

# Solaris v2.1 OS upgrade

Welcome to the new v2.1 OS, which re-designs the sequencer functionality (and to some extent the arpeggiator as well) of your Solaris. This has been almost a year in development, and I am extremely grateful to Jim Hewes for the thousands of hours he has dedicated to improving the Solaris operating system.

Instead of completely updating the original User Guide, I have decided to produce this addendum for 2.1 OS. Since most of the synthesizer functions remain the same, I feel it is only necessary to describe the changes to the sequencer and arpeggiator sections.

## ArpSeq Group

When you are in Preset mode, or pressing the Home button, you will see the same set of soft button labels, as explained in the Solaris 2.0 documentation:

*The first change to the Preset Mode display is that the labels for the 6 soft keys are now permanently assigned. The labels from left to right are: Part #, ArpSeq, Multi, Utils, FX, and SysMid. This allows you to increment the current Part (for front panel editing) and have direct access to the Arpeggiator and Sequencer, Effects, and System/Midi page groups. It also adds a direct jump to the new set of Multi pages (there are 7!) as well as a Utilities group to help build and edit the Multi Preset:*



*"Note: These 6 soft key labels are also available when pressing the Home button."*

## Arp & Sequencer Pages

After selecting the ArpSeq button, you will see the following screens, depending on which button is selected.

Here is the Arp page 1:



And here is the Seq page 1:

Arp	Seq	ModA	ModB	ModC	ModD
Mode	Division	Dir	Swing	Length	
Key	1/16	Forward	0.0%	16	
BPM	Reset	GlbRtch	RtchProb	Record	
120	On	Step	100%	Off	
Part 1	INIT				1/6

I will explain the ModA/B/C/D pages a little later. Let's start with the Sequencer section, as that has the greatest number of changes. While some functions have also been added to the Arpeggiator, it will be easier to explain using the sequencer first.

## Sequencer page 1

Here are the parameters and descriptions:

**Mode** - Key, Keystep, ModOnly

- 1) With Key mode, you have to play a key to start playback. Pressing the Hold button On allows the sequencer to keep playing (for Key and ModOnly modes) without holding a key down.
- 2) With Keystep, subsequent key presses will step through the sequence.
- 3) ModOnly will run the four Mod lanes (A/B/C/D) using the Division, Direction, Swing, BPM, and Reset. No note sequences will occur, just the modulation you have set up. Hold works here as well.

**Division** - 1/32, 1/16 Triplet, 1/16, 1/8 Triplet, 1/8, 1/4 Triplet, 1/4, 1/2 Triplet, 1/2, 1/1, 2/1, 3/1, 4/1, 6/1, and 8/1.

**Direction** - Forward, Backward, PingPong, Fwd-Back, Random, and One Shot.

- 1) The direction should be pretty obvious by just trying out the different choices. The only important thing to know is OneShot will depend on the Reset parameter to play once or run the sequence once for each key press.

**Swing** - 0.0% - 75%

**Length** - 1-32 steps.

- 1) When first recording a note sequence, it will set the Length automatically when you either turn Record Off or press the Seq On button.
- 2) There is a special usage case for the note sequencer. You can load all 32 steps with notes that you want to use when setting the Random Probability (1/2) to modulate Note (see page 6 explanation). I requested this function, as I wanted to be able to semi-randomly have other notes show up in the sequence, but wanted to determine the note pool from which the random notes would be selected. For example - say you want an 8-note sequence, but would like octaves and fifths of certain notes to randomly appear. You record the first 8 steps as planned, then continue

the recording by adding the other notes desired. When finished, set the Length to 8, so that the sequence plays as planned. When you then increase the random probability (on page 6) with Note as the destination, you will get an increasingly random selection of the note pool occurring during the sequence. You can also modulate the Length from any of the controllers (see page 6 Source List) to get some variances in the sequence.

**BPM** - 10-300 beats per minute.

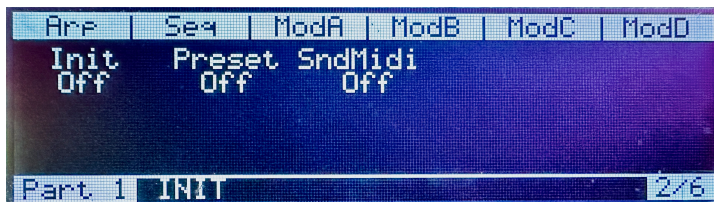
**Reset** - On or Off. When On, a key press with restart the sequence. Multiple sequences playing at the same time (all 4 parts, for example) may determine how the reset starts.

**GlbRtch** - This stands for Global Ratchet mode. Choices are 1, 2, 3, 4, 6, 8, Step. Ratcheting will only occur for Step Types marked with an R value (see Sequencer page 4). If Step is selected, then the number of ratchets will use the Step Type number.

**RtchProb** - This stands for Ratchet Probability. Range is 0-100%. At 100%, you will get the ratchet value set at GlbRtch all of the time for steps that have an R value.

**Record** - Turn Record On to start feeding the note sequencer pool. Starting a Sequence or turning Record Off ends the storing of notes.

## Sequencer page 2

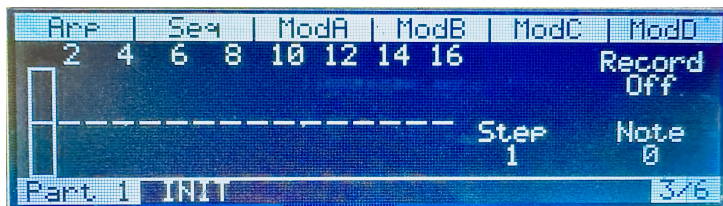


**Init** - initializes the note sequence. Turn to Active, and then press Enter.

**Preset** - Off, Load, Save. Allows loading or saving of the patterns.

**SndMidi** - If turned On, sends the note sequence out over MIDI.

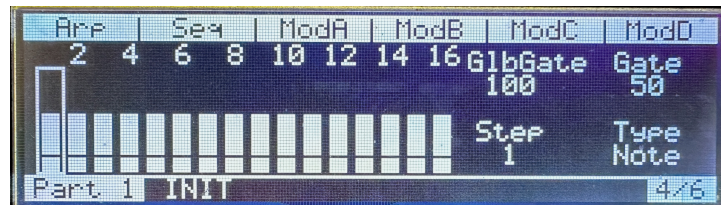
## Sequencer page 3



Page 3 shows the current note values per step. You can Record a sequence, or edit each step. Rotate the Step value to the right to see steps 17-32.

Handy Shortcut: You can quickly set step values to be the same as the current step by holding down Shift, then turning the Step knob.

## Sequencer page 4

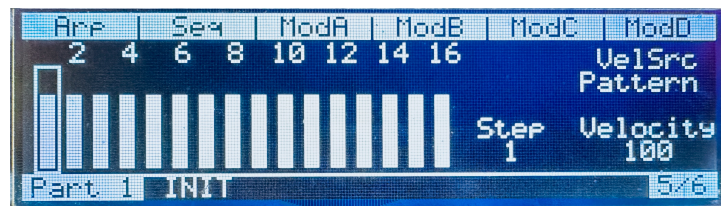


Page 4 displays the Gate value per step, the Global Gate percentage, and the Type for each step.

**Types** - Note, Tie, Rest, R1, R2, R3, R4, R6, and R8. If a step is set to one of the R values, it will ratchet at that number for that step, depending on the settings for Global Ratchet and Ratchet Probability. You can also enter rests and ties step by step using the - and decimal point on the keypad. First hold down the desired note for the step, then press minus (-) for a tie and point (.) for a rest.

Handy Shortcut: You can quickly set step values to be the same as the current step by holding down Shift, then turning the Step knob. For Gate values, first turn the Gate parameter, and for Type, first turn the Type parameter. Then hold Shift and select the number of steps.

## Sequencer page 5



Page 5 displays Velocity values per step. Rotate the Step value to the right to see steps 17-32.

**VelSrc** - Pattern, Keyboard, Both. Handy Shortcut: You can quickly set step values to be the same as the current step by holding down Shift, then turning the Step knob.



## Sequencer page 6

Arr	Seq	ModA	ModB	ModC	ModD
Source1	Amount	Dest	Prob1	Dest	
Off	0%	None	0%	None	
Source2	Amount	Dest	Prob2	Dest	
Off	0%	None	0%	None	
Part 1	INIT				6/6

One of the most powerful aspects of the new sequencer is the ability to modulate! Page 6 displays the modulation paths for a select number of parameters. There are 2 general modulation paths, and 2 Random Probability paths:

**Source 1/2** - AT, ModWh(eel), AT+MW, Rib1, Rib2, JoyX, JoyY, FootCt1, SusPed1, SusPed2, Assign1, Assign2.

**Amount 1/2** - +/- 100%. Some Destinations require a negative percentage, such as Gate. If Note is the Destination here, the value is not a percentage, but a semitone value. This allows you to set a fixed note offset with a controller. For example, you can have one of the Assign buttons set to transpose things a set value when selected.

**Destination 1/2** - None, Pattern Length, Division, Direction, Global Gate, Velocity, Note, Step Type, Probability 1 percentage, Probability 2 percentage, Global Ratchet value, Ratchet Probability.

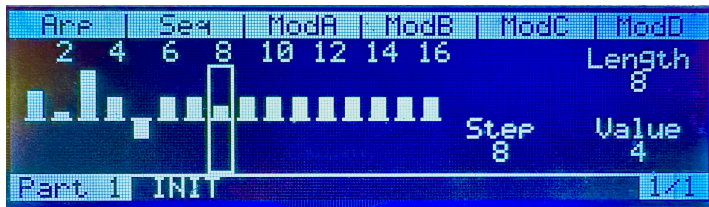
**Probability 1/2** - 0-100%. At 100%, the randomness will be at full effect.

**Probability Destination 1/2** - None, Note, Step Type, Velocity, Global Gate, ModA, ModB, ModC, ModD.

For this random modulation, using Note as a destination has a very special application. Instead of generating random notes values that might have no musical relationship to the sequence, it will only select from the note values entered for all 32 steps. This way, the user can determine the notes which will be randomly selected, from the total 32-note 'pool', entered by recording a sequence (or editing from Sequence page 3).

If any of the ModA/B/C/D lanes are selected, then a randomness of those step values will occur.

## Sequencer ModA/B/C/D



The four Modulation patterns, called ModA, ModB, ModC, ModD, are now just used as modulation lanes. They use the same values as the Seq page 1 for Mode, Division, Direction, Swing, BPM, and Reset. If Mode on Seq page 1 is set to ModOnly, the sequencer will not send out any note events, which ignores Gate, Velocity, and Step Type parameters. Hold still functions, however.

Handy Shortcut: You can quickly set step values to be the same as the current step by holding down Shift, then turning the Step knob. Rotate the Step value to the right to see steps 17-32.

## Arp Page 1

Arp	Seq	ModA	ModB	ModC	ModD
Division	Dir	Octaves	Swing	Length	
1/16	Up	1	0.0%	32	
BPM	VelSrc	Latch		GlbGate	
120	Pattern	Off		100	
Part 1	INIT				1/5

**Division** - 1/32, 1/16 Triplet, 1/16, 1/8 Triplet, 1/8, 1/4 Triplet, 1/4, 1/2 Triplet, 1/2, 1/1, 2/1, 3/1, 4/1, 6/1, and 8/1.

**Direction** - Up, Down, Up/Down, AsPlayed, Random, Down2, Up/Down2, Chord.

**Octaves** - 1-4 octave range.

**Swing** - 0.0% - 75%

**Length** - 1-32

- 1) Unlike the note sequencer length, the length parameter here does not affect how many notes played in arpeggiation. Rather, it applies the values of the pattern displayed on pages 3 & 4. Since the pattern can be programmed with different Step Types, for example, you can have a simple 4 note arpeggio be affected across the 32 steps' variations. Some experimenting with this will clarify how the pattern length can interact with the arpeggiation being played.

**BPM** - 10-300 beats per minute.

**VelSrc** - Velocity Source. Velocity per step comes from either the Pattern, the Keyboard as played, or a combination of both.

**Latch** - Traditionally, Latch would mean to hold and play the arpeggiator, however since we have a Hold button to do that, Jim has designed a special function when using Latch, in conjunction with the Hold function. Here's how they work:

- 1) Arp On, Latch Off - only notes held will arpeggiate. Hold allows the notes to sustain without holding down the keys.
- 2) Arp On, Latch On, Hold **Off** - Causes the notes to be held, and turns on a "note buffer", that you can continually add to, up to 64 notes. To reset, you have to turn Latch off then on again.
- 3) Arp On, Latch On, Hold **On** - Pressing the Hold button On after having Latch On stops feeding the Latch note buffer, and starts storing a second "Latch note buffer", which then becomes active when you turn Hold OFF (and the previous note buffer is finished). This way, you can have a latched arpeggiation play, and create a new one while the Hold button is On, then switch to playing the new one by turning Hold Off. You can repeat this process for as long as you want!

**GlbGate** - This stands for Global Gate. Range is 1-100. At 100, you will get the full value of whatever is programmed per step. Adjusting this will scale down all steps together proportionally.

## Arp Page 2



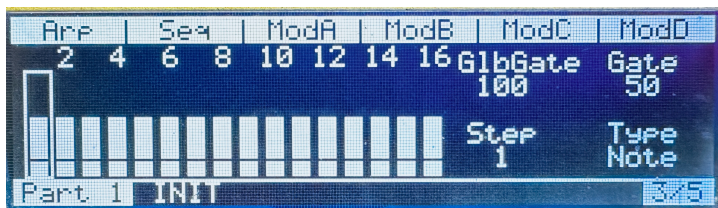
**Init** - initializes the arpeggiator pattern. Turn to Active, and then press Enter.

**Preset** - Off, Load, Save. Allows loading or saving of the patterns.

**SndMidi** - If turned On, sends the arpeggiation out over MIDI.

**Copy to Sequencer** - Turn to Active and press Enter to copy the current arpeggiation to the sequencer.

## Arp Page 3

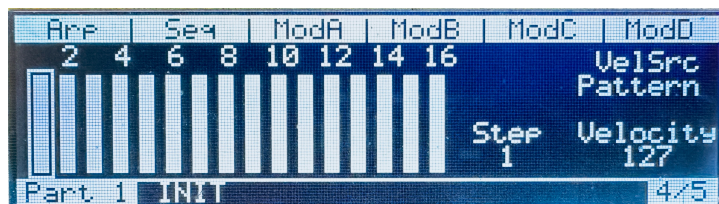


Page 3 displays the Gate value per step, the Global Gate percentage, and the Type of note for each step. Rotate the Step value to the right to see steps 17-32.

**Types** - Note, Tie, Rest.

Handy Shortcut: You can quickly set step values to be the same as the current step by holding down Shift, then turning the Step knob. For Gate values, first turn the Gate parameter, and for Type, first turn the Type parameter. Then hold Shift and select the number of steps.

## Arp Page 4



Page 4 displays Velocity values per step. Rotate the Step value to the right to see steps 17-32.

**VelSrc** - Pattern, Keyboard, Both.

Handy Shortcut: You can quickly set step values to be the same as the current step by holding down Shift, then turning the Step knob.

## Arp Page 5



Similar to the new sequencer, version 2.1 OS allows for modulation - in this case, of the arp pattern (not the actual notes). Page 5 displays the modulation paths for a select number of parameters. There are 2 general modulation paths, and 2 Random Probability paths:

**Source 1/2** - AT, ModWh(eel), AT+MW, Rib1, Rib2, JoyX, JoyY, FootCt1, SusPed1, SusPed2, Assign1, Assign2.

**Amount 1/2** - +/- 100%. Some Destinations require a negative percentage, such as Gate. If Note is the Destination here, the value is not a percentage, but a semitone value. This allows you to set a fixed note offset with a controller. For example, you can have one of the Assign buttons set to transpose things a set value when selected.

**Destination 1/2** - None, Pattern Length, Division, Direction, Octaves, Global Gate, Velocity, Note, Step Type, Probability 1 percentage, Probability 2 percentage.

**Probability 1/2** - 0-100%. At 100%, the randomness will be at full effect.

**Probability Destination 1/2** - None, Note, Step Type, Velocity, Global Gate.

For this random modulation, using Note as a destination here is basically the same as having Random as the Direction on Arp page 1. The advantage here is you can modulate the amount.



## System/MIDI Pages

The System page 4 adds:

Page 4 - Here is the Info Page, showing the internal serial number and installed OS version. It also shows the version OS that the currently selected preset is from.

## SHIFT Key Combinations

A reminder - here are all of the Shift key actions:

1. Shift - By itself shows what VCA sections are ON in the current Part
2. Shift+graphic LCD page up/down buttons - Selects Parts
3. Shift+Home - Turns off all arpeggiated notes if Arp and Hold is ON; leaves those functions ON
4. Shift+Seq On - Turns OFF all sequencers
5. Shift+Arp On - Turns off all Arpeggiators
6. Shift+Hold - Turns off all Hold buttons
7. Shift+Keypad 1,2,3,4 - Selects same numbered Part
8. Shift+Period on keypad - Plays C4
9. Shift+note - Sets High or Low Key for key zones in Multi pages
10. Shift+Inc Button - Inserts a space when naming a Part or Preset
11. Shift+Dec Button - Deletes current character when naming a Part or Preset
12. Shift+Enter when copying or swapping Parts - ignores Multi parameters with operation
13. Shift+upper knob in Program Mode, page 2 (for assigning performance controls) -clears assignment
14. Shift+lower knob assigns parameter for performance controls
15. Shift + Step number for arp and seq sections - allows to copy a step value across other steps.

That is all for the new v2.1.x Operating System. Please let me know if you come across any bugs or issues that you'd like to see in future versions. And thank you so much for supporting the Solaris OS development!

Cheers,  
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