HugBag Quick Start Guide

When you click on the HugBag desktop shortcut, two programs will open, Hariless MIDI and Ableton Live 9. For normal operation, follow the following steps. Each step is illustrated with a red number in Figure 1. In Live, the Mood controller is at the right of the MultiCamMidiController, not at the bottom.

Figure 1. Screenshot of the Ableton Live Window. Normal Operation steps are depicted with red numbers. In Live, the Mood controller is at the right of the MultiCamMidiController, not below.

1. Check that the infra-red camera is selected (3:ir) and click open
2. Click recapture background
3. Check that the inner surface image is constant and showing the inner surface of HugBag, and that both the post-processing and blob-detection image are black.
4. Press spacebar to start the soundtracks, check that there are green bars of sound are shown in the tracks
5. Check that the MIDI Out checkbox for the blob control parameters is checked and that the correct MIDI control numbers are displayed correctly

6. Modify the initial mood of the HugBag using the gray dot over the MoodWheel
7. Check that the MIDI Out checkbox for the mood control parameters is checked and the correct MIDI control numbers are displayed correctly
8. Start interacting with HugBag

TroubleShooting:

Sound is fine, but no lights are visible when interacting with HugBag

If there is no lights output, it can be due to faulty power supply, or faulty communication with arduino.

1. Check that the 12 V power supply for the LEDstrip is connected to the mains and connected to the LEDstrip.
2. Check that the communication between Arduino and the computer are correct by checking the following settings in Hairless MIDI.

Hairless MIDI handles the communication between Ableton Live and Arduino, which controls the lightning of HugBag (Figure 2).

The first thing to check is that when Hairless MIDI opens:

- "Serial <->MIDI Bridge On" is checked
- Serial Port has either "USB Serial Port (COMXX)" selected, or "Arduino Leonardo (COMXX)" Selected.
- MIDI In has "loopMIDI Port" selected.

If those three parameters are correct, most likely the communication with the Arduino board will have no problems.
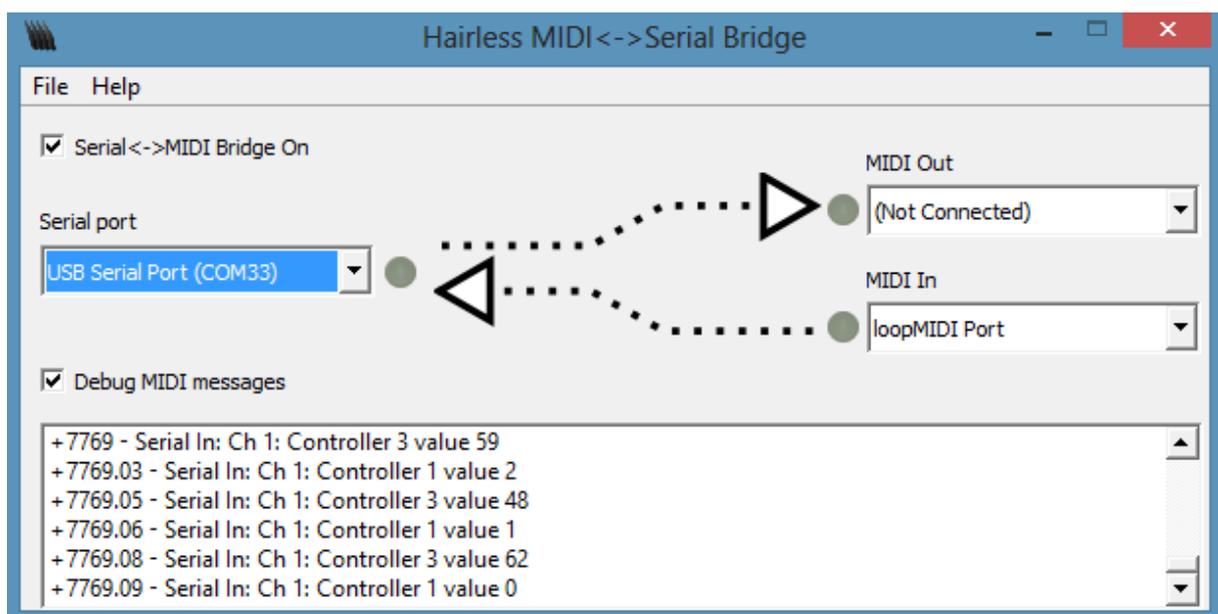

Figure 2. Hariless MIDI program window. Check that settings look like this figure.

If those parameters were fine, but interacting with HugBag does not cause light output, then check that the gray dots next to "USB Serial Port" and "MIDI In" light up in green while interacting with HugBag. If there is no change in the gray dots while interacting with HugBag, then there is no communication, try unchecking the "Serial <->MIDI Bridge On" checkbox, disconnecting and reconnecting the USB cable marked as speakers and checking the "Serial <->MIDI Bridge On" box again.

If the gray dots light up, then communication is happening, but maybe the messages are not formatted correctly. Turn on the checkbox "Debug MIDI messages" and check that "Serial In: Ch 1: Controler X value Y" messages appear while interacting. If a different message appears, then try unchecking the "Serial <->MIDI Bridge On" checkbox, disconnecting and reconnecting the USB cable marked as speakers and checking the "Serial <->MIDI Bridge On" box again.

Sound coming from the computer instead of the HugBag

Most probably, the audio configuration in Ableton Live 9.0 got desconfigured.

1. Click on Options->Preferences
2. In the preferences window, click on the "Audio" tab
3. In the Audio output device select the "Speakers (USB audio XX) DX" option. This text vary from computer to computer, but just select the one with USB and DX and it will be OK.
4. Close the preference window, now the audio should come from the HugBag.

The sound flickers and is not constant when keeping HugBag dented

This can happen if communication between the Kinect sensor and Ableton Live is not well synchronized. You can observe that the inner surface image disappears and reappears. This can happen with the infra-red (ir) camera for some reason, it does not happen with the depth or rgb cameras. Anyway, if this happens, just follow the button sequence as depicted in Figure 3. First "close" the Kinect communication (1), change the "3:ir" camera to "1:depth" (2), open the communication (3), close the communication again (1), change the Kinect camera to "3:ir" again (2) and open communication again (3).
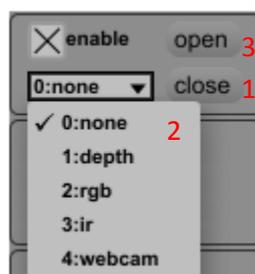

Figure 3. Kinect communication buttons to close (1), open (3), or change (2) the Kinect camera.

HugBag suddenly starts sounding by itself

Maybe it is deflating a little bit, or the lightning conditions have changed.

In any case, just click on the "recapture backgnd" checkbox of the MultiCamMidiController device (Figure 4). If after recapturing background, the problem persist, then adjust threshold as explained in the next section.
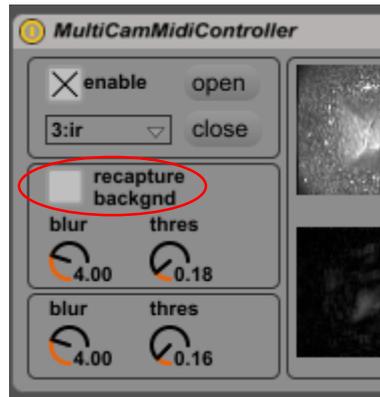
Figure 4. Location of the recapture backgnd function to reduce HugBag random activation.

HugBag is not sensitive enough or is very sensitive

This might be a thresholding problem. There are two types of thresholds in the MulitCamMidiController device: Pre-processing and Post-processing.

Figure 5. Pre-processing (1) and post-processing (2) blurring and thresholding parameters

The first one (pre-processing) is the most important, it happens before background removal and is mainly used to reduce noise and adjust HugBags sensitivity. The post-processing one happens just before blob detection and is used mainly to get rid of small non-collocated blobs by post-blurring the image and adding another post-blur small threshold

If HugBag is not sensitive enough, decrease the pre-processing threshold, if is too sensitive, increase the pre-processing threshold.

If HugBag sensitivity is fine, but blobs appear in other places apart from where the interaction is happening, increase the post-processing threshold. Increasing this threshold too much will also reduce sensitivity, so be careful.

The recommended ranges for both thresholds for the 3:ir camera are:

	Min value	Max value
Pre-processing blur	3.0	10.0
Pre-processing threshold	0.15	0.25

Post-processing blur	1.0	5.0
Post-processing threshold	0.10	0.20

Table 1. Min and Max recommended values for blur and threshold pre-processing and post-processing parameters