

Moduloop User Manual

SDP24 Team 28

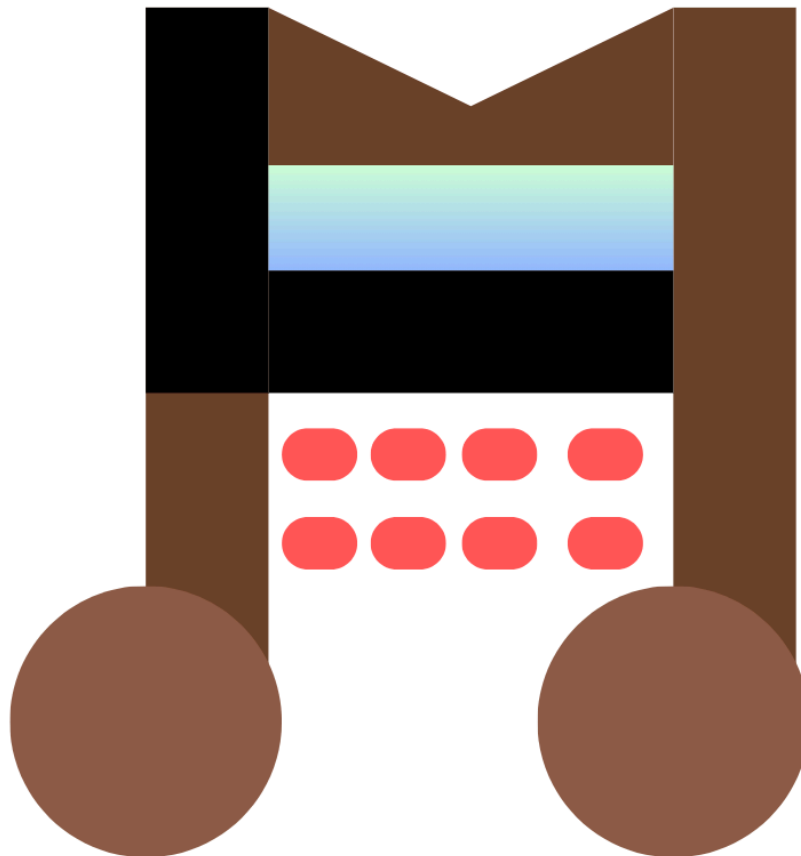


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Introduction:

ModuLoop is a music sequencer that allows a user to create musical loops while pulling from both built-in and user-uploaded sounds. The device has a very user-oriented design with LEDs and buttons are user-interactable. Below is an image of the device. This shows the physical layout of the system that the user will interact with.

This device was created as a senior design project through the University of Massachusetts Amherst. Ryan Gordon, Conor Curtin, Evan Roveilli, and Shawn Colby designed this device from the ground up over the course of two semesters. We hope you enjoy using ModuLoop!



Legend	
	1. Measure Matrix
	2. Palette
	1. HPF-High Pass Filter
	2. LPF - Low Pass Filter
	3. Tempo
	4. Vol-Volume
	1. Back
	2. Up
	3. Down
	4. Select

1. Sounds

The Sounds menu contains all sounds available on the ModuLoop. There are two types of sounds present: custom sounds and MIDI sounds. Once a specific sound is selected, a prompt will appear that tells the user to assign it to the palette.

a. Custom sounds

The Custom sounds menu contains all of the sounds on the ModuLoop device uploaded by the user. The screen then prompts the user to select a palette button to assign the sound to.

b. MIDI sounds

The MIDI sounds are an array of sounds based on the General MIDI library.

i. Percussion Instrument

To access percussion sounds, the user can select “Percussion Instrument”, which will show them all the sounds present. Each of these sounds can be selected and assigned to the palette.

ii. Melodic Instrument

The melodic sounds are accessible from “Melodic Instrument”. Here, the user can select their instrument followed by the octave and note desired before being prompted to assign to the palette.

2. Effects

This menu contains effects that modify how the ModuLoop loops through each measure. They are used by selecting them in the menu, assigning them to the palette, and then holding down the assigned palette button to use them. Once the effect button is released, the measure goes back to looping how it was previously. Here is a list of effects the user can choose from:

a. Repeat return

While holding, the device repeats the step the effect was held on, once released the measure starts back at the beginning of the measure.

b. Repeat continue

While holding, the device repeats the step the effect was held on, when released the measure continues playing from where it left off.

c. Reverse

While holding, the measure starts playing backwards. This means the steps play from right to left, bottom to top. When released the measure returns to looping normally which is left to right, top to bottom.

- d. **Echo**
While holding, the device repeats the step the effect was held on while the volume of the sounds decreases to silent. When released the measure continues where it left off.
- e. **Mute**
While holding the measure LEDs still cycle normally but the sounds are all muted. When released the sounds continue to play again.
- f. **Scratch**
While holding, the device repeats between the step the effect was held on and the step before it. Once released the measure continues playing from where it left off.
- g. **Double step**
While holding, each step is played twice in the same interval as one step. Once released the measure goes back to playing normally.

3. Measures

The measures menu is where the user can edit the measures present in each track.

- a. **Add Measure**
This section allows the user to add an empty measure to their current track, which is chained to the measures already present.
- b. **Delete Measure**
This section allows the user to delete a specific measure from a track.
- c. **Swap Measure**
This section allows the user to reorder the measures in their current track.
- d. **Set # Beats**
This feature allows a user to set the number of beats present in their current measure. The user can select from one to four beats.
- e. **Set # Global Steps**
This feature allows a user to set the number of steps present in every beat in their current measure. The user can select from one to six steps, and the timing of the system is updated to be true to the set tempo.

f. **Set # Local Steps**

This feature allows a user to set the number of steps present in a specific beat in the current measure. The user can select from one to six steps, and the timing of the system is updated to be true to the set tempo.

g. **Load Measure**

This feature allows the user to add any measure that is in a saved track to your current track.

4. Tracks

The tracks menu is where the user can access and manipulate their current track.

a. **Save Track**

Save track is where a user can save their current track to the SD card. When selecting this option, the user is then prompted to enter a three-letter name for their track. Saving a track saves all associated measures as well as the palette assignments set by the user.

b. **Load Track**

Load track is how a user can access previously saved tracks. This menu shows all tracks present on the SD card by the name they were saved to. These can be selected by the user, which populates the measure and palette assignments into the system to be played.

c. **Delete Track**

Delete track allows a user to delete an entire track from the device. This feature does not have an undo button, so only select this if you are sure you wish to delete your track.

d. **Load Palette**

This feature allows a user to load a saved palette from any saved track onto their current palette.

e. **New Track**

This feature allows a user to reset the workspace they are currently in, resetting all sounds on the measure matrix. Tracks that are saved are not deleted when this is completed.

5. Delete

Delete is where a user can remove one or more sounds from their track.

a. **Clear last sound**

With this feature, a user can remove the last sound they applied to their measure/track.

b. **Clear step**

With this feature, a user can remove all sounds from a specific step in their track. This does not remove the step from the track.

c. **Clear measure**

With this feature, a user can remove all sounds from their track. This does not remove measures from the track.

6. Play/Pause

Play/Pause allows the user to stop the measure from looping and start it looping again when desired. If the measure is playing, “(Pause)” will be displayed. When selected, the LEDs stop cycling and the measure stops playing. When the measure is paused, the menu will show “(Play)” and if selected the LEDs continue looping and the measure starts playing again.