

# Isadora + LanBox LC – Read Me

The introduction of Isadora 1.1b39 coincides with the introduction of special actors designed to communicate with the LanBox LC DMX lighting controller by CDS advanced technology BV (<http://www.lanbox.com>) Please read the information below to take advantage of these new features.

## User Actors

LanBox creator Fokko van Duin has created four User Actors that allow you to control the LanBox LC through it's MIDI and serial input connections.

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|-----------------------------|--|
| <b>LC Go (SER).iza</b>      | Sends various “go” commands to the LanBox via one of Isadora’s serial output ports |
| <b>LC Control (SER).iza</b> | Controls various LanBox parameters via one of Isadora’s serial output ports        |
| <b>LC Go (MID).iza</b>      | Sends various “go” commands to the LanBox via one of Isadora’s MIDI output ports   |
| <b>LC Control (MID).iza</b> | Controls various LanBox parameters via one of Isadora’s MIDI output ports          |

For the serial actors, you may specify the serial output port using the **port** input. For the MIDI actors, you may specify the MIDI output port using the **port** input. The remaining inputs to these actors should be self explanatory for LanBox users.

Note that you must correctly configure the serial and/or MIDI output ports before you can use these actors. Please refer to the Isadora 1.1 manual for more information. (<http://www.troikatronix.com/files/isadoramanual-v11.zip>)

**Reminder: do not drag the User Actors directly to your global User Actor folder.** Instead, use the Place User Actor command to add them to your patch. From that point, you may select the actors and use “User Actor to Global Toolbox” command to add these actors to your global toolbox.

## New Isadora Actors

There are two new actors added to Isadora to allow communication with the LanBox LC via a local area network (i.e., Ethernet) connection. LanBox Channels and LanBox RGB Out – they can be found in Group 7 of the Toolbox. Please refer to the documentation below for information on how to use these actors.

There is a set of demonstration files for the **LanBox RGB Out** actor in this distribution. Inside the “LanBox RGB Out Example” folder there is both an Isadora file and a file for LCEdit. To try demonstration, do the following:

- 1) Connect your LanBox LC to your computer using an Ethernet cable. (Refer to the LanBox documentation for information on how to do this.)
- 2) Open the file **CDS pixel studio (TCP).lcp** in LCEdit. This will establish communication with the LanBox. Show “Stage 2” which displays a grid of simulated RGB instruments.
- 3) Open the **LanBox RGB Out Demo.izz** in Isadora 1.1b39 (or later)
- 4) The first scene, labeled “LanBox RGB” will begin analyzing a portion of the video stream from Movie01.mov, and send those RGB values to the LanBox example file. You should see the pixels appear in the grid of instruments represented by “Stage 2”

## LanBox Channels

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Allows Isadora to control a LanBox LC connected to your computer via a local area network (i.e., Ethernet) connection.

The LanBox Channels actor allows you to set the level of a contiguous range of DMX channels on a LanBox LC lighting control unit. The meaning of some of the parameters are specific to the LanBox LC – please refer to the manual for more details.

### Input Properties

- **udp addr**: Specifies the UDP address to which the messages will be sent. This should match the UDP address specified for your LanBox in the LCEdit program.
- **udp port**: Specifies the UDP port number to which the messages will be sent. This should match the UDP address specified for your LanBox in the LCEdit program.
- **msg type**: can be set to either write or publish. publish equates to the **buffer broadcast** command (hex C9), write equates to the **buffer write** command (hex

CA). For more detailed information, please refer to the UDP documentation for the LanBox

- **buffer id**: specifies the LanBox buffer to which the channel data will be written.

When msg type is set to publish, you can use the following values

252 = DMX Input Buffer

253 = Analog/Switch Inputs

254 = Mixer Buffer

255 = DMX Output Buffer

When msg type is set to write you may specify a value of 1-64 to write directly into the LanBox's Layer Buffers (A through BK) or 254 to write directly into the Mixer Buffer.

- **chan offset**: determines the actual channels to be transmitted – essentially this number plus one. For example, when chan offset is set to 0, the dmx 1 input would send to channel 1, dmx 2 would send to channel 2, and so on. If the chan offset is 50, then dmx 1 would send to channel 51, dmx 2 to channel 52, etc.
- **channels**: determines the number of dmx channel inputs. Increasing this number will add more dmx n inputs, decreasing this number will remove them.
- **dmx 1, dmx 2, ...** : Use these inputs to specify the DMX values for each channel. (The number of available inputs is specified by the channels input property.) The actual channel number is depends on the setting of the chan offset input. If the chan offset is 50, then then dmx 1 would control channel 51.

## LanBox RGB Out

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Allows you to map the colors of a video stream to channels of a LanBox LC.

The LanBox RGB Out actor is specially designed to take advantage of lighting instruments that can produce RGB colors. This actor will map the color of specific areas within an incoming video stream to channels on a LanBox LC, allowing the colors of the video to control the color of the lighting. For each analyzed pixel, three channels will be sent to the LanBox, the first representing the red component of the pixel, the second the green component, and the third the blue component.

To use this actor, you must first specify which areas within the video stream will be analyzed and transmitted to the LanBox LC. To do this, begin by connecting a video stream to the video input of the LanBox RGB Out actor. It is a good idea to use a relatively low-resolution video – use the Scaler actor to reduce the size of the video clip if necessary.

**It is very important that you establish the resolution of the video input for this actor before you start setting the position of the rectangles.** Unlike most of Isadora, the position of the rectangles is specified using absolute pixels – not a percentage. So, if you specify the rectangle positions, and then change video resolution, you will most likely have to edit the rectangle sizes and locations again.

To edit the rectangles, double-click the LanBox RGB Actor. The following dialog will be shown.



To add a rectangle, click the “+” button

To remove a rectangle, click the “-” button

To select a rectangle, and show its inspector, click on the rectangle’s outline. A rectangle is green when it is selected, otherwise it is yellow.

After adding a new rectangle, or selecting an existing one, the “Rectangle Inspector” will appear at the bottom of the dialog. This allows you to adjust the size and position of the rectangle numerically. You can also move the currently selected rectangle using the arrow keys, or resize it by using the arrow keys while simultaneously holding down the shift key.

Note that, when a rectangle is selected, the DMX channels that will be sent to the LanBox are shown to the right of the Channel Range prompt at the bottom right of the inspector. The base channel is determined by the setting of the chan offset input property of the LanBox RGB Out actor. The total number of channels to be transmitted from a particular rectangle will equal the width times the height times 3 ( $W \times H \times 3$ ). So, a 4 x 3 rectangle will send 36 channels total.

For example, let’s say we have two rectangles – one that is 4 x 3 pixels (36 channels total), another that is 10 x 1 (30 channels total), and that the chan offset input of the actor is set to 50. The first rectangle will broadcast its RGB values to LanBox channels 51-86. The second rectangle would broadcast to LanBox channels 87-116.

You may also choose average all of the pixels under a rectangle down to three channels (i.e., a single RGB value). To do this, check the “Average to Three Channels” check box when a rectangle is selected.

You can change the magnification of the image within the dialog box using the “Magnification” popup. You may also turn off the video preview by unchecking the “Preview” checkbox.

Once you have set up all of the rectangles click the OK button to store the new settings, or click Cancel to exit the dialog without saving the edited rectangles.

## Input Properties

- **video in:** receives the video stream to be analyzed.
- **udp addr:** Specifies the UDP address to which the messages will be sent. This should match the UDP address specified for your LanBox in the LCEdit program.
- **udp port:** Specifies the UDP port number to which the messages will be sent. This should match the UDP address specified for your LanBox in the LCEdit program.
- **msg type:** can be set to either write or publish. publish equates to the **buffer broadcast** command (hex C9), write equates to the **buffer write** command (hex CA). For more detailed information, please refer to the UDP documentation for the LanBox
- **buffer id:** specifies the LanBox buffer to which the channel data will be written. When msg type is set to publish, you can use the following values
  - 252 = DMX Input Buffer
  - 253 = Analog/Switch Inputs
  - 254 = Mixer Buffer
  - 255 = DMX Output Buffer

When msg type is set to write you may specify a value of 1-64 to write directly into the LanBox's Layer Buffers (A through BK) or 254 to write directly into the Mixer Buffer.

- **chan offset:** determines the actual channels to be transmitted. See the explanation of the rectangle editor above to understand how the chan offset is used when sending information to the LanBox LC.