Connections

SWITCH WIRE COLOR	FUNCTION
Brown	+ 12 VDC
Yellow	Open Collector Switch (Logic LOW when switch pressed)
Blue	Ground
Green	Grounded provides Green LED illumination
Red	Grounded provides Red LED illumination

FUNCTION

When the touch switch on the ClockAudio TS-001 is pressed, a contact closure is sent to the Converge Pro Control Pin. The Converge Pro mutes the microphone channel and sends out a "Mute On" response. With the "Mute On" response, the first status pin is pulled to ground and the second status pin releases. Thus the green LED's turn on and the red LED's turn off.

When the touch switch is pressed again on the ClockAudio TS-001, a contact closure is sent to the Converge Pro Control Pin. The Converge Pro toggles the mute state of the microphone channel, un-muting the channel, sending out a "Mute Off" response. With the "Mute Off" response, the first status pin releases and the second status pin is pulled to ground. Thus the green LED's turn off and the red LED's turn on.

CONVERGE PRO 840T CONTROL/STATUS PROGRAMMING

The Converge Pro Control Status Port A must be programmed to control the muting of the microphone input and illuminate the LED's in the halo. This programming may be done while connected to the unit or while offline and saved to your site file for future use.

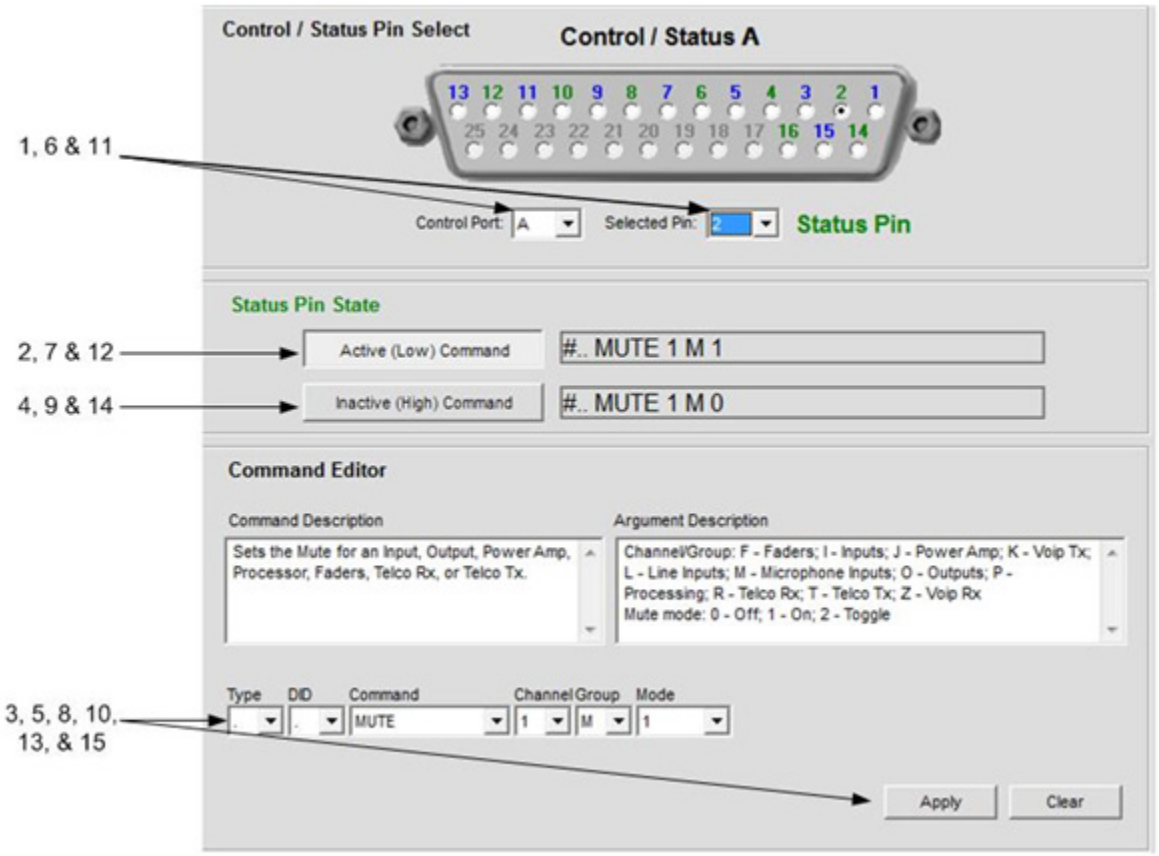

Image 4

To program Control Status Port A follow the steps below, referencing Image 4:

1. In the **Converge Console**, go to the **Control Tab** section and select **Control Port A** and **Selected Pin 1** from the respective drop-down lists.
2. Click on the **Active (Low) Command** button.

3. In Command Editor select the appropriate **Unit Type** and **DID** then choose command of **MUTE**, **Channel 1** and **Group M**:
   a. If the touch pad is to act as a toggle switch (press the switch once, the channel mutes, press it again and the channel un-mutes), choose **Mode 2**. Advance to step 6 below.
   b. If the touch pad is to act as a push to talk switch (press and hold the switch to un-mute, talk, release to mute) choose **Mode 0**.
   c. If the touch pad is to act as a push to mute (press and hold to mute, release to unmute) choose **Mode 1**.
   d. Click the **Apply** button located in the lower-right.
4. Click on the **Inactive (High) Command** button.
5. In Command Editor select the appropriate **Unit Type** and **DID** then choose command of **MUTE**, **Channel 1** and **Group M**:
   a. If the touch pad is to act as a push to talk switch, choose **Mode 1**.
   b. If the touch pad is to act as a push to mute switch, choose **Mode 0**.
   c. Click the **Apply** button located in the lower-right.
6. Select **Control Port A** and **Select Pin 2**.
7. Click on the **Active (Low) Command** button.
8. In Command Editor choose command of **MUTE**, **Channel 1** and **Group M**, and **Mode 0** from the pull-down lists. When microphone Channel 1's Mute state is OFF, Pin 2 will be pulled low to ground and the green LED"S will illuminate. Click the **Apply** button located in the lower-right.
9. Click on the **Inactive (High) Command** button.
10. In Command Editor choose command of **MUTE**, **Channel 1** and **Group M**, and **Mode 1** from the pull-down lists. When microphone Channel 1's Mute state is ON, Pin 2 will go high or float and the green LED's will turn off. Click the **Apply** button located in the lower-right.
11. Select **Control Port A** and **Select Pin 4**.
12. Click on the **Active (Low) Command** button.
13. In Command Editor choose command of **MUTE**, **Channel 1** and **Group M**, and **Mode 1** from the pull-down lists. When microphone Channel 1's Mute state is ON, Pin 10 will be pulled low to ground and the red LED"S will illuminate. Click the **Apply** button located in the lower-right.
14. Click on the I**nactive (High) Command** button.
15. In Command Editor choose command of **MUTE**, **Channel 1** and **Group M**, and **Mode 0** from the pull-down lists. When microphone Channel 1's Mute state is OFF, Pin 4 will go high or float and the red LED's will turn off. Click the **Apply** button located in the lower-right.

» Note: For Microphone 1, Control Pin 1 and Status Pins 2 and 4 will be used. For Microphone 2, Control Pin 5 and Status Pins 6 and 8 will be used. For Microphone 3, Control Pin 9 and Status Pins 10 and 12 will be used. For Microphone 4, Control Pin 13 and Status Pins 14 and 16 will be used.

HEADQUARTERS:

Salt Lake City, UT USA
5225 Wiley Post Way
Suite 500
Salt Lake City, UT 84116

Tel: 801.975.7200
Toll Free: 800.945.7730
Fax: 801.977.0087
E-mail: sales@clearone.com

EMEA
Tel: 44 (0) 1189.036.053
E-mail: global@clearone.com

APAC
Tel: 801.303.3388
E-mail: global@clearone.com

LATAM
Tel: 801.974.3621
E-mail: global@clearone.com

TechSales
Tel: 800.705.2103
E-mail: techsales@clearone.com

Technical Support
Tel: 800.283.5936
E-mail: tech.support@clearone.com