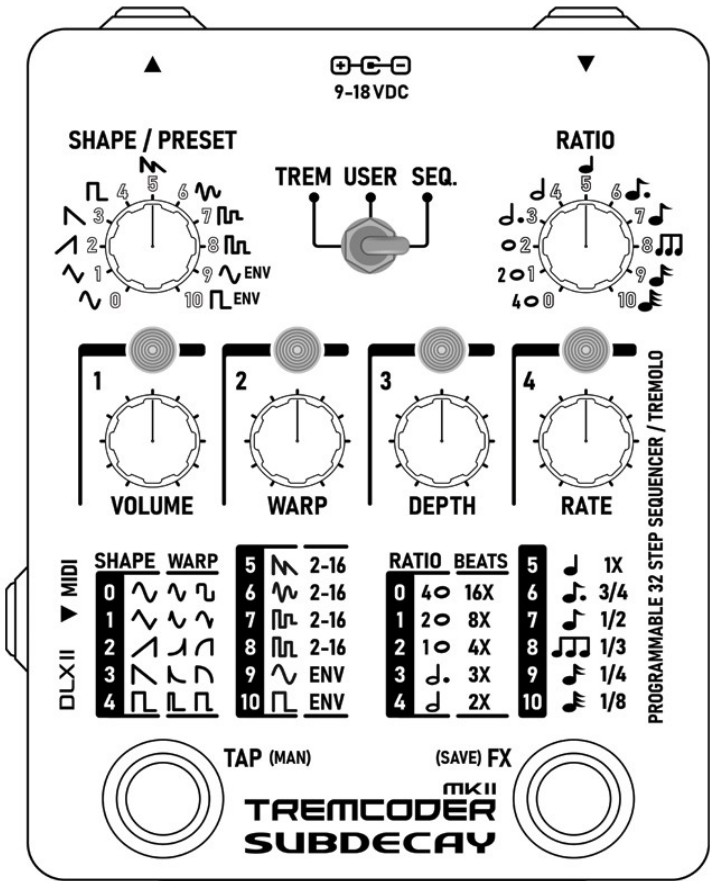


SUBDECAY

TREMCODER

TREMOLO SEQUENCER



USER GUIDE

VERSION 1.00A

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INTRODUCTION:

The Subdecay TremCoder MKII is our DLX series tremolo. All the usual tremolo stuff is on tap. It also offers non-traditional LFOs, sequenced tremolo, tap tempo with divisions and savable presets.

All parameters are editable via MIDI CC messages. It can also be locked to the MIDI tempo clock for perfect sync.

The TremCoder MKII lets you take control in several ways. All parameters can be accessed without external control. For MIDI control see the MIDI implementation section.

INPUTS, OUTPUTS, CONTROL SURFACE:

DC INPUT:
9-18VDC
NEGATIVE CENTER
LESS THAN 100mA DRAW

FX OUTPUT (top left) **FX INPUT** (top right)

SHAPE / PRESET knob (top left) with 10 positions (0-10) and various waveform icons.

RATIO knob (top right) with 10 positions (0-10) and musical notation icons.

TREM USER SEQ. (center) with a sequencer knob.

LED 1-4 (top row) above four parameter knobs.

PARAMETER KNOBS: VOLUME, WARP, DEPTH, RATE.

MIDI INPUT: MIDI TYPE B 1/4 INCH TRS (bottom left).

TAP(MAN) SWITCH: Tap tap tempo. Long press for manual rate control. (bottom left).

FX(SAVE) SWITCH: Bypasses or engages effect. Long press for alternate function. (bottom right).

DLX II (bottom left) and **PROGRAMMABLE 32 STEP SEQUENCER / TREMOLO** (bottom right) labels.

TABLES:

DLX II	SHAPE	WARP		RATIO	BEATS
0	~	~	5	40	16X
1	~	~	6	20	8X
2	^	^	7	10	4X
3	∩	∩	8	4	3X
4	∪	∪	9	2	2X
			10		

5	∩	2-16
6	~	2-16
7	∩	2-16
8	∩	2-16
9	~	ENV
10	∪	ENV

5	♪	1X
6	♪	3/4
7	♪	1/2
8	♪	1/3
9	♪	1/4
10	♪	1/8

TREMCODER MKII SUBDECAY

CONTROLS:

Most of the controls are straight forward, but a few may require a brief explanation.

MODES: (Toggle Switch)

USER: In this mode you can recall 11 user presets with the SHAPE/PRESET knob. If you'd prefer to set the lower four knobs as inactive this can be done via global settings. See page zzz

TREM: For editing and saving LFO based tremolo patches.

SEQ: For editing and saving Sequence patches.

THE TOGGLE SWITCH SETTING AFFECTS THE OPERATION OF SOME CONTROLS:

	TREM	USER	SEQ
SHAPE/PRESET	SELECTS LFO SHAPE	SELECTS & LOADS USER PRESET	SELECTS PRESET SEQUENCE
FX(SAVE)	ENGAGE OR BYPASS THE EFFECT	ENGAGE OR BYPASS THE EFFECT	ENGAGE OR BYPASS THE EFFECT
FX(SAVE) LONG PRESS (2+SECONDS)	STARTS SAVING USER PRESET PROCESS	N/A LONG PRESS IS DISABLED IN USER MODE	STARTS SAVING USER PRESET PROCESS

TAP TEMPO VS. MANUAL RATE CONTROL:

The Tremolo rate can be controlled manually or via tap tempo.

Tap tempo is set by tapping the TAP(HOLD) switch two or more times. The RATIO knob sets the tempo division.

While tap tempo is engaged the RATE knob does nothing. It only works when tap tempo is not engaged. To disengage tempo press the TAP/(HOLD) switch for 2+ seconds.

KNOBS:

VOLUME: It makes it louder, or quieter if you are into that sort of thing.

WARP: Alters the LFO shape or smooths the sequence steps.

DEPTH: Controls the depth of the tremolo or sequence.

RATE: Controls the LFO or Sequences manual rate.

SEQUENCE WARP TYPE:

The sequence warp type setting is available while making a custom sequence or via MIDI.

The default warp type is triangle. Increasing the warp setting makes the sequence glide from step to step. As you decrease the warp setting the change from step to step becomes more square and abrupt.

Ramp warp: When using ramp warp the sequence steps glide up to the next step, but abruptly drop if the next step is lower.

Saw warp: Steps glide down, but abruptly rise if the next step is higher.



CUSTOM SEQUENCES WITHOUT EXTERNAL CONTROL:

Sequences are edited in custom sequence edit mode. This uses the FX and TAP switches to enter and navigate. The lower row of knobs are used to adjust parameters. Sequences are edited in 4 step segments.

1. With the toggle set to SEquence hold down the FX(SAVE) switch as if you were going to save a preset. After depressing the switch LED1 will blink.
2. Pres the TAP(MAN) switch.
3. Now you are in sequence editing setup.

LEDs pulse to indicate the sequence length and the warp type.

The VOLUME(1) knob sets the sequence length. Select 4 6 8 12 16 24 or 32 steps.

Notice the LEDs changing as you turn the knob.

LED DISPLAY TOTAL SEQUENCE STEPS

4 STEP



6 STEP



8 STEP



12 STEP



16 STEP



24 STEP



32 STEP



The DEPTH (2) knob sets the warp type. You'll see the pulse of the LEDs change to indicate Triangle, Ramp and Saw.

4. Press the FX switch to advance to the first 4 step segment. The lower four rows of knobs control steps 1 2 3 & 4 of the sequence. Pressing the FX switch again advances to steps 5-8. Advance further with the FX switch or use the TAP switch to return to the previous 4 step segment.

CUSTOM SEQUENCES VIA MIDI:

Full MIDI control:

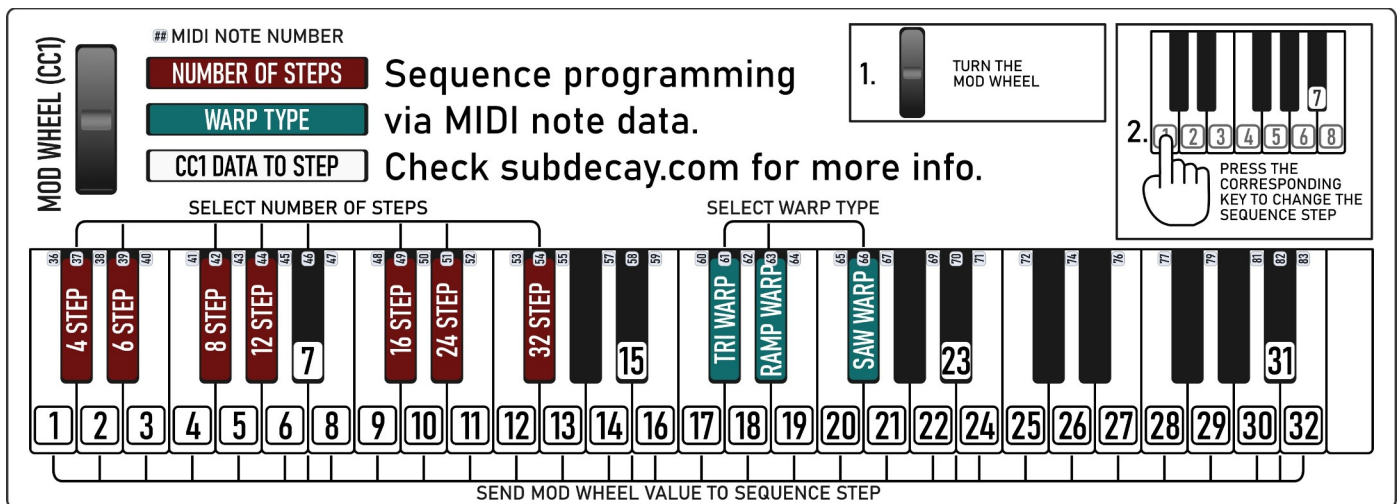
All parameters including sequences can be edited via MIDI CC messages. See the MIDI INFORMATION section

MIDI controller with 8 assignable knobs/sliders & pads:

This allows you to edit 8 steps at a time by assigning the sliders to CCs with many common MIDI controllers. See the MIDI INFORMATION section.

CUSTOM SEQUENCES VIA MIDI NOTE DATA:

MIDI controller NOTE data: Use a 49 key MIDI keyboard or MIDI controller as long as it has a mod wheel. See documentation on our website.



Press any keys to set the sequence length.

Press any keys to set the warp type.

Use the white keys and B \flat to assign the mod wheel value to the step.

The mod wheel should be assigned to CC1. This is the default setting for most keyboards and midi controllers.

Seq step 1 starts at Low C. (midi note 36 for nerds.) For smaller keyboards and controllers octave buttons can be used to access all steps and settings.

FACTORY RESET AND STARTUP OPTIONS:

To access startup options, restore settings or factory reset:

1. In USER mode set the SHAPE/PRESET knob to 10 and VOLUME knob to 0. Then hold the FX switch for two seconds.

Upon release the LED1 will blink.

2. Use the SHAPE/PRESET knob to select a menu item

The color and number of pulses confirms your setting. For some options other knobs are used to record a setting.

3. Press the bypass switch to record the setting. To exit Select 10 on the SHAPE/PRESET KNOB and press FX.

SHAPE/PRESET	FLASH	SETTING/ACTION
0	Green 6X	Factory reset
1	Green 5X	Restore Presets
2	Green 4X	Restore Startup settings (midi channel & enable knobs)
3	Green 3X	Reserved for repair/troubleshooting.
4	Green 2X	Reserved
5	Blue 5X	Set MIDI channel with volume knob
6	Blue 4X	Set active knobs for USER mode. (set to 0 to disable)
7	Blue 3X	Set pop reduction envelope.
8	Green 10X	Exit
9	Green 10X	Exit
10	Green 10X	Exit

MIDI CC IMPLEMENTATION:

MIDI CC MAP:

Parameter	CC	Value range
Mod Wheel	1	Input from Mod Wheel is used to program sequences with note data
Depth	3	0-127
Shape	4	0-12 Sine 13-24 Triagle 25-36 Ramp 37-48 Saw 49-56 Sqr/pulse 57-72 Fade saw 73-84 Fad sine 85-96 Fade sqr 1 97-108 Fade sqr 2 109-120 Env sine 121-127 Env sqr
Warp	5	0-127
Reserved	6	Only active in factory reset/setup. Intended for repairs and trouble shooting.
Volume	7	0-127
Manual Rate	9	0-127 Controls manual tremolo rate. (tap tempo must be deactivated)
Tap Tempo Ratio	11	0-12 16 beats 13-24 8 beats 25-36 4 beats 37-48 3 beats 49-56 Half note 57-72 Quarter note 73-84 Dotted eighth 85-96 Eighth note 97-108 Triplet 109-120 16th note 121-127 32nd note
Tap Tempo on	13	0 No change. 1-127 Tap tempo on
Reserved	14	0 No change. 1-127 Manual Rate on
Trem State	15	0 No Change. 1-127 Tremolo On. (Sequence Off)
Seq State	16	0 No Change. 1-127 Sequence On (Tremolo Off)
Sequence Programming with controller	18-25	Intended for use with an 8 knob/slider MIDI controller for editing sequences in 8 step segments.
Seq Glide Type	31	0-42 Triangle warp 43-84 Ramp warp 85.127 Saw war[
Seq steps 1-32	32-63	0-127 Controls individual sequence steps levels. CC32 = step 1. CC63 = step 32.

Sequence Length	64	0-19 4 step 20-38 6 step 39-57 8 step 58-76 12 step 77-95 16 step 96-114 24 step 115-127 32 step
Seq Segment Down	68	Intended for Sequence Programming with 8 knob/slider MIDI controller 0 No Change 1-127 Segment down Selects which 8 step sequence segment is edited via CC18-CC25. Seq steps 25-32 > Seq steps 17-24 > Seq steps 9-16 > Seq steps 1-8
Seq Segment Up	69	Intended for Sequence Programming with 8 knob/slider MIDI controller 0 No Change 1-127 Segment up Selects which 8 step sequence segment is edited via CC18-CC25. Seq steps 1-8 > Seq steps 9-16 > Seq steps 17-24 > Seq steps 25-32
Seq Segment 1	70	0 No change. 1-127 Selects Sequence steps 1-8 for editing via CC18-25
Seq Segment 2	71	0 No change. 1-127 Selects Sequence steps 9-16 for editing via CC18-25
Seq Segment 3	72	0 No change. 1-127 Selects Sequence steps 17-24 for editing via CC18-25
Seq Segment 4	73	0 No change. 1-127 Selects Sequence steps 25-32 for editing via CC18-25
FX on / Bypass	98	0 bypass. 1-127 Effect engaged
FX Bypass	99	0 No change. 1-127 Bypass effect
FX on	100	0 No change. 1-127 Bypass & RESET LFO/SEQUENCE
Bypass Toggle	101	0 No Change 1-127 Toggle bypass (on or off)

ADDITIONAL MIDI IMPLEMENTATION:

MIDI program changes will change user presets when the toggle is set to user mode.

Tap tempo will automatically sync to a MIDI clock if it's detected. You can still hold down the TAP(MAN) switch for 2 seconds to disable tap tempo and adjust the rate manually with the RATE knob.

ADDITIONAL NOTES:










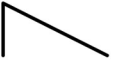



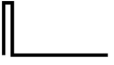

LFO SHAPES AND WARP:



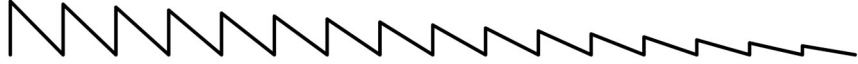




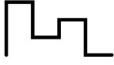




Each LFO shape can be further altered via the WARP knob.

LFO Shapes (0-4) are simple LFO shapes repeating with every LFO cycle.

Pattern Shapes (5-8) are Patterns which repeat after 2 to 16 LFO cycles. The number of cycles before repeating is altered by the WARP knob. Select from 2 4 6 8 12 or 16.

Envelope Shapes (9&10) use envelope speed control. These use manual rate control only. (Tap tempo is not available.) A higher input signal will alter the LFO speed. For slower rates turn the WARP knob to the left. For faster speeds turn the WARP knob to the right.







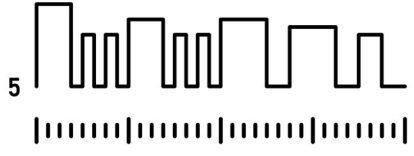




LFO SHAPES (0-4)	MIN WARP	MAX WARP
0 SINE 		
1 TRIANGLE 		
2 RAMP 		
3 SAW 		
4 PULSE 		

PATTERN SHAPES (5-8)	MIN WARP	MAX WARP
5 FADING SAW 		
6 FADING SINE 		
7 FADING SQUARE 1 		
8 FADING SQUARE 2 		

ADDITIONAL NOTES:

SEQUENCES:

Select these preset sequences using the SHAPE/PRESET knob in Sequence mode

SEQUENCES	3 	7 
0 	4 	8 
1 	5 	9 
2 	6 	10 

ADDITIONAL NOTES:

SAVED PRESETS & MIDI:

When using a preset you can switch between LFO shapes and Sequences. Both of these are saved in your preset. It is possible to select a LFO shape, then program a custom sequence and switch between these two using CC15 & CC16.

This wasn't part of the initial design plan. It's the result of how preset data is saved, but you may find it useful.

All other preset settings are shared. The VOLUME, WARP, DEPTH and RATE will be the same.

TAP SWITCH BEHAVIOR:

Pressing the TAP switch once will send the previously tapped tempo to the LFO or Sequence.

This tapped tempo will persist in the TremCoder's memory until it is powered down. The default tap tempo on power up is 120 BPM.

Pressing the tap tempo switch once will send the previous tapped tempo to the LFO or Sequence. This is true even while using presets.

If a preset is saved with a tap tempo active at 100 BPM the preset will load at this rate.

If you'd previously tapped in a tempo of 80 BPM pressing the tap tempo switch once will change the rate to 80 BPM.

Pressing the TAP switch 2 or more times sends the new tapped tempo to the LFO or Sequence.

LFO/Sequences and the FX switch.

LFOs and Sequences all have starting points. They will automatically reset when the effect is turned on. This makes the results consistent every time you engage the effect. Sequences will always start on Step 1 when the effect is turned on.

Additionally the LFO or Sequence can be reset to it's starting point via CC100.

Warranty: Subdecay Studios offers a 3 year limited warranty from the purchase date to the original purchaser. This warranty does not cover polar bear attacks, willful destruction, using your pedal as a hammer, or the neglect of the user. It does not cover the finish, paint or any external superficial damage. Any unauthorized repairs or modifications voids the warranty.

This document was believed to be accurate at the time it was created. Specifications are subject to change without notice.