Audio Integration

Application Note

Introduction

There are various ways that audio can be utilised with a Pharos Control system:

- Audio Output – for “son et lumière” type projects
- Audio Input – for audio reactive lighting
- Linking to Remote AV systems

Audio Connections

The table shows the different audio capabilities offered by Pharos controllers.

	LPC 1, 2 and 4	LPC X S3	VLC S2	VLC+ M	VLC+
Audio input	-	Yes	Yes	Yes	-
Additional audio input via RIO A	Yes	Yes	Yes	Yes	Yes
Analogue audio output	-	Yes	Yes	Yes	Yes
Digital audio output (SPDIF)	-	Yes	Yes	Yes	Yes

Audio Output

The LPC X, VLC and VLC+ feature audio output capabilities, and it is possible to drag and drop audio files onto a timeline along with lighting effects. This way, lighting can be triggered at specific points in the music to synchronise with the audio on playback.

Furthermore, timelines can be set to “Music” mode. This changes the timeline’s time source to beats and bars, with configurable tempo and time signature, allowing you to easily program lighting to the beat of the music.

Audio and lighting are both configured in Pharos Designer software and uploaded to the controllers without the need for additional software or hardware.

Programming Audio Output

Audio can be used to create a “scripted” show with lighting effects triggered to suit the selected piece of music. Audio files can be included in project files and added to timelines uploaded to LPC X, VLC and VLC+ controllers to play back audio alongside lighting effects. Effects can be created and then set to change or trigger at specific points of the music, key changes or to perhaps synchronise with instrumental breaks.

Audio is added to an “Audio Row” within the timeline when the Timeline Audio project feature is enabled.

Effects that suit the music and changes in tempo are dragged onto a timeline. Audio and lighting timelines run in synchronization which ensures the audio and lighting effects are synchronized on output. Son et lumière type shows can be created and edited quickly as the lighting changes can be easily adjusted by moving them on the timeline. The show is often edited a number of times during programming to ensure lighting triggers are at the exact required point of the audio track. Flags can be dropped onto a timeline using a keyboard shortcut during audio playback. This enables trigger points to be suitably positioned. Flags can be used to align lighting effects or as trigger points for any trigger within Designer such as a scene or output.

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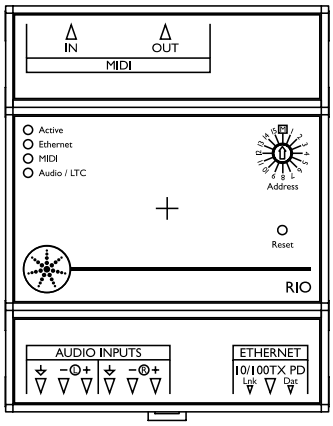
In this way shows can be scheduled to run automatically at a certain time of day or a specific date and time. Any trigger within Designer can be programmed to run a son et lumière show including a button press from a TPC or BPS, which can also show feedback to indicate that the show is running.

Son et lumière shows of this type require a level of creativity from the system programmer and although Pharos does streamline show creation by the use of simultaneous timelines creation of these type of shows can take time and require a lot of fine tuning.

Audio Input

With the addition of a RIO A (remote input / output audio) to any Pharos system, lighting effects can be programmed to be sound activated.



Audio Input Connections

The RIO A provides a 6-way rising clamp screw terminal for stereo audio input (Left and right +, - and ground).

Programming with Audio Input

There are a number of ways the audio can be set to interact with the lighting. Audio can be set to trigger an intensity, so that a fixture will pulse to the music, in the case of an RGB fixture each colour can be set to a different frequency so an ever-changing colour effect is created.

The RIO allows for up to 30 bands of spectrum analysis, so spectrum analyser or bar graph type effects can be created using multiple light points. Audio can also be used to manipulate a timeline onto which lighting and video-based effects have been dropped. In this way timeline playback will move backwards and forwards in response to the music.

The RIO A is a very flexible tool when sound activated effects are required. It has a stereo audio input, so any audio source played live into the device can create audio effects. It is suited to installations with multiple light points used to create multiple bar graph or intensity effects from any audio input. Powerful Pharos scheduling allows multiple types of effects to be set for different times of day, days of the week, events or even changing after a set period of time.

For lighting effects that change with the background music or perhaps move randomly to an audio track, RIO A is an ideal solution, but does require set up in Pharos Designer software to produce the required effects.

External Systems

Pharos controllers can integrate with a variety of other devices in a variety of ways, including:

- Ethernet communications – for triggering (in and out)
- Serial communications – for triggering (in and out)
- IO Modules – for integration with other specific systems (in and out)
- MIDI – for triggering (in and out)
- Timecode – for synchronising timelines with a system providing timecode
    - MIDI
    - Linear Timecode

Further information

Please contact support@pharoscontrols.com for further information.

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