

**Partner:** L-Acoustics  
**Model:** LA4 / LA8 / LA2Xi / LA4X / LA12X  
**Device Type:** Amplified Controller (Basics)



## GENERAL INFORMATION

<b>SIMPLWINDOWS NAME:</b>	L-Acoustics Amplified Controller Basics
<b>CATEGORY:</b>	MULTI-CHANNEL AUDIO AMPLIFIER
<b>VERSION:</b>	V3.2.1
<b>SUMMARY:</b>	The module provides a selection of control functions via TCP/IP.
<b>GENERAL NOTES:</b>	<p>This module is for the control of LA4, LA8, LA2Xi, LA4X and LA12X Amplified Controllers.</p> <p>Each Amplifier to be connected and controlled will require one complete module assigned to it. Each module should therefore use unique digital, analog and serial joins. The simplest way of achieving this is to use a unique prefix which identifies the amplifier such as AMP1_MUTE and AMP2_MUTE.</p>
<b>CRESTRON HARDWARE REQUIRED:</b>	C3ENET, 3-Series Processor, 4-Series Processors
<b>SETUP OF CRESTRON HARDWARE:</b>	<p>The Crestron Control Processor's IP address usually is in the same subnet as the Amplified Controllers (typically 192.168.1.x/255.255.255.0, but other classes are possible, see amplified controller user manual).</p> <p>It is possible to use IP routing between the Crestron Control Processor and the Amplified Controllers, provided that the IP gateway parameter is correctly set on the Amplified Controllers.</p>
<b>VENDOR FIRMWARE:</b>	<p>LA4 / LA8 / LA2Xi / LA4X / LA12X minimum firmware version: V2.9.8</p> <p>Maximum firmware version: V2.11.x</p>
<b>VENDOR SETUP:</b>	Amplified Controller connected to the Ethernet Network

## SUPPORT CONTACT

<b>COMPANY NAME:</b>	L-Acoustics
<b>SUPPORT CONTACT:</b>	Application, Electronics / AV Control System
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## RELEASE NOTES

- **Version 3.2.1** (July 2021)

New features/Improvements

0007886	Support of 4-Series Control Processors
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Fixed issues

n/a

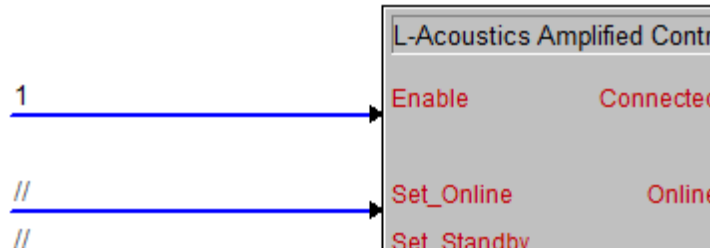
Versions History

- **Version 3.2.0** (October 2020)
  - Support of LA2Xi and firmware 2.11.x
- **Version 3.1.0** (April 2020)
  - Support of Firmware 2.10.x
- **Version 3.0.0** (February 2019)

Initial release

## GENERAL INFORMATION

- Standard signals "1" and "0"



It is possible to use the standard "1" signal on all digital inputs of the module, especially on the **Enable** input. This will have the effect to instantly connect the module at program startup (for **Enable** input), or send the associated command as soon as the module connection is established (for other digital inputs).

However, the stand signal "0" cannot be used to automatically trigger the falling edge of a command. Using "0" on an input has the same effect as commenting "//" the input.

## CONTROL

<b>Enable</b>	D	<p>The <b>Enable</b> signal is used to activate the functions of the module.</p> <p>As soon as this signal is HIGH, the module tries to connect to the amplified controller over TCP/IP. When the connection is successful, all other input signals are effective.</p> <p>When the signal is LOW, the TCP/IP connection gets closed, and input signals become ineffective.</p>
<b>Set_Online</b> <b>Set_Standby</b>	D	<p><b>Set_Online</b> and <b>Set_Standby</b> react to rising edges.</p> <p>Setting these signals HIGH turns the amplified controller into either Online state or Standby state. Of course, it cannot be in both states at the same time, so the latest rising edge will prevail.</p>
<b>Mute_Ch1</b> <b>Mute_Ch2</b> <b>Mute_Ch3</b> <b>Mute_Ch4</b>	D	<p><b>Mute_Ch[X]</b> react to rising edges.</p> <p>Push these signals to mute the individual outputs of the amplified controller.</p>
<b>Unmute_Ch1</b> <b>Unmute_Ch2</b> <b>Unmute_Ch3</b> <b>Unmute_Ch4</b>	D	<p><b>Unmute_Ch[X]</b> react to rising edges.</p> <p>Push these signals to unmute the individual outputs of the amplified controller.</p>
<b>Master_Mute</b> <b>Master_Unmute</b>	D	<p><b>Master_Mute</b> and <b>Master_Unmute</b> react to rising edges.</p> <p>These signals have a different behavior than <b>Mute_All</b> and <b>Unmute_All</b>, because they don't act on channels that are already muted.</p> <p><b>Master_Mute</b> is muting all the unmuted channels. <b>Master_Unmute</b> is unmuting only the channels that were muted by <b>Master_Mute</b>.</p>
<b>Gain_Up</b> <b>Gain_Down</b>	D	<p><b>Gain_Up</b> and <b>Gain_Down</b> react to rising edges.</p> <p>Pushing these signals raises/lowers all channels' gain value by <math>\pm 1.0\text{dB}</math>. If one of the channels' gain value is reaching the boundaries of <math>-60\text{dB}</math> or <math>+15\text{dB}</math>, then the gain won't increase/decrease any further (relative gain differences are preserved).</p>

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FEEDBACK		
<b>Connected_fb</b>	D	This signal is HIGH when the TCP/IP connection to the amplified controller is established, and the remote device is compatible with the module.
<b>Online_fb</b>	D	HIGH = the amplified controller is Online. LOW = the amplified controller is in Standby mode.
<b>Display_Lock_fb</b>	D	HIGH = the front panel controls are locked. LOW = the front panel controls are unlocked.
<b>Mute_Ch1_fb</b> <b>Mute_Ch2_fb</b> <b>Mute_Ch3_fb</b> <b>Mute_Ch4_fb</b>	D	HIGH = the output channel is muted. LOW = the output channel is unmuted.
<b>Limit_fb#</b>	A	<p>This analog signal is a bit-field representing the limiting status flag of each output channel:</p> <ul style="list-style-type: none"> <li>- bit1 (LSB) = output 1 limiting</li> <li>- bit 2 = output 2 limiting</li> <li>- bit 3 = output 3 limiting</li> <li>- bit 4 = output 4 limiting</li> </ul> <p>HIGH = the internal DSP is currently limiting the audio level for the channel  LOW = the internal DSP is not limiting the audio level for the channel</p>
<b>Clip_fb#</b>	A	<p>This analog signal is a bit-field representing the clipping status flag of each output channel:</p> <ul style="list-style-type: none"> <li>- bit1 (LSB) = output 1 clipping</li> <li>- bit 2 = output 2 clipping</li> <li>- bit 3 = output 3 clipping</li> <li>- bit 4 = output 4 clipping</li> </ul> <p>HIGH = the output level is reaching 0dBFS. Audio is clipping on the channel.  LOW = the output level is below 0dBFS.</p>
<b>Master_Mute_fb</b>	D	HIGH = Master Mute is active, all channels are muted. LOW = Master Mute is inactive, or some channels were manually muted/unmuted.
<b>Gain_Ch1#</b> <b>Gain_Ch2#</b> <b>Gain_Ch3#</b> <b>Gain_Ch4#</b>	A	<p>These analog signals represent the gain value of the output channels.  The full analog signal range (0d ~ 65535d) is used to represent the full gain range (-60.0 ~ +15.0dB) of the output channels, which means that:</p> <ul style="list-style-type: none"> <li>- <b>Gain_Ch[X]#</b> = 0d (minimum) <math>\Rightarrow</math> gain = -60.0dB (minimum)</li> <li>- <b>Gain_Ch[X]#</b> = 65535d (maximum) <math>\Rightarrow</math> gain = +15.0dB (maximum)</li> <li>- <b>Gain_Ch[X]#</b> = 52428d <math>\Rightarrow</math> gain = 0.0dB (unity)</li> </ul>
<b>Error_Present_fb</b>	D	HIGH = an error is present in the module. LOW = no error present in the module.
<b>Error_Message\$</b>	S	This signal gives details on the nature of the errors present in the module or the unit. If several errors occur, they are delimited by '\r' (\x0D) carriage return characters.

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## PARAMETERS

<b>IpAddress</b>	S	IP address of the Amplified Controller, for example "192.168.1.100".
		The IP address must be in the following ranges: <ul style="list-style-type: none"><li>- 10.0.0.1 – 10.255.255.254 (Class A)</li><li>- 172.16.0.1 – 172.31.255.254 (Class B)</li><li>- 192.168.0.1 – 192.168.255.254 (Class C)</li><li>- 100.64.0.1 – 100.127.255.254 (SAS)</li><li>- 169.254.0.1 – 169.254.255.254 (APIPA)</li></ul>

## TESTING

<b>OPS USED FOR TESTING:</b>	RMC3 v1.601.3857
<b>SIMPL WINDOWS USED FOR TESTING:</b>	4.1600.03
<b>CRESTRON DB USED FOR TESTING:</b>	205.0500.004.00
<b>DEVICE DB USED FOR TESTING:</b>	200.8500.002.00
<b>SAMPLE PROGRAM:</b>	Single Unit (Basic)