Polyend Seq

Polyend Seq
MIDI Step Sequencer
User Manual

Introduction

Thank you for purchasing the Polyend Seq. We at Polyend have invested a lot of our attention, time, and hearts in crafting this instrument in order to make the experience as creative and enjoyable as possible for you. We must admit that it's a rewarding process that gives us a lot of pleasure too. It is our hope that this is immediately noticeable for the users of our products, and something that you'll be able to feel as soon as your new Seq unit is running. We did our best to bring you a refreshing approach to classic MIDI sequencing in this a state-of-the-art and modern instrument. We hope you'll enjoy it as much as we enjoyed making it. Have fun!

The Polyend Seq is a polyphonic MIDI step sequencer designed for spontaneous performance and instant creativity. It was made to be as simple and fun as possible for its users. Most functions are available instantly from the main front panel. There are no hidden menus, and all functions on the bright and sharp TFT screen and are immediately accessible. Seq's elegant and minimal design is meant to be welcoming, easy to use, and put all of it's creative potential right at your fingertips.

Touch-screens have become ubiquitous in modern times but they often leave much to be desired. We have strived to make our fully tactile interface easy to operate while using both hardware and software based setups. Our goal was to make a dedicated music instrument rather than a general-purpose composition computer. We've created this tool to allow you to get lost in it while still maintaining overall control at the same time. After you spend some time with this instrument, you should be able to use it with your eyes closed (or even when you're drunk). You will still be able to find your way around. Ok, let us introduce you to your new sequencer, the Seq!

Sit down, relax, take a deep breath, and smile. Open the box carefully and examine your unit thoroughly. What you see is what you get! The Seq is a classic desktop unit. It's glass-sanded anodized aluminum front panel, knobs, bottom plates, and handcrafted oak wooden case make Seq rock solid. These materials are of timeless quality and allowed us to avoid the need for any flashy details, leaving only elegance and simplicity.

The buttons are made of silicone with specially matched density and firmness. Their rounded shape, size, and arrangement were chosen carefully to provide an instant and explicit response. It may take up more room on your desk than a laptop or tablet, but the way its intuitive interface is designed will reward you.

This probably isn't the first sequencer or musical device you've been using, so you'll be able to start fooling around with it in no time! If for any reason you're not feeling confident, let us give you some insight on what you'll be laying your hands on. Use the provided power adapter or USB cable to turn the Seq on. Start by simply connecting Seq to your instruments, computer, tablet, modular system, mobile apps, etc. using one of its inputs and outputs located on the back panel and get started.

The back panel

The Seq is equipped with a wide array of inputs and outputs. This allows you to communicate with a wide variety of devices. Seq also lets you feed tracks with MIDI notes using your other favorite MIDI controllers. While looking at the back panel, from left to right, you will find:

- A **Foot-switch** pedal socket for 6.35mm (1/4" jack) which operates as follows:
  - Single press: Starts and stops playback.
  - Double press: Starts recording.
- Two independent standard MIDI DIN 5 output female connector sockets, named **MIDI OUT 1** & **MIDI OUT 2**.
- One standard MIDI DIN 5 thru female connector socket named **MIDI Thru**.
- One standard MIDI DIN 5 input female connector socket named MIDI In which can either sync clock and input MIDI notes and velocity.
- One **USB** type B socket port for bidirectional MIDI communication for hardware hosts like computers, tablets, various USB to MIDI converters or for example our Polyend Poly MIDI to CV Converter which also can host Seq into the Eurorack modular systems.
- Hidden firmware update button, which functions in use is explained in a section named *Firmware update procedure below*.
- The 5V DC power connector socket.
- And last but not least, the power switch with on and off positions, necessary to power up and power down the Seq.

The front panel
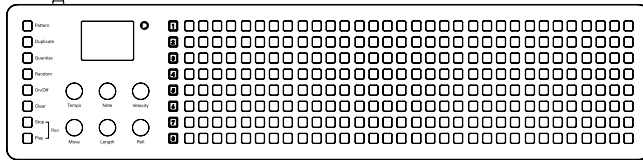
When looking at Seq's front panel from left to right, you will find:

- 8 function keys: *Pattern, Duplicate, Quantize, Random, On/Off, Clear, Stop, Play.*
- A 4 Line TFT Display with no sub-menus.
- 6 Clickable infinite Knobs.
- 8 "Track" buttons numbered "1" through "8".
- 8 Rows of 32 Steps per Track buttons.

The four line display with just one menu level, six clickable knobs, and eight-track buttons. Then right after them, the corresponding eight rows of 32 step buttons which taken together are also storing its 256 preset patterns (which can be linked by the way, so you can create really long and complex sequences, read more about it below). Every track can be recorded step by step or in real time and then quantized independently. To make the workflow easier for you we've implemented a mechanism that remembers the last setting given for parameters like for example the note, chord, scale, velocity and modulation values or nudges for few seconds. So when you'll get faster with Seq programming this function should increase your productivity.

The buttons

One of the best things about the Seq is that anyone with prior experience with a music sequencer will be able to begin using Seq without reading this manual or knowing exactly what most of its functions are for. It was designed to be intuitively labeled and understandable enough to start the fun right away. Pressing a button will turn a step on and off. If you'll keep the step button pressed for a while it will show its current parameters and it will allow you to change them. All changes can be applied at any time, with or without the sequencer currently running on. Let's Begin!
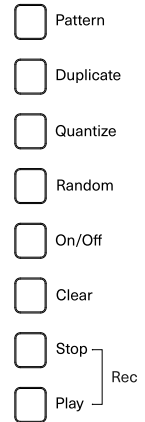
Pattern button:

Store and recall patterns by pressing Pattern button followed by a step button. For example, pressing the first button in track one calls up pattern 1-1, and its number is displayed on the screen. Patterns cannot be renamed, you'll have to remember the patterns by number or visually, but you will get used to that quickly. Pattern buttons are really fun and inspiring when you're pressing them rhythmically in order to jam with different patterns, you might like to try that! Also we've found it as a nice habit to have to backup your favorite patterns by duplicating them into other patterns.

Duplicate button:

Use this function to copy the steps, patterns and tracks. Copy a track with its all parameters like root note, chords, scale, track length, playback type, and so on to another one. We find it inspiring to duplicate and modify the various aspects of the separate track, such as its length and playback direction to create interesting patterns. You can also copy patterns by using the Duplicate function with the Pattern buttons. Just select the source pattern and then press the destination where you would like to duplicate the pattern.

Quantize button:

The steps entered manually on the Seq grid are quantized by default (unless you use the step Nudge function discussed below). However, a sequence recorded from an external controller to a chosen track will consist of those notes with all the micro-moves and velocity - your "human touch" in other words. So if you want to quantize them just hold the Quantize button together with an track button and voila, it's done. Quantization will override any nudged steps in your sequences.

Random button:

Our favorite button and hopefully yours as well! Hold it down together with a track number button to immediately populate a sequence with randomly generated data. The randomization will follow in the chosen musical scale and root note and will create unique sequences on the fly. Using Random button will also apply changes to rolls, velocity, modulation and humanization (nudge) parameters (more below in the knobs section). You can later adjust the number of triggered notes of a roll inside a step by holding down the step button and pressing and turning the Roll knob.

On/Off button:

Use it to simply turn any of the tracks on and off while the sequencer is running. Press On/Off, then sweep your finger down from the top to the bottom of the column of track buttons, this will turn off the ones that are on, and turn on the ones that were turned off at the when moment your finger goes over them. When a track button is lit, that means it will play the contained sequence.

Clear button:

You can instantly erase the contents of a track by using Clear and the track number buttons pressed together. You can also use it with the Pattern button to clear chosen patterns really fast. Make sure you really want to clear a track or a pattern before you use the Clear function! Unless you have duplicated the sequence, the pattern or track data will be lost!

Stop, Play & Rec buttons:

Both Stop and Play are pretty self explanatory but each press of Play button after the first one will reset the play points of all eight tracks. Holding down Stop, then Play, will commence a 4-beat punch-in displayed by step lights on the grid. You can achieve the same effect using the foot switch pedal if you want

to keep your hands free for some reason. You can then record MIDI data from an external controller. Remember that Seq will always start recording from the top or highest turned on track. Recording won't overdub the notes existing on the track already, but may alter them. So it may be a good idea to turn off the tracks with already existing data or changing their incoming MIDI channels in order to keep the sequences unchanged. Seq will only record notes on tracks that are turned on. Once you've recorded a sequence into Seq in this way, you can use the Quantize button to snap notes to grid and make them more rhythmical, just as explained above.

Worth to mention here that there is no metronome in Seq as such. Yet, if you will need to use a metronome to catch a good timing recording your sequences, just set some rhythmical steps on the track number eight (because of the reason explained above), and send them to any sound source. It will behave exactly as a metronome then!

The knobs
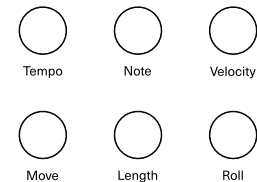
The Seq knobs are convenient clickable encoders. Their step range is based on a sophisticated algorithm that was implemented to improve the workflow. They are precise when you turn them gently, but will speed up when you'll start twisting them a bit more. By pushing them down you're choosing from options displayed on the screen, and then by rotating you'll change parameter values. Use the knobs to access most of the editing features which can be performed on individual steps as well as full tracks (this allows you to subtly or totally alter sequences while they play). Most of the knobs are responsible for individual track and step parameters, and change their options while one of them is pressed.

Tempo knob

The Tempo knob has a global impact and corresponds to each pattern's settings. It can also be used with the track buttons in order to set their advanced MIDI and clock settings. It's functions are as follows:

Global parameters:
- Tempo: Adjusts the pace of each pattern, every half unit from 10 to 400 BPM.
- Swing: Adds that groove feeling, ranging from 25 to 75%.
- Clock: These settings let you choose from internal, locked or external clock over USB and MIDI connection. The Seq clock is a 48 PPQN MIDI standard . Here you can also enable Tempo Lock function which locks the tempo of current pattern for all patterns stored in memory. This might be really helpful for live performances and improvisations.
- Pattern: Displays the two digit number (row-column) which points out on which pattern you are currently working on.

Tempo	120.0
Swing	50%
Clock	Internal
Pattern	1-1

Track parameters:
- Tempo div: Choose a different tempo multiplier or divider per track on 1/4, 1/3, 1/2, 1/1, 2/1, 3/1, 4/1.
- Channel in: Sets MIDI input communication port to All, or from 1 to 16.
- Channel out: Sets MIDI output communication port from channels 1 to 16. Each track can operate on different MIDI channel.
- MIDI Out: Here you can set the desired track output port with or without MIDI Clock output. With following options: Out1, Out2, USB, Out1+Clk, Out2+Clk, USB+Clk.

Tempo div	1/1
Chan in	All
Chan out	3
MIDI out	Out 1

Note knob

When you press down the Note knob together with any of the track/step buttons, you'll hear what sound/note/chord it holds. Seq's grid isn't really made to be played like a keyboard, but this way you can at least playback your chords and steps that already exist in your sequences.

Track parameters:
- Root Note: Allows you to set Track and Scale root note from in between ten octaves, from -C2 to C8.
- Scale: Assigns a specific music scale to a track based on any root note you've selected. Choose from 39 predefined musical scales (see the scales chart). As you tune individual steps, the note choices are confined to the chosen scale. Notice that using a scale on a existing sequence will quantize all of it's notes and notes in chords to that particular musical scale, this means that if you change the track's root note, the note in each step is transposed by the same amount. For example, if you work with a D3 root using the Blues Major scale, changing the root to, say, C3, transposes all the notes down a whole step. That way you can keep your chords and melodies harmonically "glued" together, even if you weren't the best pupil in the music classes back in school.

Root note	F#2
Scale	Phrygian

Step parameters:
- Note: Lets you choose the desired note for the single step you're currently editing. When you have a scale applied to a certain track, you will be able to choose notes from inside the used music scale only.
- Chord: Gives you access to a list of 29 (see the chord chart) predefined chords which are available per step.

Note	F#2
Chord	–
Transpose	0
Link to	–

The predefined chords per step were implemented because when you are recording chords into Seq from an external MIDI controller, they are consuming as many tracks as the chord consists of notes. If the predefined chords that we've implemented to be available per step are too limited for you please remember that you can set another track playing on the same instrument and add single notes in the steps corresponding to the first track's chords and make your own. If adding notes to chords still seems a limited option, try to add whole another chord, maybe this will satisfy your ear.

- Transpose: Changes the pitch of a step by a constant interval.
- Link to: This is a powerful tool which allows chaining to next pattern or between any available patterns. You can put a link in any step on a desired track, when the sequence reaches that point, changes the entire sequencer to a new Pattern. You can link a pattern to itself and achieve a short pattern repetition this way. For example, you can program it so that when your sequence will reach Track's 1, Step 8 you have Seq jump to a new pattern—say, 1-2. Just set half of the tracks off, the pattern won't change as the sequence passes step 8. This feature is really easy to program and lets you nest sudden pattern changes, or plug them in on-the-fly. Link restarts the sequence and plays it from the first step. Link also disables note/chord and vice versa.

Try experimenting with setting different tempo signatures for linked patterns to speed up or slow down a half, this can bring some really cool sound changes in your arrangements!

Velocity knob

The Velocity knob allows you to set up velocity levels for each separate step or the whole track at once. You can also opt to have velocity chosen randomly for a track, while using Random button. You can choose which CC is assigned to which track, and also set the modulation level to Random. You can set one CC communication per track and it's value per step. But in case if that's not enough for you, and you'd like to send more CC modulations on one track and one step (for example when a note is longer than one step, and you'd like to CC modulate it's "tail") you can use another track, and place steps with different CC modulation communicate and velocity set to 0. This opens many more possibilities in case of Seq hardware limitations. But hey, aren't a few limitations something we really dig in hardware devices?

Track parameters:
- Velocity: Sets the percentage of distinction for all steps on the selected track, in a classic MIDI scale from 0 to 127.
- Random Vel: Determines if Random button affects velocity changes for chosen track.
- CC number: Sets desired CC parameter for modulation on desired track.
- Random Mod: Dictates whether or not the Random button is influencing CC parameter modulation on a selected track.

Velocity	100%
Rand vel	No
CC	74
Rand mod	No

Step parameters:
- Velocity: Sets the percentage of distinction for single selected step.
- Modulation: Is responsible for turning on and setting the intensity of CC parameter modulation. From No position, where it's totally turned off, which was necessary for some types of synthesizers to 127.

Velocity	127
Modulation	No

Move knob

This knob gives you ability to move your whole existing sequences back and forth. You can also do the same for every single note. Just press the track button or the desired step button and twist the knob left or right to change their positions. Oh, there's also a cool performance oriented feature - click and hold down the Move knob then indicate the step/s on a track/s you want to trigger - nice!

Track parameters:
- Move: Allows you to swipe a whole sequence of notes existing on a track at once.
- Nudge: Is responsible for gentle micro-moves of all notes contained on the selected track. Nudge disables roll and vice versa.
- Humanize: Lets you choose if Random button is adding Nudge micro-moves for notes in randomized track sequence.

```
Move
Nudge        0%
Humanize    No
```

Step parameters:
- Move: Allows you to swipe a single chosen step in your sequence.
- Nudge: Will gently move the step you're currently editing. The internal per step nudge resolution is 48 PPQN. The nudge is working to the "right" side of the original note placement, you can't nudge the note to the "left" side in Seq.

```
Move         0
Nudge       -2%
```

Length knob

The Length knob can help you create polymetric and polyrhythmic sequences on the fly. To quickly change the number of steps in a chosen track press that particular track button and turn the Length knob or push down the Length knob and choose the track length on the grid, whichever you prefer. The step lights in that track will indicate, from left to right, how many steps you're working on. Use Length to select the Play Mode or to set the Gate length too.

Track parameters:
- Length: Sets the track length from 1 to 32 steps.
- Play mode: Can breath a new life into your already funky sequences. Choose from Forward, Backward, Pingpong and Random playback modes.
- Gate mode: Set gate time for all notes in the sequence (5%-100%).

```
Length       32
Play mode   Forward
Gate mode   100%
```

Step parameters:
- Length: Edits the time span for single edited step (displayed on a grid as step tail).

While working with polymetric drum tracks, especially when changing the lengths of separate tracks on the fly, you'll notice that your sequence as a "whole" made out of 8 separate tracks will get "out of sync". And even when you'll change the pattern to another, the "play points" of your separate track sequences won't reset, something that might look like your tracks went out of sync. It was programmed in this particular way on purpose and is explained in a detailed manner below in the "Few other words section".

Roll knob

Rolls are being applied to the whole note length. Holding down a track number then pressing and turning Roll will gradually fill the track with notes. This can be very useful in creating dance oriented drum tracks on the fly. Holding down a step button while pressing Roll gives you options for the number of repeats and the volume curve. Seq rolls are fast and tight and velocity curve configureable. The most convenient way of deleting an existing roll value on a step is to turn that particular step off and back on.

Track parameters:
- Roll: When applied to a track, Roll adds steps with an assignable interval between them. Roll disables nudge and vice versa.

Step parameters:

- Roll: Sets divider on 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/16.
- Velo Curve: Chooses velocity roll type from: Flat, Increasing, Decreasing, Increasing-Decreasing, and Decreasing-Increasing, Random.
- Note Curve: Pick a note pitch roll type from: Flat, Increasing, Decreasing, Increasing-Decreasing, and Decreasing-Increasing, Random.

| Roll	1/1
Velo curve	Inc
Note curve	Random
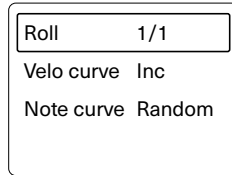
Using Seq with external controllers

Seq is capable of receiving and recording notes (including note length and velocity) from various external controllers. To record incoming communications, simply connect your external gear via MIDI or USB port, highlight one or more tracks you want to record on, hold down the Stop and Play buttons together to start recording. Then proceed with playing on your external gear. Please remember that as we've mentioned above, Seq is by default recording incoming notes starting from the top rows of tracks. Also, note that recording, for example, a three-note chord will consume three tracks. We know it's a lot, that's why we've decided to implement predefined chords which can be placed on one track.

You can record notes from an external controllers directly into a step. Just hold down the desired step on Seq grid and send the note. The same rule applies to chords, you just need to hold steps on few tracks at the same time.

There's also one more cool trick you can perform! Hold one or more track buttons and send a MIDI note from external gear to change the root key of an existing sequence of notes. You can do this "on the fly", there's no need of stopping playback. The interesting fact of using this is that it turns Seq into some kind of a polyphonic arpeggiator, as you can change the root notes for the separate tracks while they're on the run!

Meet Poly
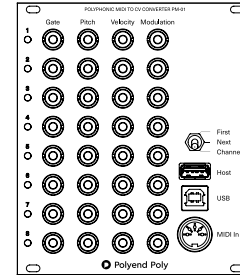
Initially when we started works on early Seq designing, we planned a full set of 8 CV channels of four outputs of gate, pitch, velocity, and modulation located on the back panel. At the same time, we realized we wanted Seq to have a sturdy hand-crafted wooden chassis. After we prototyped the unit we came to the conclusion that the beautiful oak texture looks strange with all these little holes in it. So we decided to take out all the CV outputs from the Seq housing and made a separate instrument out of it.

What came out of that idea grew up beyond our expectations and became a standalone product called Poly. Poly is a Polyphonic MIDI to CV Converter in the Eurorack module form. Call it a breakout module, a new standard in connectivity which supports MPE (MIDI Polyphonic Expression). Poly and Seq are an ideal couple. They supplement and complete each other, but also make out just great on their own.

The Poly is a 22 HP module that is able to fit a vast array of inputs and outputs, provides the user with the freedom to connect all sorts of sequencers, digital audio workstations, keyboards, controllers, laptops, tablets , mobile apps and more! The only limit here your imagination. The inputs available inputs are MIDI DIN, host USB type A, and USB B. All three of them can be used at the same time. Poly opens the modular world to a digital world of MIDI and can do magic together with Seq and all the music gear you already have. Depending on what you want to achieve, there are three modes you can choose from: First, Next and Channel. Both First and Next modes are perfect for building your own unique polyphonic synthesizer. In Channel mode a DIP switch on the back panel lets

you choose between MIDI channels 1-8 or Notes C-G that are directed to corresponding CV voices.

Remember that your Seq can be the heart of your sophisticated hardware rig, but will also do great with your favorite DAW. You can even power up Seq from a tablet or a smartphone using one of many available adapters!

Firmware update procedure
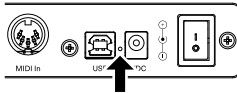
In case of any problems or noticed bugs in Seq, please make sure that you have the newest firmware version installed. We are doing our best to keep our products updated and maintained, that's why from time to time we post firmware updates which you can find and download from the polyend.com website in the support section. Don't worry, the firmware update won't affect your patterns and data stored in Seq. To commence the procedure you will need something thin and long like an unbent paperclip for example. You'll need it to press a hidden button which is located on the Seq back panel to allow the loader to flash the firmware. It's about 10mm below the surface and will "click" when pressed, so you'll be able to feel it. The loader will proceed visibly on the screen and Seq will restart after the procedure. The loader supports devices with both macOS (from Snow Leopard v10.6 to upper versions), and Windows (from XP version thru any higher version). While flashing your Seq try to have your computer plugged into a power source. After downloading the loader file proceed exactly with steps given below.

1. First of all, make sure to disconnect the power supply and have Seq to your computer using USB cable only!
2. Turn the Seq on.
3. Execute the firmware loader file.
4. The terminal window will appear.
5. Press the upgrade hidden button on the Seq back panel, it's located right next to the on/off switch, use something like a paper clip.
6. Seq will restart and show new firmware version once the upgrade is complete.

Don't sweat in case of any trouble (like for example you've skipped the first step), the whole procedure can be repeated. Problems during the process (like power shortage) will not brick the unit. The change log and archive versions (in case you'd need to revert to an older version) of firmware are contained in the loader package. Currently there is no way to dump MIDI data from your Seq unit, but you can always easily record all your sequences into any DAW of your choice.

Few other words

There are few more things worth mentioning about our product. For example, Seq autosaves every slight change you make to your sequences and patterns. Implementing an "undo" function would have been very complex. Since we wanted to keep things simple, we've decided not to add an undo function. This solution, like everything else, has it's pros and cons but we much prefer this workflow. So many times while working with other sequencers we've forgotten to save our sequences before switching to the next one and lost them - Seq works in just the opposite way.

Also, we've opted to simply name the Patterns with numbers because we wanted this to be simple. Naming the patterns from a knob, letter by letter gives us shivers. We think that while working with our instrument you'll be able to remember visually where you have patterns stored even after a long time.

After spending some time with Seq, especially while playing with different track lengths and polyrhythms, you will surely notice the unusual "reset behavior". Something that might look like your tracks went out of sync. It was programmed in this particular way on purpose, and it's not a bug. Even if we like to program dance-oriented 4x4 tracks from time to time, we've also tried to keep in mind other music genres too. We love improvised, ambient, and experimental genres where this function of Seq is really useful. We're so up to the eyes with a music world dominated by DAW's and strict grid sequencing, where everything is perfectly synced up to the bar/grid and always in time, that we wanted to free ourselves up from that. This is the purpose of why Seq works like that. That also gives you a unique option to achieve a nice "human touch" effect when jamming with your patterns. Another thing is that Seq changes the patterns exactly when a new pattern button is pressed, patterns don't change at the end of a phrase. I guess it's just a matter of getting used to it. Yet, you can always restart the play points by pressing the play button while the Seq is already running.

If you're not a big fan of this solution, please remember that you can use link to function anytime on the fly, and then your track sequences will get restarted and play straight from the beginning. Future firmware updates might bring

a feature of different "reset behavior" modes, and you'll be able to set if you want Seq to wait for the change of a pattern to the end of a whole phrase, just like in every other sequencer existing on the market already.

If you'd be into let's say programming an "acid" bass line and would be looking to make slides or pitch bends. Legato is usually a function of a synthesizer not necessarily a sequencer. But you can achieve it easily by using more than one track in Seq for the same controlled instrument. So here again we have a hardware limitation that can be easily overcome by some not so usual approach.

Endnote

Thank you for taking your precious time to read this manual. We're pretty sure that you knew most of this before you've even started reading it. As we've mentioned before, we're always into improving our products, we're open minded, and always into hearing about other people ideas. There's a lot of interesting requests out there about what Seq should and should not do, but it doesn't necessary mean that we're into implementing them all of them. The market is rich in feature loaded hardware and software sequencers that can outshine our Seq with many exotic functions. Yet, it doesn't really make us feel like we should follow this path or copy existing solutions into our product. Please keep in mind that our main goal was to make an inspiring and simple instrument with what you see is what you get interface, and we want it to stay that way ;)

Sincerely yours
Polyend Team

Limited warranty

 Polyend warrants this product, to the original owner, to be free of defects in materials or construction for one year from the date of purchase. Proof of purchase is necessary when warranty claim is made. Malfunctions resulting from improper power supply voltages, backwards or faulty cable connection, abuse of the product or any other causes determined by Polyend to be the fault of the user are not covered by this warranty (normal services rates will be applied). All defective products will be replaced or repaired at the discretion of Polyend. Products must be returned directly to Polyend with the customer paying the shipping cost. Polyend implies and accepts no responsibility for harm to person or apparatus through operation of this product. Please contact hello@polyend.com for return to manufacturer authorization, or any other technical questions/concerns. Thank you!

MIDI implementation

Seq sends out the standard MIDI communicates including transport, ten octaves of notes from -C2 to C8 with velocity and CC signals from 1 to 127 with modulation parameter. Seq will receive transport when it is set to external source as well as notes with nudges and their velocity. Swing parameter is not accessible while Seq works on external MIDI clock, in this setting, Seq won't send or receive swing from external gear. There is no MIDI soft thru implemented.

The MIDI over USB is fully class compliant. The Seq USB micro-controller is full-/low-speed On-the-Go controller with on-chip transceiver. It is working in 12 Mbit/s Full Speed 2.0 and has 480 Mbit/s (High Speed) specification. And is fully compatible with the low speed USB controllers.

Technical specifications:

- Seq body dimensions are: width 5.7″ (14.5cm), height 1.7″ (4.3cm), length 23.6″ (60cm), weight 4.6 lbs (2.1kg)
- The original power adapter specification is 100-240VAC, 50/60Hz with interchangeable heads for North/Central America & Japan, China, Europe, UK, Australia & New Zealand. The unit has a + value in the middle bolt and - value on the side.
- The box contains: 1x Seq, 1x USB cable, 1x Universal power supply and this manual.

Music scales chart

Name	Abbreviation	Name	Abbreviation
No scale	No scale	Hungarian Minor	Hung Min
Chromatic	Chromatic	Ukrainian	Ukrainian
Minor	Minor	Marva	Marva
Major	Major	Todi	Todi
Dorian	Dorian	Whole Tone	Wholetone
Lydian Major	Lyd Maj	Diminished	Dim
Lydian Minor	Lyd Min	Super Locrian	SuperLocr
Locrian	Locrian	Hirajoshi	Hirajoshi
Phrygian	Phrygian	In Sen	In Sen
Phrygian Dominant	PhrygDom	Yo	Yo
Mixlydian	Mixlydian	Iwato	Iwato
Melodic Minor	Melo Min	Whole Half	WholeHalf
Harmonic Minor	Harm Min	Kumoi	Kumoi
BeBop Major	BeBopMaj	Overtone	Overtone
BeBop Dorian	BeBopDor	Double Harmonic	DoubHarm
BeBop Mixlydian	BeBop Mix	Indian	Indian
Blues Minor	Blues Min	Gipsy	Gipsy
Blues Major	Blues Maj	Neapolitan Major	NeapoMaj
Pentatonic Minor	Penta Min	Neapolitan Minor	NeapoMin
Pentatonic Major	Penta Maj	Enigmatic	Enigmatic

Chords chart

Name	Abbreviation	Name	Abbreviation
Dim Triad	DimTriad	Dom 7	Dom7
Dim7	Dim7	Major 7	Maj7
HalfDim	HalfDim	Sus 4	Sus4
Sus2	Sus2	Sus 4 b7	Sus4 b7
Sus2 #5	Sus2 #5	Sus 4 Maj7	Sus4Maj7
Sus2 add6	Sus2add6	Sus #4	Sus #4
Sus2 b7	Sus2 b7	Open5 (no3)	Open5
Sus2 Maj7	Sus2Maj7	Open4	Open4
Minor	Min	Stack5	Stack5
Minor b6	Min b6	Stack4	Stack4
Minor 6	Min6	Aug Triad	AugTriad
Minor 7	Min7	Aug add 6	Aug add6
Minor Maj7	MinMaj7	Aug b7	Aug b7
Major	Maj	Aug Maj7	AugMaj7
Major 6	Maj6		