


LIVEWIRE GPIO OPERATION IN TIELINE CODECS

PURPOSE

The purpose of this tech note is to understand how Livewire GPIOs operate and how they are configured in Tieline codecs supporting Livewire.

INTRODUCTION

64 Livewire GPIO ports are supported and Livewire uses ports to activate GPIOs and ports 1-8 are configured with 5 GPIs and GPOs. Port 9-16 are configured with 3 GPIs and GPOs. These inputs and outputs are also mapped to 64 Tieline GPIs and GPOs as displayed in the **Livewire GPIO panel** in the AoIP Web-GUI.



Livewire GPIO																																					
#	Name	Address / Channel																																			
1	TL PORT 1	192.168.87.172/2	<table border="0"> <tr> <td colspan="2">Livewire Bit</td> <td colspan="2">Livewire Bit</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>●</td><td>●</td><td>●</td><td>●</td><td>●</td> <td>●</td><td>●</td><td>●</td><td>●</td><td>●</td> </tr> <tr> <td colspan="2">Tieline GPI</td> <td colspan="2">Tieline GPO</td> <td colspan="2"></td> <td colspan="2">Tieline GPI</td> <td colspan="2">Tieline GPO</td> </tr> </table>	Livewire Bit		Livewire Bit		1	2	3	4	5	1	2	3	4	5	●	●	●	●	●	●	●	●	●	●	Tieline GPI		Tieline GPO				Tieline GPI		Tieline GPO	
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2	TL PORT 2	101	<table border="0"> <tr> <td colspan="2">Livewire Bit</td> <td colspan="2">Livewire Bit</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>●</td><td>●</td><td>●</td><td>●</td><td>●</td> <td>●</td><td>●</td><td>●</td><td>●</td><td>●</td> </tr> <tr> <td colspan="2">Tieline GPI</td> <td colspan="2">Tieline GPO</td> <td colspan="2"></td> <td colspan="2">Tieline GPI</td> <td colspan="2">Tieline GPO</td> </tr> </table>	Livewire Bit		Livewire Bit		1	2	3	4	5	1	2	3	4	5	●	●	●	●	●	●	●	●	●	●	Tieline GPI		Tieline GPO				Tieline GPI		Tieline GPO	
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Livewire GPIO panel in the Toolbox Web-GUI displaying the first 10 GPIOs

ABOUT LIVEWIRE GPIO USE

In general Livewire devices think of GPIs as signals going to the network and GPOs as signals coming from the network. A Livewire port can be configured in 3 ways:

1. Port routing with Tieline's browser-based AoIP Web-GUI: GPI activity on a port will trigger the GPO of the port being configured. To do this enter the IP address of the device, followed by a forward slash and the port number.
2. Channel assignment with Tieline's browser-based AoIP Web-GUI: The GPIO port will follow the logic defined by a control surface (or the codec) through the use of the unique channel number loaded to a fader or other console functionality.
3. Pathfinder PC Server software can monitor and control GPIO pins on any of these ports using its event system. It can also route closures using the IP address and port number.

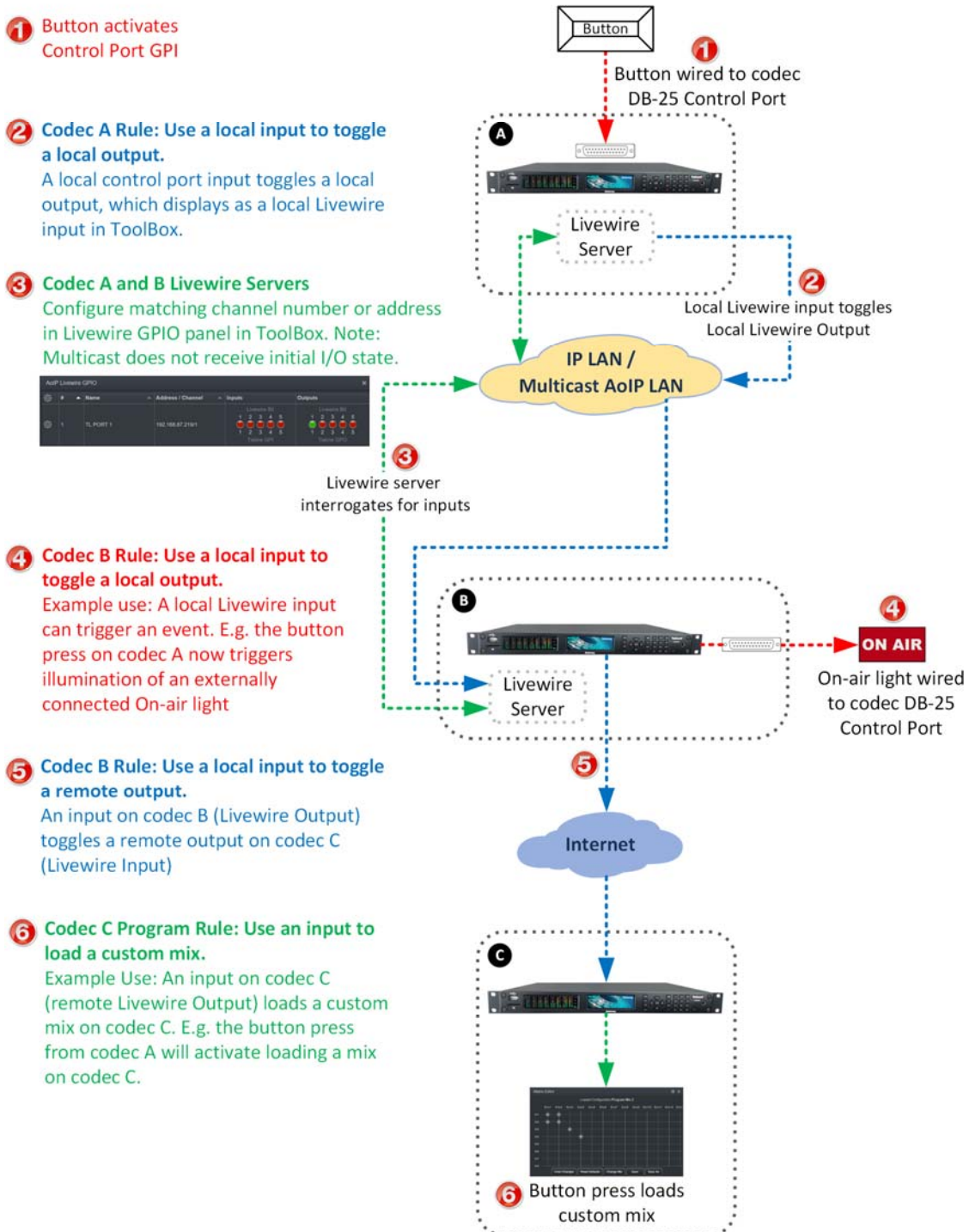
In the IP Address/Port example, the GPIO device opens a TCP connection to the routed GPIO device and monitors the GPI pins tripping its own GPO pins. In the Livewire Channel number example, GPIO messages are sent as multicast messages in the same way as multicast audio

traverses the network. A device monitors the GPIO multicast channel for closures tagged with the correct Livewire Channel number.

LIVEWIRE GPIO EXAMPLES

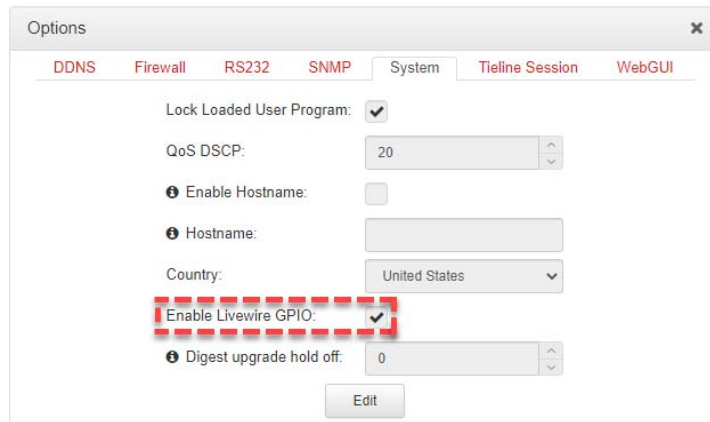
With Livewire, you can only read GPIOs, whereas you can read and set GPIOs. The following Livewire GPIO Rule examples assist in understanding how Livewire GPIOs integrate with Tieline codecs supporting Livewire.

Livewire GPIO Rule Examples

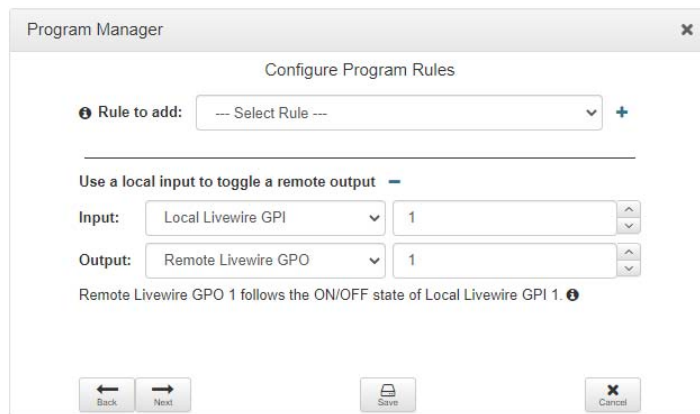


CONFIGURING A LIVEWIRE GPIO WITH THE CODEC WEB-GUI

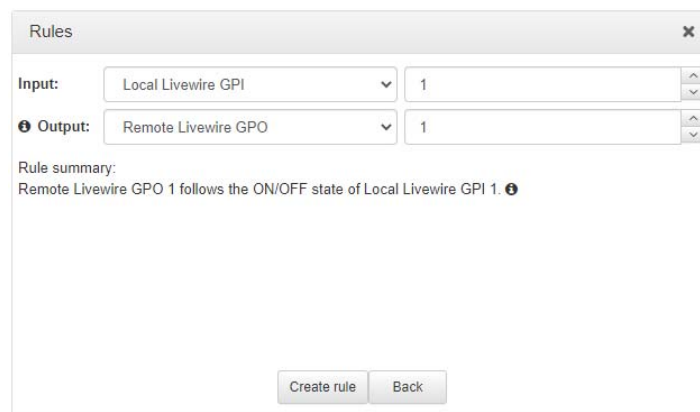
Livewire GPIOs can be configured using the Tieline HTML5 web-GUI. First, select the **Enable Livewire GPIO** checkbox in the **Options panel** of the HTML5 Toolbox Web-GUI to use Livewire GPIOs.



Program and stream level Livewire GPIO rules can be configured using the **Program Manager panel** when creating new programs.



The **Rules panel** can also be used to create Livewire GPIO rules for hardware or virtual IOs.



See the "Creating Rules" section in your codec user manual for more detailed information on configuring rules.