

THE SEQUETRON TUTORIAL

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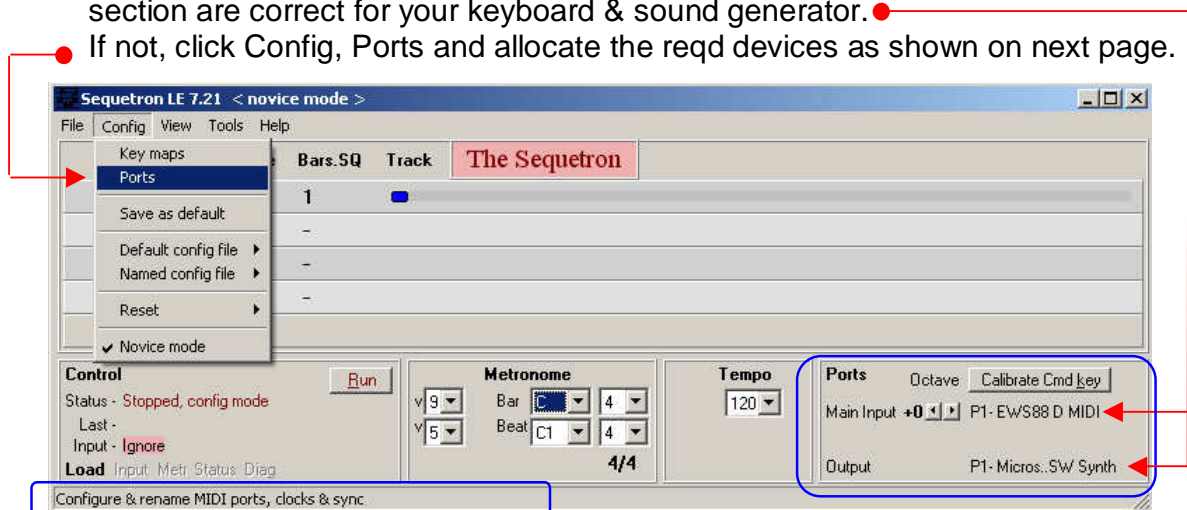
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If the Quick Start didn't work properly, or you're thinking 'What the... ?', please read the Overview guide, then try this more in-depth tutorial to get the most out of the Sequetron...

Sections in this colour are additional notes which you can skip at first reading.

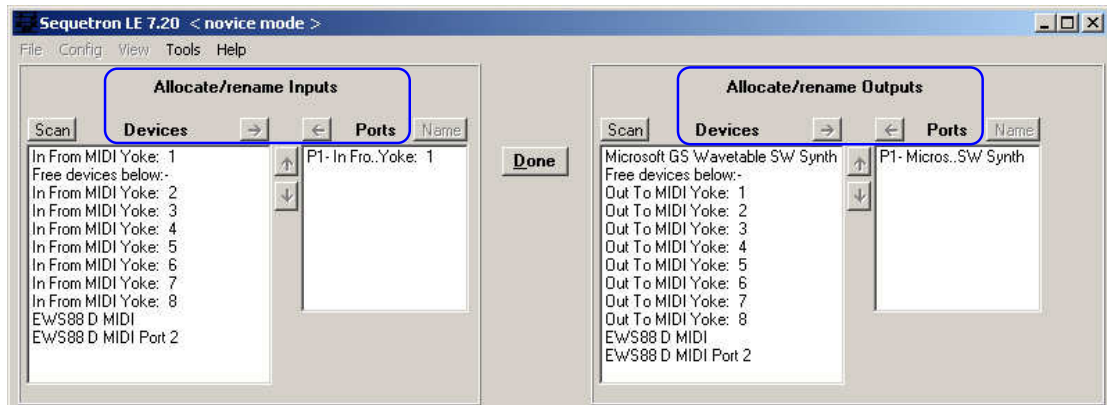
1. INITIAL SETUP

1. Connect MIDI-Out from your MIDI keyboard to PC MIDI-In.
 2. Connect PC MIDI-Out to MIDI-In on your MIDI sound generator.
 3. Disable 'local control' if your keyboard & sound generator are in one box.
 4. Start the Sequetron program and check the Input & Output shown in the Ports section are correct for your keyboard & sound generator. ●
- If not, click Config, Ports and allocate the reqd devices as shown on next page.



If you're not sure about any buttons or parts of the screen, move the mouse over them to display a brief overview in the status bar at the bottom of the window.

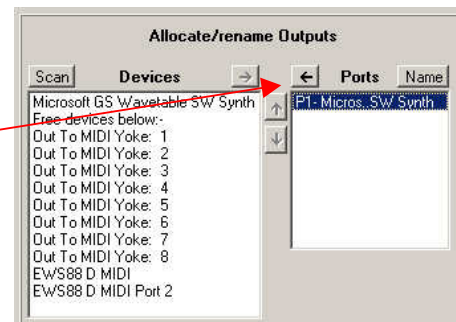
Clicking Config, Ports shows two pairs of lists; one for input, one for output.



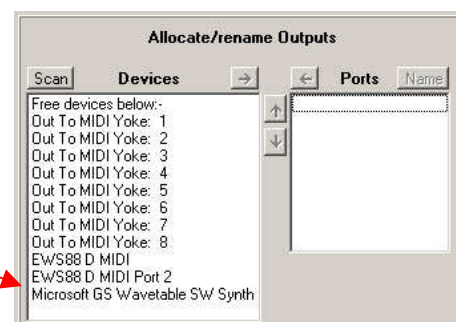
All MIDI devices found on your system are shown in the left-hand list of each pair. You can allocate one or more of these to be used by the Sequetron; they are then called 'ports', and appear in the right-hand list.

This example show the Windows default device 'Microsoft GS Wavetable SW Synth' allocated as an output port. Its response may be too sluggish for synchronised recording, but it should be enough to demonstrate some of the playback features.

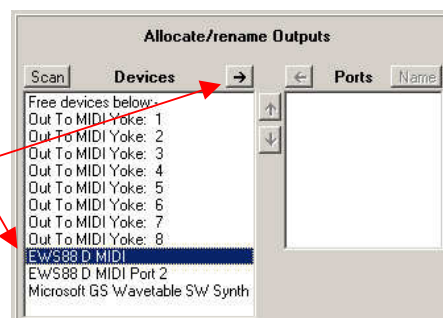
To de-allocate a port, click its port name and click the left arrow above it...



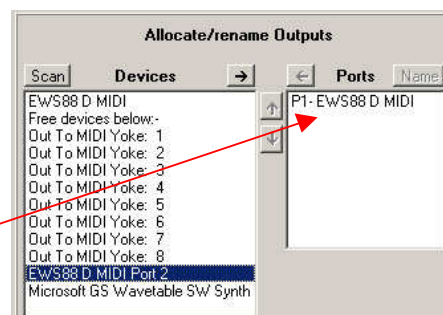
...it will move back to the free devices list on the left.



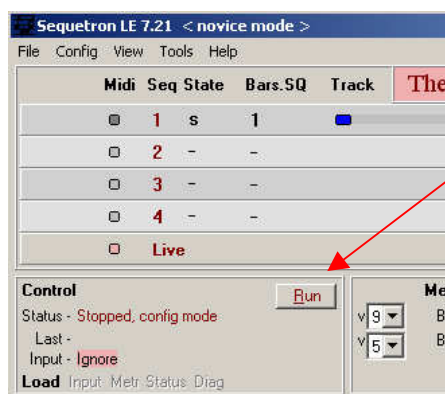
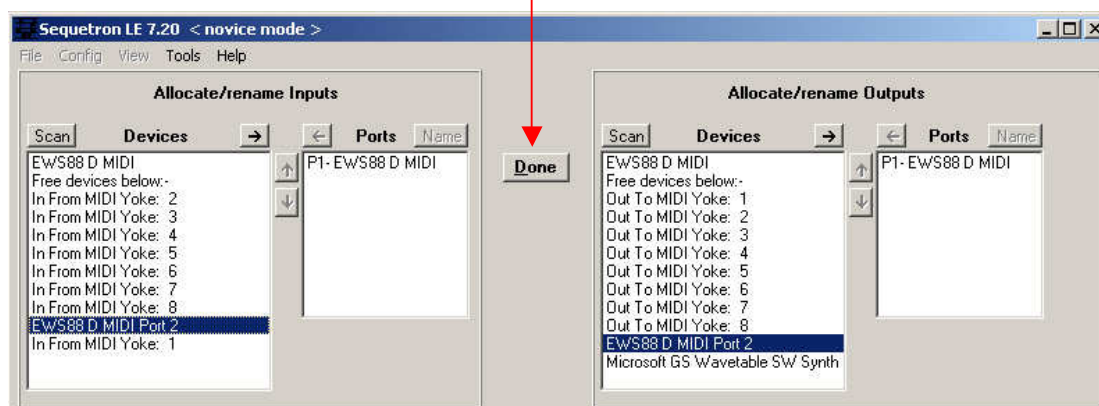
Then click the required device and click the right arrow (or just double-click the device)...



...it will move to the port list on the right.



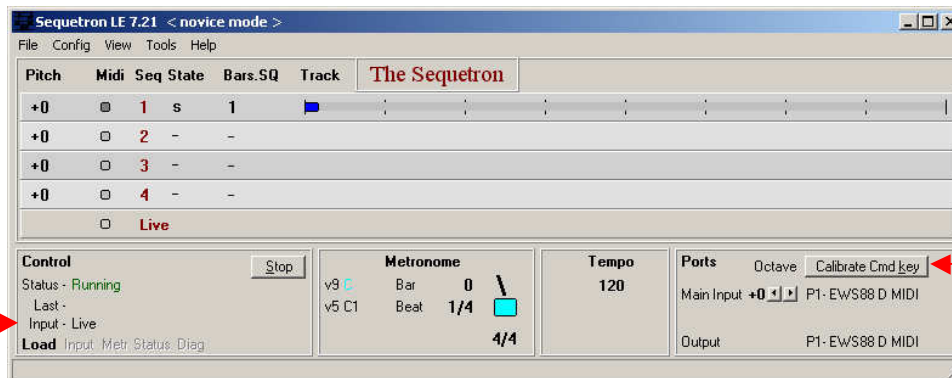
To keep things simple for now, only allocate one output & one input, then click Done to go back to the main screen.



Back on the main screen, start the Sequetron running by clicking Run.

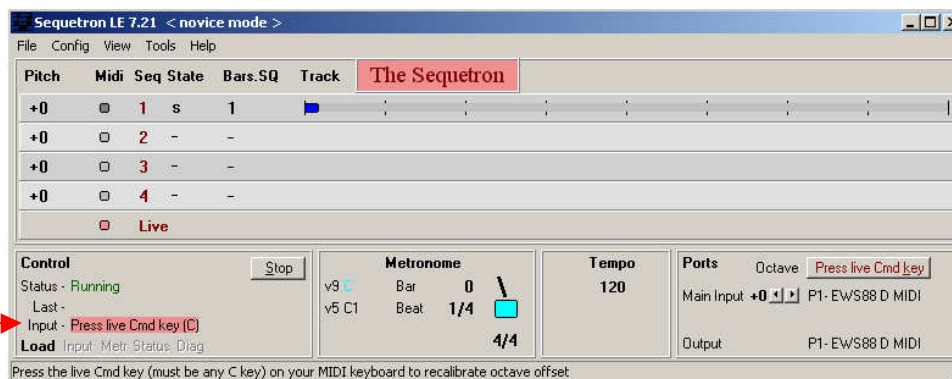
(the button will be disabled unless you have at least one input port and one output port).

All the on-screen configuration clutter will disappear, and the visible metronome will start running.



5. Check the **lowest C** key on your MIDI keyboard is behaving as the live cmd key by pressing and releasing it. The input line in the control section should toggle between 'Live' and 'Command?' on each key press.

If not, calibrate the cmd key by clicking the 'Calibrate...' button. It will prompt you to press the MIDI key corresponding to the live cmd key; the factory settings assume this is the lowest C on your keyboard. If the key is detected the prompt will disappear; if not, there is a problem with the **input** port configuration.



6. Once the cmd key is toggling between 'Live' and 'Command?', set it to 'Live' and press **any other** MIDI keys. They should all sound through your allocated output device; if not, there is a problem with the **output** port configuration. Do not press any keys apart from cmd if the input mode is not 'Live'.
7. If the cmd key itself produces a sound, then the 'local control' on your keyboard needs to be disabled. See your keyboard/synth documentation for this.

If you can't get this far, please see the Troubleshooting guide *before* proceeding.

If it all worked, click the menu option 'Config, Save as default...', which will allow you to skip all the above steps when you next restart the program.

Note: The program starts in *novice* mode to simplify the screen & MIDI functions; the window title bar will indicate this. You don't *have* to use this mode for the Quick Start & Tutorial, but it will prevent unexpected things happening if you press the wrong keys! The mode can be changed via the config menu, but *whenever you switch modes, please repeat the Setup steps and re-save the config.*

2. PREPARE TO PLAY

You need at least a 1-octave keyboard for these 'Play' examples, but you need a minimum of 3 octaves for everything else unless you reconfigure the key maps.

In the following examples, the cmd & esc functions are mapped to the same C1 key, where 1 indicates the octave number. The Sequetron uses the numbering convention whereby C3 is middle C, but there is no standard so your keyboard may be different.

It is strongly recommended you mark the keys somehow; use a wax pencil or print one of the supplied templates. If you are in novice mode, use the novice template which is suitable for both the LE & full versions. It can be used for the first five sections of this tutorial. Here's an example of octave 1; the lines represent the various modes...

esc esc cmd	play play -	mute	rec +	stop 0	seq 1 1	seq 2 2	seq 3 3	seq 4 4	5	6	7	allbut 8
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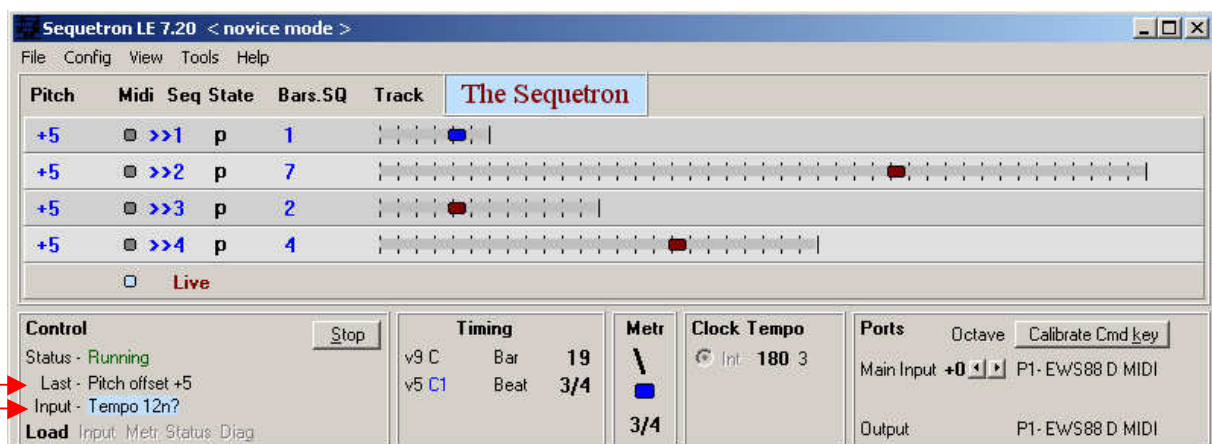
...these will be explained later along with keyboard diagrams like this. This example shows 'command' mode.



Make sure the Sequetron is in **Live** mode before you invoke any of the following commands, i.e. the input line in the control section displays 'Live', and all keys **except** the cmd key operate your output device. If it is not in live mode, press the esc key.

Keep an eye on the input line on the control section in the display; this shows how your key presses are being interpreted in the various modes (live means keys are playable live); this example shows a tempo command being processed.

The last command entered is also shown above it for reference. After some practice, the command logic will become more familiar and you won't need the screen so much.



Work through these examples in order as they will show you how the basic structure works for any command, i.e. you always press the cmd key first (to switch to command mode), then the sequence-select key(s) *if relevant*, then the command key required, then any values *if relevant*.

You can press the keys as fast or as slow as you like, and you don't have to release each key before pressing the next. If you keep your left little finger over the cmd key, your other fingers should be able to reach all the seq-select keys and the basic commands. The command sequence is then just like playing a rolling chord with your left hand. If you find you can't reach all the keys or you want them at different parts of the keyboard, you can re-configure the key maps later.

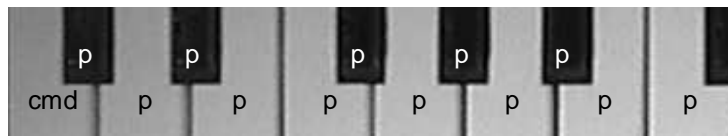
3. PLAY A SEQUENCE

The Sequetron is empty when first switched on, but we need a sequence to practice on before getting involved with the more complex recording process later, so we'll cheat and use a sequence which has already been 'pre-generated': the audible metronome sequence. This behaves just like any other sequence, and the factory setting nominates seq1 for this.

You can select any seq (or none at all) to be the metronome when in config mode.

*Unless otherwise stated, the following diagrams all show the **same first** octave.*

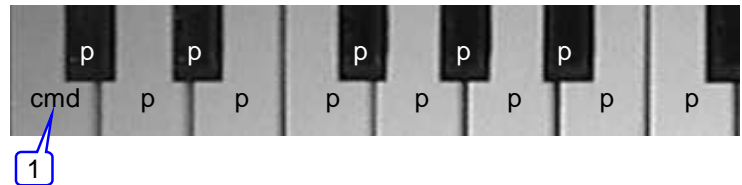
In live mode, all MIDI keys **except** cmd are playable (p), so they should all play your synth or sound device as normal; **do not** press the cmd key yet.



Play sequence 1 by pressing the following keys 1 to 3 **in order**. A *single* key press is required for each, as fast or as slow as you like. You don't have to hold the keys down, but it won't matter if you do. It's the **order** of key presses which matters. If you press the wrong key or press a key twice by mistake, then press the esc key to abort the operation and return to live mode, then start again.

This is what is happening behind the scenes as you press the 3 keys...

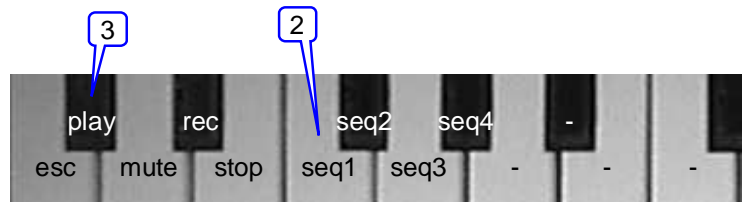
When you press the cmd key (1)...



... the keyboard instantly flips from live mode to command mode, so the keys are now interpreted as commands.

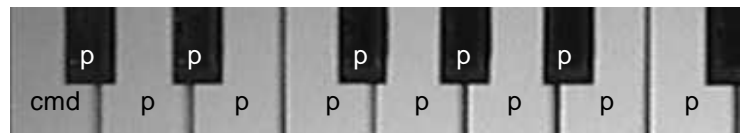


When you press the seq key (2), sequence 1 will be selected. The keyboard remains in command mode as it's still waiting for a command.



When you finally press the play key (3), the command is complete so the keyboard flips back to live mode automatically. The selected sequence will normally start playing on the next time boundary, but as nothing else is running it will start immediately.

The instant the keyboard returns to live mode, you can play any keys **except** cmd.



The keys can be pressed as fast as you like to minimise the interruption to your live playing, so it's quicker to do it than to explain it!

This mode switching may seem unnecessarily complex at first, but as you work through these examples, you'll find that it is consistent & logical, and gives you complete control over the whole machine without ever having to touch the PC.

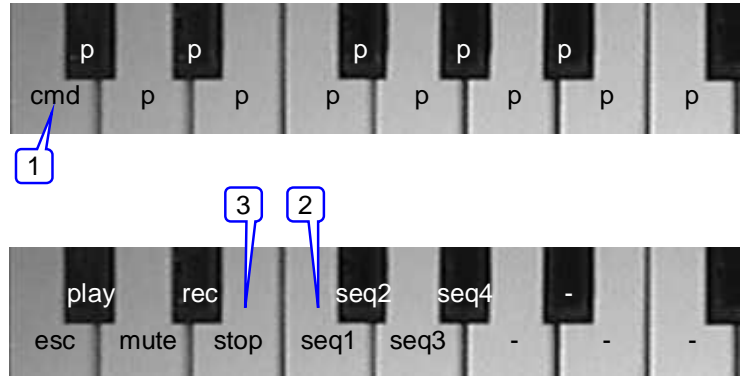
*Think of it as learning to play a guitar; at first it seems almost impossible to fret the strings and play them, and everything seems very cumbersome....
...but after a bit of practice... ☺*

4. STOP A SEQUENCE

- To stop sequence 1, press keys 1, 2 & 3 in order:-

Again, it's the same idea; press cmd to flip to command mode, press one or more seq-select keys (*if relevant*), then press the command reqd.

The metronome will stop at the end of its cycle.



Try playing & stopping the sequence again, and watch the status display. As you select it, a marker tag will appear next to the metronome sequence number & it will change colour, confirming that it will be the 'target' of the subsequent command. The status codes will also change between 's' (stopped) and 'p' (playing). Flashing codes mean the state change is waiting for the start-time boundary or the end-of-cycle.

All commands start from live mode with the cmd key-press (1), so to simplify the pictures from now on, the live mode diagram will not be shown separately.

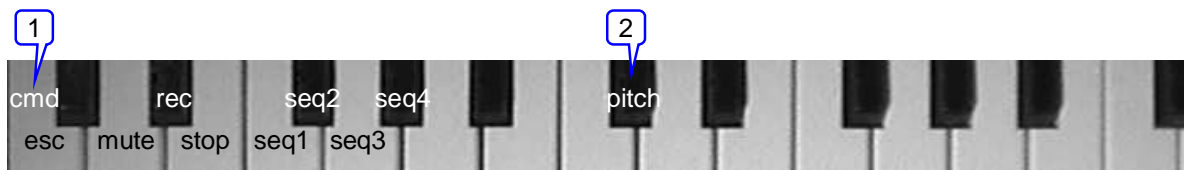
5. CHANGE PITCH

Unless otherwise stated, the following diagrams all show the **same first two octaves**.

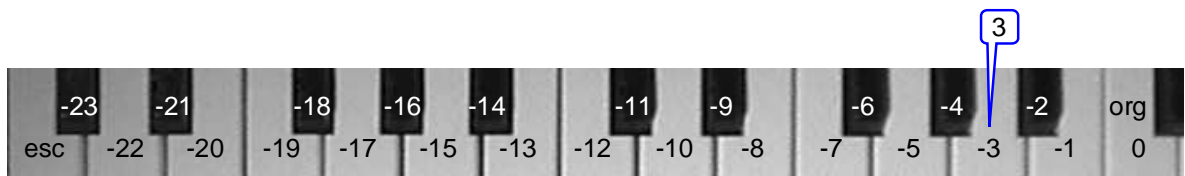
- Start the audible metronome as before.
- Apply a pitch-shift of 3 semitones lower by pressing the following keys 1 to 3 in order. If you press the wrong key or press a key twice by mistake, then press the esc key to abort the operation and return to live mode, then start again.

This is what is happening behind the scenes as you press the 3 keys...

When you press the pitch command key (2), the keyboard flips into pitch mode...



...so the keys are now interpreted as pitch shifts relative to the origin key...

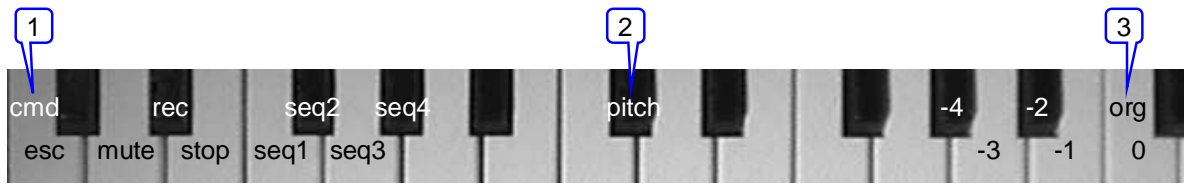


The keyboard will return to live mode and the metronome will change pitch by -3 semitones at the end of its cycle. Keys above the origin will increase the pitch.

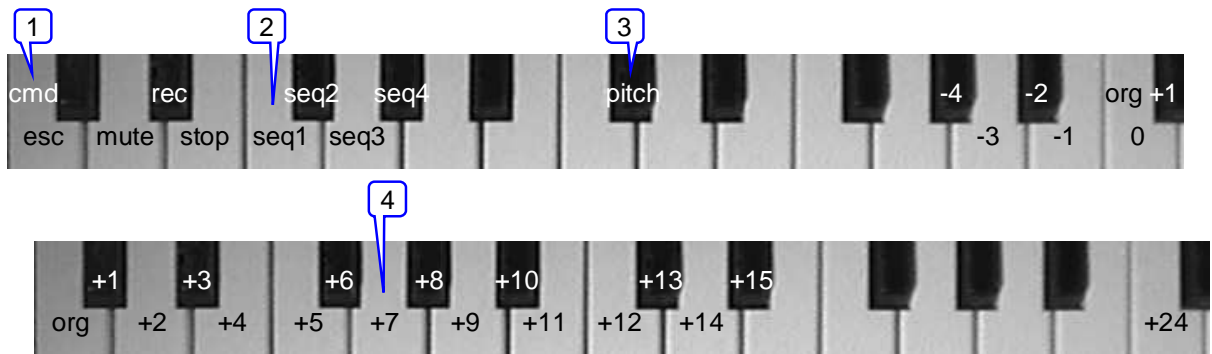
*We could have pressed one or more sequence-select keys before pressing the pitch command, but in this case we didn't, so the pitch change is applied to **all** sequences. If you look at the display just after you press the pitch command, you'll see the tags and colours change on all seqs to show they're all selected.*

The instant you press the pitch value key (3), the pitch shift is flagged as pending and the tags disappear as the keyboard reverts to live mode; you can continue playing live even though the pitch change hasn't changed yet. The pitch column shows the offset in semitones and, like other attributes, alternates between the current & pending values. If you time your live playing correctly, you can synchronise key changes etc.

- Reset the pitch back to the origin, press:-



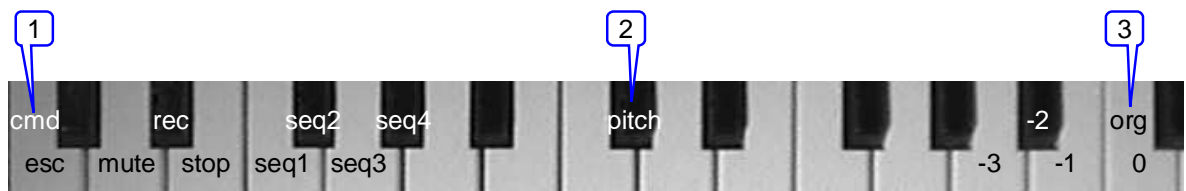
- Change the pitch 7 semitones upwards for the *specific* sequence seq1, press:



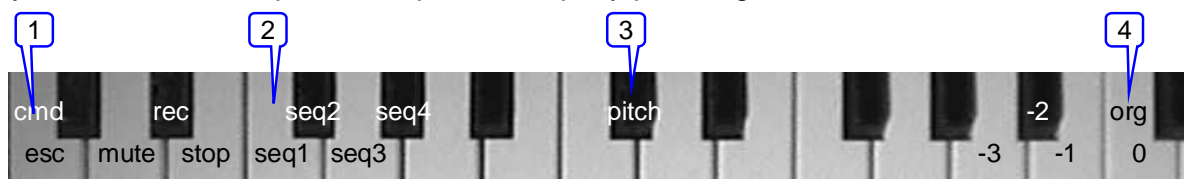
Note these two keyboard diagrams show **4 octaves**, split at the origin key.

The pitch display column now shows +7 for sequence 1 only, as opposed to the previous example where it showed -3 for **all** sequences. The seq-select keys are toggles, so you can select/deselect as many as you like before pressing the command.

- Reset pitch back to origin:-
You can either reset *all* sequences by pressing:-



Or you can reset the *specific* sequence seq1 by pressing:-



6. CHANGE TEMPO

More advanced features will appear soon, so if you are still in novice mode, please turn it off by clicking 'Config, Novice mode'

Note: whenever you turn the mode on or off, the configuration & key maps are reset, so you must repeat the Initial Setup steps and re-save your configuration.

Make sure you are now using one of the standard keyboard templates; here's an example of octave 1 for the LE version:-

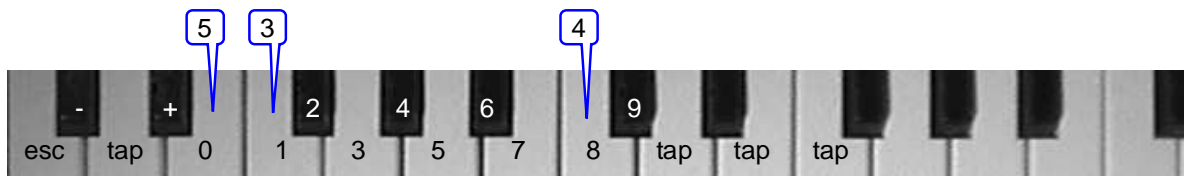
esc esc cmd	play play -	mute2 mute tap	r > rec +	q-off stop 0	1/1 seq 1 1	1/2 seq 2 2	3 seq 3 3	1/4 seq 4 4	5 p 2 5	6 m 2 6	7 pm 2 7	1/8 allbut 8
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The tempo command needs to be followed by a 3-digit value to specify the bpm. These values are entered by pressing 3 of the numeric keys in order. The factory settings map the numeric keys 0-9 onto consecutive keys, but you can map them anywhere.

- Change tempo to 180 bpm by pressing keys 1 to 5 in order:-
When you press the tempo command (2), the keyboard flips into digit mode...



... so the keys are now interpreted as numbers:-



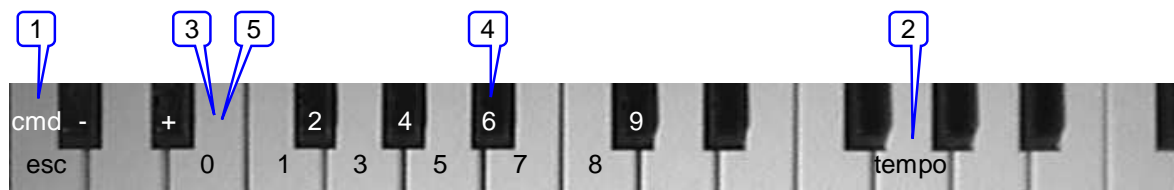
When the final 3rd digit has been pressed (5), the command is complete and the keyboard returns to live mode automatically.

The tempo will gradually increase from its default 120 to 180 as shown in the sync/tempo section of the display. The rate of change (slew) can be configured. All 3 digits are required to complete the command; the input line shows the digits as they are being entered. If you mess it up, you can abort the command by pressing esc, and the keyboard will instantly return to live mode.

Other options in digit mode are the '-' and '+' keys, which simply decrease or increase the current value by a fixed amount before returning to live mode.

The tap keys are only valid for the tempo command; press any of these three times at the required rate to generate a new tempo value.

- Change tempo to 60 bpm (don't forget the leading zero, 060), press:-



- Reset to 120 bpm, press:-

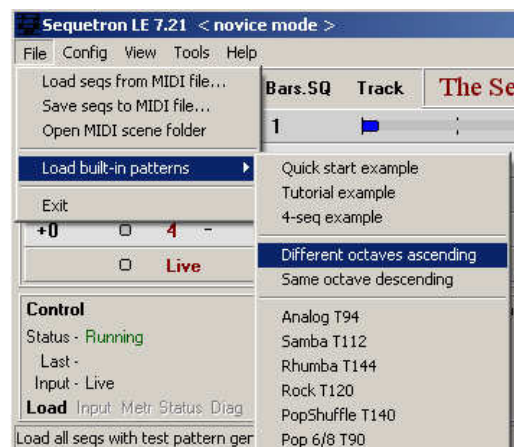


The no. of digits required for a command value depends on its maximum value, e.g. tempo & prog need 3 digits, channel needs 2 digits (01 to 16), port needs 1 digit (1 to 9). Velocity values only needs 1 digit as they have been simplified from MIDI's 0-127 into a more practical 0-9 range.

The input line always shows what each command is expecting, e.g. n? or nn? etc. See the Command Reference for full details.

If you want more practice before moving on to timing & recording, you can pre-load all seqs with a simple test pattern as follows:-

- *Stop all sequences.*
- *Click the menu option 'File, Load built-in patterns...', then choose either of the 'octave' patterns; this will overwrite all seqs with a simple pattern generated using the current time signature.*



Try starting one or more of these sequences at different points in the metronome cycle. The start times are quantised to the Sequence Quantise (SQ) value, described below.

Try using the mute command (D1) instead of play (C#1); this starts the seq(s) if not already running, but they will be muted while remaining in sync with the other seqs. When you next select those seq(s) and press play, they will un-mute at the end of their cycles in perfect sync.

7. CHANGE QUANTISE & TIME SIGNATURE

The timing commands quantise and time signature use values from their own dedicated keys instead of the generic 0-9 keys used above. This reduces the number of key presses, and allows you to only map the timing values you are likely to use.

To simplify the template, the factory settings map both sets of timing values to the same consecutive keys, overlapping the seq-select & numeric keys 0 to 8, but they can be mapped anywhere, in any order. You can also miss out values you are unlikely to use, such as 1/32, 1/40 etc.

The timing keys are used for both 'no. of beats' and 'beat-length' values, so to keep the template simpler, '1/n' also represents 'n'. Some values of '1/n' are invalid as a beat-length as they don't divide exactly into a bar, so these are just marked 'n', e.g. 7 & 9.

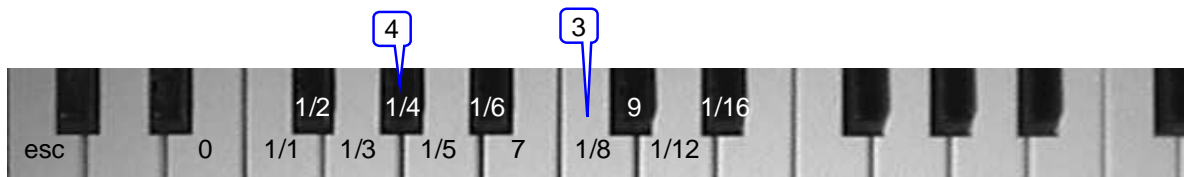
7.1 QUANTISE

This changes both the note quantise (NQ) and seq quantise (SQ) values, so the command needs two 'beat-length' values.

- Change NQ to 1/8 and SQ to 1/4, press keys 1 to 4 in order:-
When you press the quantise command (2), the keyboard flips into quant time mode...



... so the keys are now interpreted as quantise timing values.



The display values NQ & SQ should change in the timing section at the end of the metronome cycle. You won't hear any changes immediately as quantise only affects subsequent recordings and sequence start times.

The 0 value can be used for either the NQ or the SQ value.

- If 0 is used for NQ, it turns off note quantisation.
- If 0 is used for SQ, the command terminates but the value is ignored, so you can use this if you just want to change NQ and leave SQ unchanged.

Other commands are available which do not need extra value keys to be pressed, e.g. NQ-0 switches off note quantise, NQ-8 sets NQ to 1/8, etc. You can use any mix of these variants.

7.2 TIME SIGNATURE

This needs a 'no. of beats' value followed by a 'beat-length' value.

- Change time signature to 3/4, press key 1 to 4 in order:-
When you press the tsig command (2), the keyboard flips into tsig time mode...



... so the keys are interpreted as time signature timing values.



The visible metronome in the display should change at the end of its cycle.
If the audible metronome is playing, it will also change at the end of its cycle.

- Change time signature back to 4/4, press keys 1 to 4 in order:-

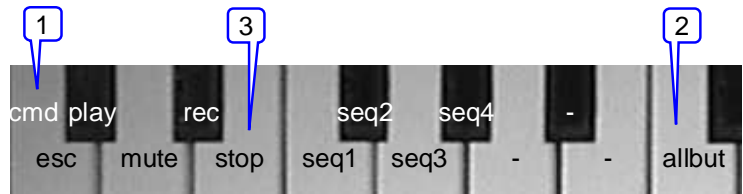


8. RECORD A SEQUENCE

This is trickier as timing is involved, so make sure you have mastered the previous examples before attempting this; you may need two hands!

- If you have any sequences running, stop them first:-

A quick way of selecting all seqs is to use the allbut key, e.g.



- Ensure the time signature is set to 4/4, and quantise is set to NQ=1/8, SQ=1/8.
- Start the audible metronome. *This is not essential as the visual metronome is always running, but it allows you to concentrate on the keyboard & template and not the screen.*
- Get ready to record on sequence 2 by pressing these keys in order:-



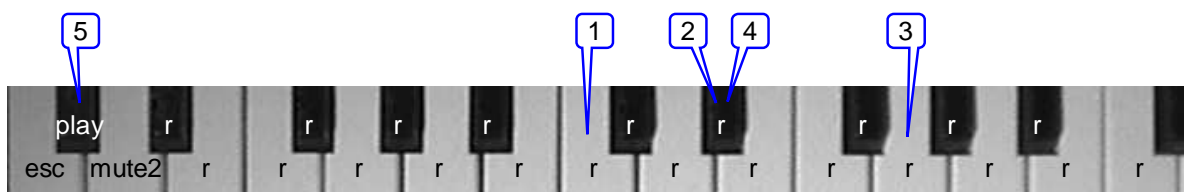
You should see sequence 2 status change from 's' (stopped) to 'r' (record primed), and also change colour as a warning. **Don't press any other keys yet...**

The recording will only start (and the 'r' will flash) when you press the first recordable key, but you need to decide how you are going to stop it (i.e. which key to press) as there are several choices and the seq length is defined by the exact time you press it.

You can either simply stop the recording, and then manually start the sequence later, or do what is shown in the videos where the sequence immediately starts playing at the instant you stop the recording (this is much more impressive if you get the timing right as you get instant loops with a seamless changeover!).

So assuming you want to do the latter, you are going to stop the recording by pressing the play key, so get one finger of your left hand hovering over it ready to press it.

Now you can start recording using your right hand. We'll try a simple 4-note C-minor pattern, so keeping all **5** key presses in time with the metronome and starting on the bar boundary, press the following keys in order:-



You must press the final play key (5) in time with the metronome as this is the crucial key which stops the recording and immediately starts it playing back. This key is quantised by the Seq Quantise (SQ) value.

If you want to record your own notes, keep in mind the first 3 keys (in the factory settings) are used to control the recording so cannot be recorded.

If you press the esc key instead of play to stop the recording, then the recording will stop, but the sequence would stay stopped. You can start it manually at any time using the same technique as before.

If you press mute-2 instead of play, the recording will stop and immediately play muted for 2 cycles, then it would un-mute automatically, giving you a hands-free delayed accompaniment. You need to perfect your timing accuracy during recording otherwise you won't know if it's out of sync till it comes in! The optional sequence length indicators can help to show if you've mistimed a recording (the numeric length column and grid markers are switchable via the View menu).

You can change or add more of these 'stop/play' controls, e.g. play-mute-2 will stop the recording and start it, alternating between play & mute every 2 cycles. You can configure the maps to give you more 'stop/play' variations at the expense of less recordable keys or vice versa... or read the Advanced Operation guide to see how you can have the best of both worlds.

As soon as the keyboard flips back to live mode, you can continue playing alongside your new recording(s).

There are currently no editing facilities, so if you've made a mistake or the recording sounds out of step, then stop the sequence first and repeat the record process; each recording completely overwrites any previous contents.

*You can record any length of sequence; it can be shorter or longer than the metronome bar length; you decide **on-the-fly** during recording when you want to press the 'stop' key, so you can be as creative & impulsive as you like. The quantiser will round off all notes to the nearest note-quantise (NQ) value, and the sequence length to the nearest seq quantise (SQ) value.*

*You must select one or more sequences before recording can be primed, unlike the pitch command, which defaults to **all** sequences if you don't select any. Only stopped sequences will be primed; any running seqs will carry on playing during recording.*

9. PUTTING IT ALL TOGETHER; A PARTY PIECE

This example combines the above techniques and shows how something unexpected can just 'fall out of the keyboard' (to paraphrase Dave Gilmour!).

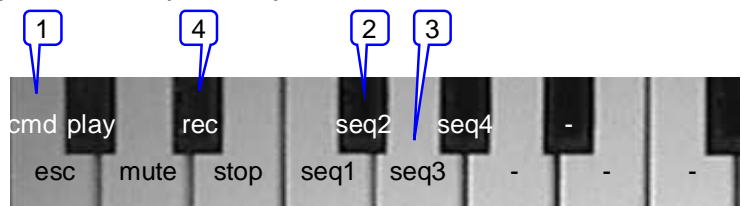
Novice mode must be turned off.

You will need the standard factory key maps, and at least a 3-octave keyboard.

The diagrams for steps which have already been covered are not repeated here, so please refer to earlier sections if you're not sure.

- Ensure timing is reset to: tempo=120, timesig=4/4, quantise: NQ=1/8, SQ=1/8.
- Start the audible metronome.
- Prepare to record onto *two* sequences, seq2 & seq3.

Ensure *both* seq2 and seq3 are primed for recording on the display.

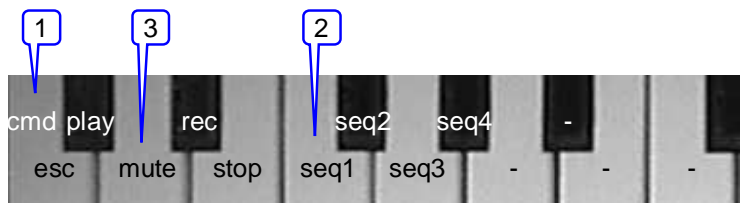


- Counting the cmd key as C1 (octave 1), get ready to record a pattern using the three notes C3, G3 & C4, and get ready to stop the recording using the play key. Now record the following pattern by pressing the **5** keys in order, starting on a bar boundary and keeping them all in time with the beat: **C3, G3, C4, G3, play**.

You should hear the simple 4-note pattern from both seqs looping in time with the metronome. If not, stop the two seqs and try again before proceeding.

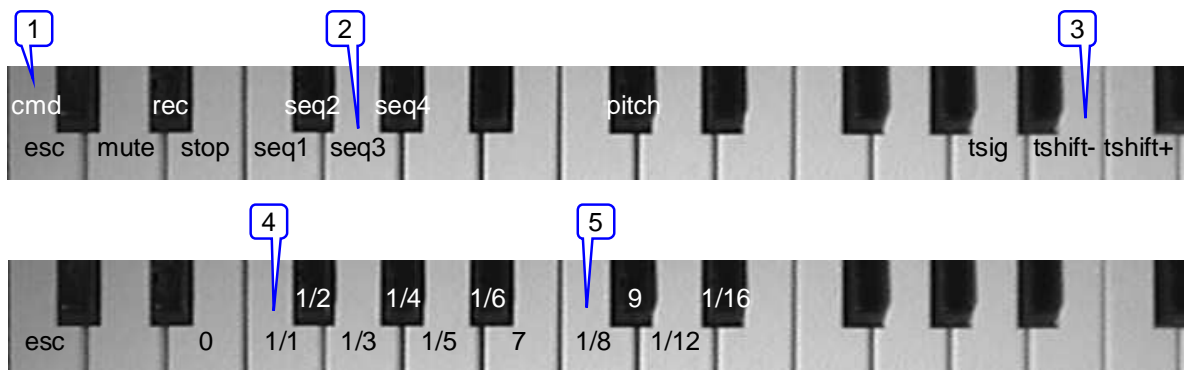
If you can't get the hang of this, the seqs can be loaded from one of the built-in patterns. Stop all seqs, then click 'File, Load built-in patterns, Tutorial' (if you see a warning about the metronome, just click OK).

- Mute the audible metronome:



- Set the tempo to 180 bpm.

- Move seq3 to the off-beat by time shifting it back by 1 x 1/8 note:-



Seq2 and seq3 should now be sounding on alternate half beats. You could have just stopped seq3 and restarted it on the off-beat, but the time shift commands are easier.

- Shift pitch up +3 semitones for *all* sequences.
- Shift pitch back to origin for all sequences.

All ok so far...

- Now shift pitch up +3 *for seq3 only*.

Did you expect this?

- Shift seq3 back to origin.

If you can span the cmd, seq3, and pitch keys with one hand (but still press them sequentially), and then press the pitch offset with the other, you should be able to build up some speed. Try repeating the last two steps faster, allowing say, 2 cycles for each step.

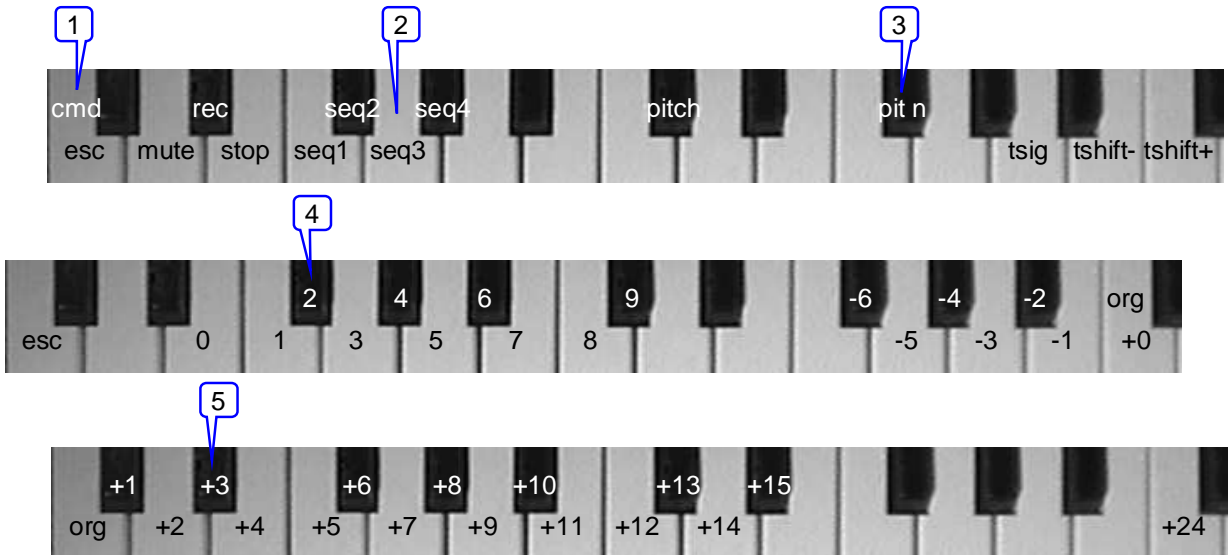
While you're getting the hang of it, you may find it starts doing things all by itself (e.g. if you hit a cyclic command by mistake), in which case you can select the offending seq(s) and stop or reset them.

The Stop command will let the seqs continue playing until the end of their cycles and then stop them, whereas the Reset command will abort/stop the seq(s) immediately. Once the seq(s) are stopped, issue the Reset command (again) to reset all cyclic actions and MIDI attributes.

For safety, the Reset key has to be double-pressed quickly to take effect; you can alter the double-press timing or disable it completely via the config file.

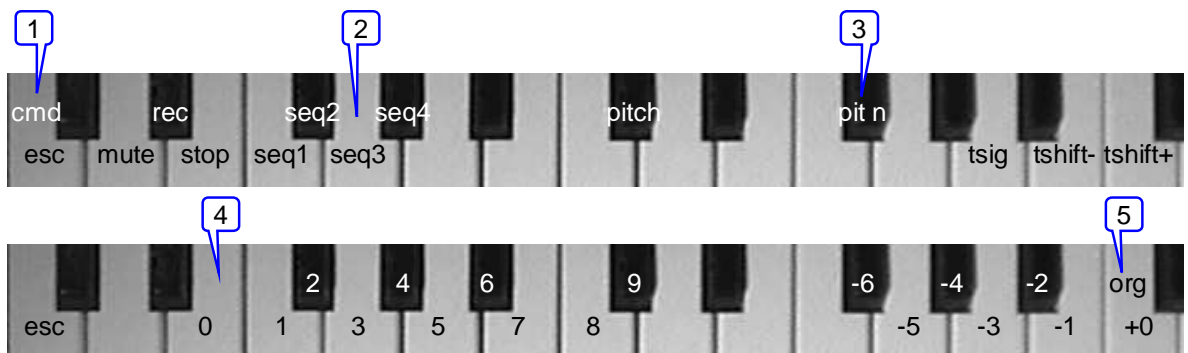
The more advanced cyclic commands allow you to automate this type of effect, leaving you free to experiment more; see the Command Reference for full details.

- Start with seq3 back at the origin pitch, then use the pitch-n command to start a cyclic action every 2 cycles, with a pitch shift of +3 semitones:-



Note the last two keyboard diagrams show **4 octaves**, split at the origin key.

- To reset the cyclic pitch action, use the pitch-n command with a count of 0, and set the final pitch shift as required, e.g. back to the origin:-



The cyclic pitch commands are the most complex ones so far, causing the keyboard to flip through 3 modes before returning to live play (Live > Command > Digit > Pitch > Live), so ignore them for now if they are too confusing!

The Key Mapper can be useful in following the mode changes; click 'Tools, Key mapper'. Each line represents a mode and shows how the keys are interpreted in that mode, lighting up as you press them...

.... but please don't be put off by all this; it all happens in the blink of an eye and will become intuitive after a while – trust me! If in doubt, check out the videos on YouTube or follow the action on Facebook (search for Sequetron).