JamLoopy for Atari 2600

JamLoopy v0.7 by Zden Hlinka - © Satori 2020-2022
Website: satori.sk/jamloopy - feedback / bug reports / cartridge orders: zden@satori.sk


Special thanks to Sven Arweiler, Peter Holly, and everyone
who helped with the development and the testing.
Cover art by Eniac.

1. Introduction

The application is 64 steps note-looper. Notes are represented musically or treated as raw data for VCS's audio registers. Users can choose which row they treat as notes (Note Synth) or audio register data (Glitch Synth). There are three variations of Glitch Synth and one for Note Synth.
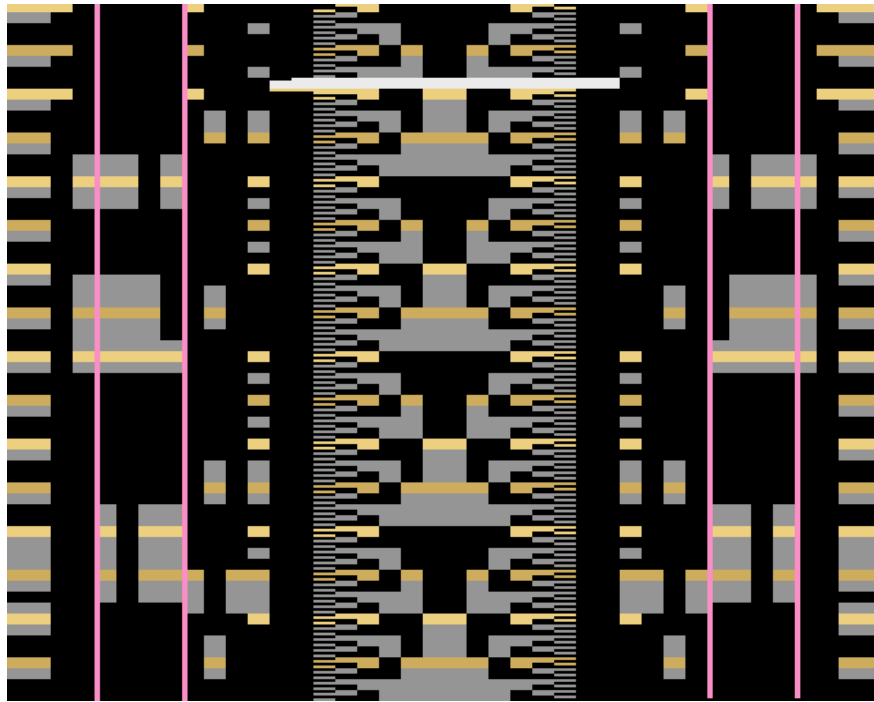
2. Hardware Requirements

Console: Atari VCS PAL or NTSC
Cartridge: Uno-2600 or Harmony cartridge for loading custom ROMs
If you like the JamLoopy app, you can order an original cartridge release preconfigured for PAL or NTSC.
Left port: Joystick
Right port: Keypad (keyboard with 12 buttons)
There is also a dedicated controller **JamLoopy Ctrl**, made by Sven Arweiler:
https://github.com/sarweiler/jamloopy-ctrl

3. Intro Screen

During the intro screen of JamLoopy, you select your desired starting BPM.
You can choose round BPMs or compatible with the Synthcart app.

Select your desired BPM with a number on the keypad, or choose **#** for non-exact BPM control.

keypad	BPM
1	110
2	120
3	130
4	140
5	150
6	160
7	70
8	80
9	90
0	100
#	non-exact BPM
*	double the current BPM

If you want to select BPMs compatible with the Synthcart app, press FIRE on the joystick first and then select the desired BPM on the keypad. Here is the table for BPMs:

keypad	BPM (PAL)	BPM (NTSC)
1	57.53	69.14
2	62.33	74.90
3	67.99	81.72
4	74.79	89.88
5	83.10	99.87
6	93.49	112.36
7	106.84	128.41
8	124.65	149.81
9	149.58	179.77
0	186.98	224.71
#	non-exact BPM	
*	double the	current BPM

3. Looper Layout
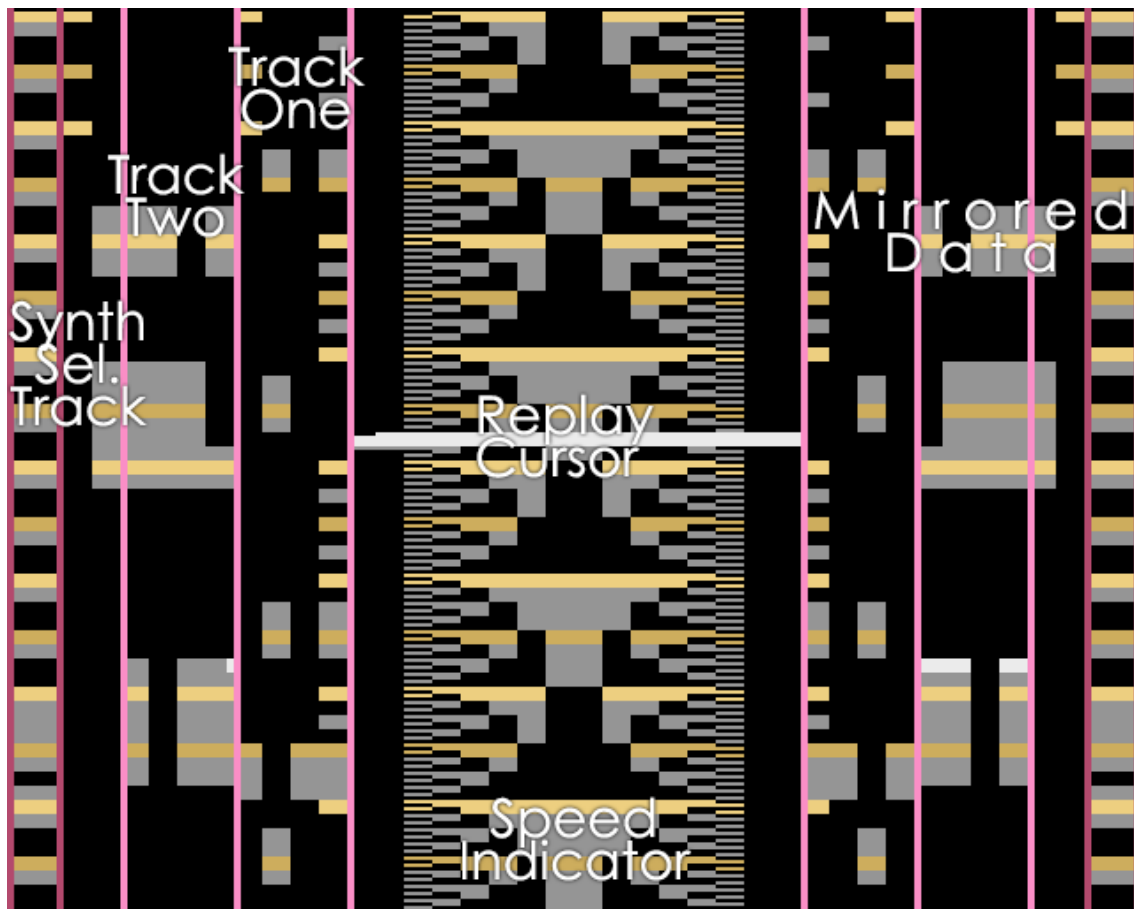
Tree columns represent (from left to right):

1. **Synth Selector** (2 bits; enter values 1..4 on the keypad)
2. **Track Two Note/Data** (4+1 bits)
3. **Track One Note/Data** (4+1 bits)

The Middle section of the layout displays a replaying cursor and speed indicator pattern.
The right side of the screen is a mirror copy of the left part.
An additional 1 bit for Track 1 and 2 is located next to the synth selector column (these bits encode the instrument set used).

4. Software Control

Joystick:

Up   - Play Mode: alter the speed in the backward direction / Edit Mode: move the cursor up
Down - Play Mode: alter the speed in the forward direction / Edit Mode: move the cursor down
Left   - force melodic synth while pressed
Right - force experimental synth while pressed
Fire   - Change glitch synth param (16 states)

Keypad:

1,**2**,**3**,**4**,**5**,**6**,**7**,**8**,**9** - Enters notes data

        0 - Empty note (clear current position for selected track)

        * - Shift current instrument notes on 1..9 keys mapping

        # - Toggle active instrument set

Instrument shift and active instrument set are color-coded to the track selection lines.

Console Switches:

|	
Select	- select column for edit
Col/BW	- toggle play/edit mode (**Col**=play; **BW**=edit)
Left difficulty	- background color change (**A**: turned OFF; **B**: turned ON)
Right difficulty	- jam switch: (**A**: note enter mode; **B**: jam mode enabled, no notes written)
Reset	- erase all tracks data
Fire+Reset	- erase current track data only
Keypad+Reset	- change different BPM (refer in "Intro Screen" section for speed tables)

If you want to select a different BPM while using Reset, hold (e.g., in JAM mode to preserve data) the BPM number on the keypad and hit RESET.

If you press # with Reset, you restart in old non-exact BPM mode from zero speed.
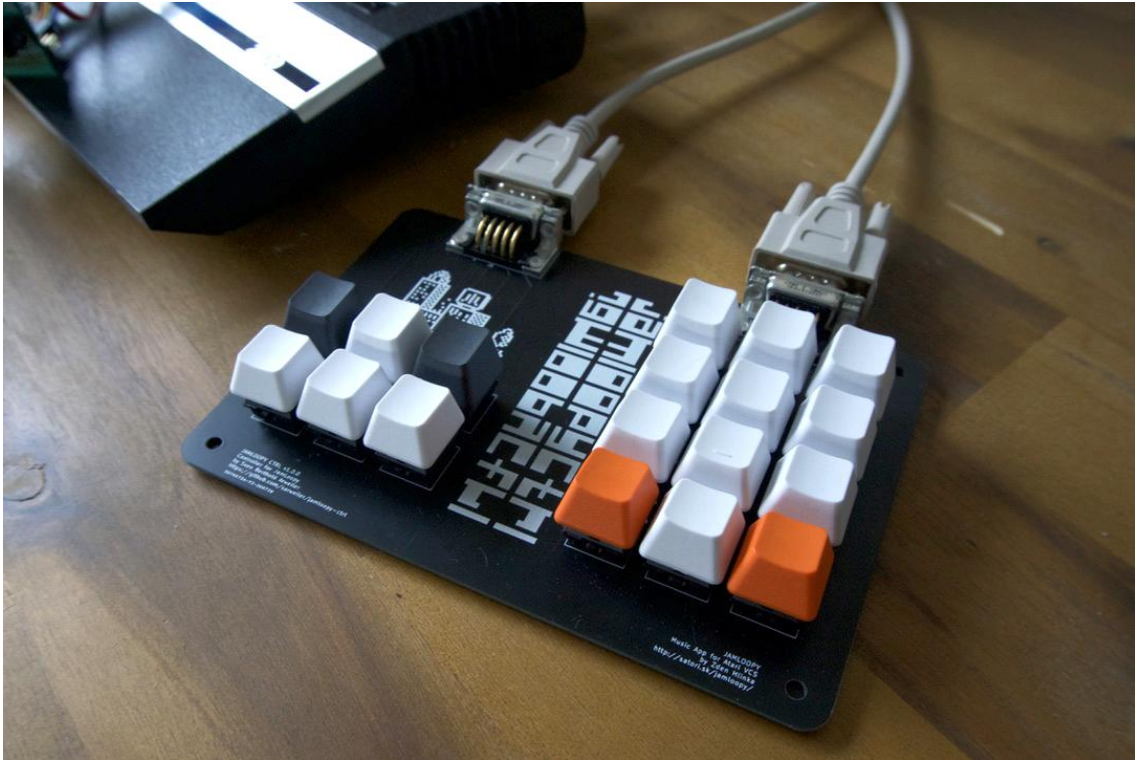
If you press * with Reset in both modes, you double the actual BPM!

Holding the FIRE button on the joystick while using RESET will clear just the selected track.
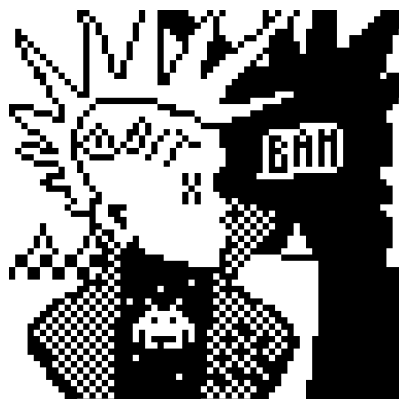
5. JamLoopy Ctrl and cartridge release

A great way to use JamLoopy is via the dedicated controller:

You can build it by yourself: https://github.com/sarweiler/jamloopy-ctrl.

If you wish to have an original cartridge of JamLoopy or receive PCB for JamLoopy Ctrl, write to zden@satori.sk.

5. Notes Mapping

Track One / Instrument 1 / Set 1	**Track Two / Instrument 1 / Set 1**
1 - b0 (bass) 2 - c1 (bass) 3 - d1 (bass) 4 - e1 (bass) 5 - g1 (bass) 6 - a1 (bass) 7 - b1 (bass) 8 - c2 (bass) 9 - e2 (bass)	1 - b0 (pitfall) 2 - c1 (pitfall) 3 - d1 (pitfall) 4 - e1 (pitfall) 5 - g1 (pitfall) 6 - a1 (pitfall) 7 - b1 (pitfall) 8 - c2 (pitfall) 9 - e2 (pitfall)
Track One / Instrument 1 / Set 2	**Track Two / Instrument 1 / Set 2**
1 - b1 (bass) 2 - c2 (bass) 3 - e2 (bass) 4 - g2 (bass) 5 - a2 (bass) 6 - b2 (bass) 7 - e3 (bass) 8 - g3 (bass) 9 - h3 (bass)	1 - b1 (pitfall) 2 - c2 (pitfall) 3 - e2 (pitfall) 4 - g2 (pitfall) 5 - a2 (pitfall) 6 - b2 (pitfall) 7 - e3 (pitfall) 8 - g3 (pitfall) 9 - h3 (pitfall)
Track One / Instrument 2 / Set 1	**Track Two / Instrument 2 / Set 1**
1 - b4 (square) 2 - c5 (square) 3 - d5 (square) 4 - e5 (square) 5 - f5 (square) 6 - d6 (square) 7 - f6 (square) 8 - hihat 9 - snare	1 - e3 (lead) 2 - f3 (lead) 3 - g3 (lead) 4 - a3 (lead) 5 - a#3 (lead) 6 - g4 (lead) 7 - a#4 (lead) 8 - hihat 9 - snare
Track One / Instrument 2 / Set 2	**Track Two / Instrument 2 / Set 2**
1 - f6 (square) 2 - hihat 3 - snare 4 - c2 (saw) 5 - d2 (saw) 6 - d#2 (saw) 7 - f#2 (saw) 8 - d#3 (saw) 9 - f#3 (saw)	1 - f6 (square) 2 - kick 3 - snare 2 4 - kick 2 - test 5 - snare 3 - test 6 - kick 3 - test 7 - snare 4 - test 8 - hihat 2 - test 9 - hihat 3 - test

Instruments by Paul Slocum