Model: AX-88
Device Type: Audio Switcher
Control System:

CRESTRON.

GENERAL INFORMATION	
SUMMARY:	Controls volume, input selection, bass, treble, subwoofer outputs, and delay.
GENERAL NOTES:	This device is equipped with a LAN port. However, only the RS-232 port provides full control of the AX-88. This module is for RS-232 control only. All inputs/outputs with names surrounded by square braces are optional, and do not need to have signals defined on them.
CRESTRON HARDWARE REQUIRED:	2-Series or 3-Series Processor with available RS-232 COM Port.
SETUP OF CRESTRON HARDWARE:	RS232 Baud: 9600 Parity: Note Data Bits: 8 Stop Bits: 1 Flow Control: None
AX-88 SETUP:	For standard setup, all DIP switches on the back of the AX-88 should be in the On position. See manual for other possible configurations. *ID must be 0 (Switches 1-5 "On")*
CABLE:	CNSP-121

CONTROL		
From_Device	S	Serial information returned from device via a 2-way com port. This must be connected as two-way communication is required.
Mute-1 through **Mute-8**, **Mute-All**	D	Mutes the corresponding output as long as the input is high. When the input goes low, audio resumes. High/1 (rising edge) = Mute output Low/0 (falling edge) = Resume output. Mute-All affect all outputs simultaneously.
Mute-On-1 through **Mute-On-8**, **Mute-On-All** **Mute-Off-1** through **Mute-Off-8** **Mute-Off-All**	D	Pulse to mute or unmute the corresponding outputs. High/1 (rising edge) = Mute/unmute; Low/0 = No effect
Src-for-out-1 through **Src-for-out-8**, **Src-for-all**	A	Selects the input to be switched to the corresponding output. Valid values are 0 - 8d. 0d = No source. Src-for-all affects all outputs simultaneously.
Volume-1 through **Volume-8**, **Volume-All**	A	Sets the volume level of the corresponding output. Valid values are 0% (-78.5db) to 100% (0db) Volume-All affects all outputs simultaneously.
Volume-Up-1 through **Volume-Up-8**, **Volume-Up-All** **Volume-Down-1** through **Volume-Down-8, Volume-Down-All**	D	Pulse to raise or lower the volume level of the corresponding outputs. These inputs incorporate a press-hold functionality where the volume will continue to raise/lower as long as the input is high.
Subwoofer-1 through **Subwoofer-8**, **Subwoofer-All**	A	Sets the subwoofer level of the corresponding output. (150 Hz lowpass filter) Valid values are 0% (-37.5db) to 100% (0db) Subwoofer-All affects all outputs simultaneously.

CONTROL		
Subwoofer-Up-1 through **Subwoofer-Up-8**, **Subwoofer-Up-All** **Subwoofer-Down-1** through **Subwoofer-Down-8, Subwoofer-Down-All**	D	Pulse to raise or lower the Subwoofer level of the cor-responding outputs. These inputs incorporate a press-hold functionality where the Subwoofer will continue to raise/lower as long as the input is high.
Bass-1 through **Bass-8**, **Bass-All**	A	Sets the bass level of the corresponding output rela-tive to 50%. A value of 50% signifies a flat bass level corresponding to 0db. Valid values are 0% (-14db) to 100% (+14db). Inputs default to 50% (0db) and can be left undefined. Bass-All affects all outputs simultaneously.
Bass-Up-1 through **Bass-Up-8**, **Bass-Up-All** **Bass-Down-1** through **Bass-Down-8, Bass-Down-All**	D	Pulse to raise or lower the Bass level of the corre-sponding outputs. These inputs incorporate a press-hold functionality where the Bass will continue to raise/lower as long as the input is high.
Treble-1 through **Treble-8**, **Treble-All**	A	Sets the treble level of the corresponding output rela-tive to 50%. A value of 50% signifies a flat treble level corresponding to 0db. Valid values are 0% (-14db) to 100% (+14db). Inputs default to 50% (0db) and can be left undefined. Treble-All affects all outputs simultaneously.
Treble-Up-1 through **Treble-Up-8**, **Treble-Up-All** **Treble-Down-1** through **Treble-Down-8, Treble-Down-All**	D	Pulse to raise or lower the Treble level of the corre-sponding outputs. These inputs incorporate a press-hold functionality where the Treble will continue to raise/lower as long as the input is high.
Delay-1 through **Delay-8**, **Delay-All**	A	Sets the Lip Sync delay of the corresponding output. Valid values are (AX-88 adjusts in increments of 5): 0d = 0ms (no delay) to 1000d = 1000 ms (1 sec delay.) Delay-All affects all outputs simultaneously.

CONTROL

Delay-Up-1 through **Delay-Up-8**, **Delay-Up-All** **Delay-Down-1** through **Delay-Down-8, Delay-Down-All**	D	Pulse to raise or lower the Delay level of the corresponding outputs. These inputs incorporate a press-hold functionality where the Delay will continue to raise/lower as long as the input is high.
Poll-Mute, Poll-Src-For-Output, Poll-Volume, Poll-Subwoofer-Volume, Poll-Bass, Poll-Treble, Poll-Delay	D	The feedback outputs are updated when changes are made from the inputs on this module. However, the AX-88 does not provide feedback when changes are made from its front panel. If you want to keep the control system in sync with the front panel of the AX-88, you may use these inputs to poll Mute Status, Volume Level, Source For Output, etc., periodically as needed.

FEEDBACK

To_Device	S	Serial information sent to device via a 2-way com port.
Mute-1_Fb through **Mute-8_Fb**	D	Indicates the current mute status for the corresponding output. The output remains high as long as mute is active. When low, this indicates audio has resumed. High/1 = Mute is On. Low/0 = Mute is Off.
Src-for-out-1_fb through **Src-for-out-8_fb**	A	Reports the currently active source for the corresponding output.
Volume-1_fb through **Volume-8_fb**	A	Reports the volume level as a percentage from 0% to 100%.
Subwoofer-1_fb through **Subwoofer-8_fb**	A	Reports the current subwoofer level of the corresponding output.
Bass-1_fb through **Bass-8_fb**	A	Reports the bass level of the corresponding output relative to 50%.
Treble-1_fb through **Treble-8_fb**	A	Reports the treble level of the corresponding output relative to 50%.
Delay-1_fb through **Delay-8_fb**	A	Reports the Lip Sync delay of the corresponding output 0 - 1000ms.