

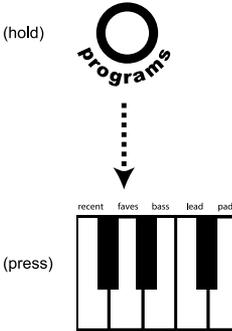
micron

Reference Manual

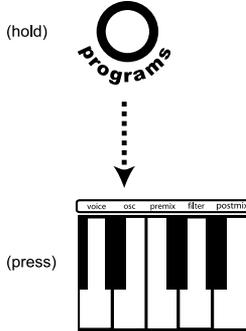
ALESIS

Micron Shortcuts

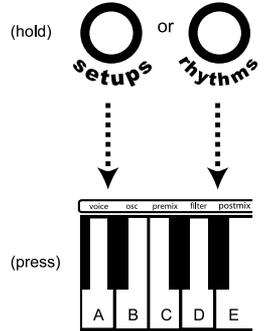
Jump to a program category...



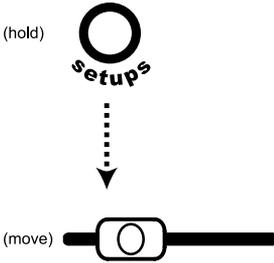
Jump to a program parameter...



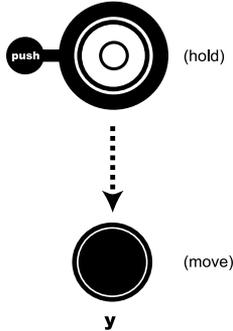
Browse through parts or drums...



Assign a controller or knob to a part...



Map a program parameter to a knob...



Reset a parameter to its default...

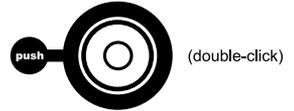


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Introduction

Welcome!

Congratulations on your purchase of the Alesis Micron! The Micron is a powerful, 8-voice Analog Modeling synthesizer based on the award-winning sound engine of the larger Alesis Ion.

The Micron has every bit of sound-producing DSP horsepower contained in the Ion along with a few tricks of its own. The Micron's front-panel interface is streamlined to give you full access to its Analog Modeling power while meeting the demanding requirements of real-time performance. Not only synth patches but melodic patterns and drum beats also are available to you in most cases simply by pressing a button and turning a knob. You can create sophisticated rhythms combining up to ten different sounds. You can create really rich setups combining as many as 26 different programs with anywhere from 0 to 26 different rhythms, all simultaneously active.

This is an exciting time for analog-style synthesizers. After a period of relative neglect brought on by the appearance of sample-playback digital synths (which excel at realistic mimicry of various sound sources), the unique sounds of analog-style synths have been rediscovered. Analog Modeled basses dominate certain styles of music, and other analog-type elements – from drums to leads to pads – are frequently heard in contemporary popular music.

Alesis has been at the center of this resurgence. Our first product in the line was our A6 Andromeda, a true analog synth considered by many to be the most powerful non-modular analog synthesizer ever made. Next came the Alesis Ion, praised as one of the most powerful and best sounding Analog Modeling synthesizers ever. Now, the Micron furthers this legacy, taking the Analog Modeled synthesizer in yet another new direction.

Please be sure to register your Micron at the Alesis website, www.alesis.com. And since the Micron's operating system is upgradeable via MIDI, try to check the site once in a while for updates and extra goodies.

We hope and trust that you'll find the Micron to be an inspiring instrument that you can turn to again and again for new ideas, new sounds, and new inspiration.

Sincerely,
The people of Alesis

For more effective service and product update notices, please register your Micron online at:

<http://www.alesis.com/support/warranty.htm>

Introduction

Unpacking and Inspection

The shipping carton for your Micron should contain the following items:

- Micron synthesizer
- AC power adapter
- This instruction manual
- A warranty card

Please log on to the Alesis website at www.alesis.com to register your new Micron synthesizer. This will help us give you the best support we possibly can.

How to Use This Manual

We're sure you'd like to jump in and start using your Micron quickly. To help you do this, refer to Chapter 1 for hook-up instructions, and then read Chapter 2 – “First Session.” This will get you playing in no time. If you have any questions, refer to the Frequently Asked Questions in Appendix A on page 101.

Chapters 3 through 6 cover the main operating modes of the Micron – the *patterns*, *rhythms*, *setups*, and *programs*.

For information on using the Micron along with other MIDI devices, refer to Chapter 8 “MIDI.”

Near the end of the manual are troubleshooting tips and specifications.

The names for all buttons, knobs, and wheels on the Micron are formatted throughout the manual so as to be easily identified. Here are some examples:

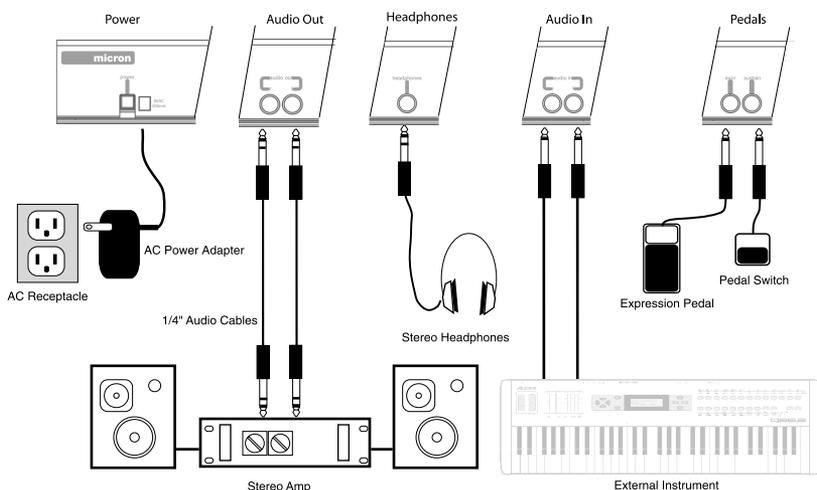
- | | |
|-------------------|---|
| [setups] | The top panel buttons are bolded and [bracketed] . |
| (m1) | Wheels, knobs, sliders, and rear-panel jacks are bolded and placed in (parentheses) . |
| Parameters | Editable parameters are bolded . |
| <i>length</i> | Specific settings for various parameters are <i>italicized</i> . |

Helpful tips and advice are highlighted in a shaded box like this.

When something important appears in the manual, an exclamation mark (like the one shown at left) will appear with some explanatory text.

1 Connections

Connection Diagram



Connecting AC Power

Before making any power connections, make sure the Micron's power switch is turned off. Then plug the adapter into the Micron and into a wall outlet.

Making Audio Connections

- **Stereo outputs.** Connect two cables from the Micron's left and right outputs to two inputs of an amp or mixer.
- **Headphones.** Plug a set of headphones into the headphone jack on the rear panel.

Connecting the Foot Pedals

The Micron has two pedal jacks marked **(sustain)** and **(expr)**. Plug a sustain pedal (not included) into the jack marked **(sustain)**.

(sustain) is designed to work with any standard momentary footswitch. It doesn't matter whether the footswitch is normally open or closed, as long as you plug it in before powering up your Micron; the instrument will calibrate itself.

(expr) is designed to work with a Roland EV-5 pedal or equivalent.

WARNING: When connecting audio cables or turning power on and off, make sure that the amplifiers in your system are turned off or the volume controls are turned down. If you don't do this, you can create loud bursts of sound that might damage your speakers.

NOTE: If your sustain pedal response is backward (i.e., notes sustain when your foot is off the pedal), turn off your Micron and make sure the footswitch plug is fully inserted into the **(sustain)** jack. Then, turn the Micron back on while keeping your foot off the footswitch.

1

Connections

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Performance buttons

The buttons in this cluster switch octaves, set the tempo, and perform other performance-related functions.

Display

Information relevant to the current operation is shown here.

Control knob circle

These are the Micron's most important controls – the control knob and the buttons that surround it. Pressing one of these buttons – **[programs]**, **[setups]**, **[config]**, **[patterns]**, or **[rhythms]** – puts you into one of the Micron's primary modes of operation. Turning the control knob then cycles through options. Pressing the control knob allows for editing.

Key concepts

Here are the Micron's most important concepts:

Programs

Programs are the Micron's sounds, built from its oscillators, envelopes, filters, modulation matrix, and other analog-style components.

Rhythms

Rhythms are combinations of drum programs with patterns. Think of a drum machine with its interchangeable sounds and patterns. That's pretty close to what rhythms are.

Patterns

Patterns are repeating melodic and/or rhythmic motifs. Arpeggios and step sequences are examples of patterns.

Setups

Setups combine multiple programs, rhythms, patterns, and more. They are the Micron's most powerful and most sonically sophisticated element.

Navigating with the transparent control knob and its buttons

Use the transparent control knob to the right of the display and its surrounding circle of buttons to navigate through the Micron's options. Most Micron functions involve pressing the buttons and then turning or pushing this knob.

“Green Light/Red Light”

The buttons circling the control knob glow green when selected and glow red when the control knob has been pushed (entering edit mode).

The exception is the **[config]** button. **[config]** only glows red, since it only performs editing functions.

At any one time, only one of the buttons will glow, indicating that the Micron is operating within that mode.

“Turn”

Turn the control knob to cycle through various options.

“Push”

Push the control knob to edit the option displayed. Push again to stop editing. See the following visual illustration:

Play the Programs

The Micron's basic sounds are called "Programs." Play some of these programs now.

Find the **[programs]** button on the right side of the top panel. Press it; then spin the control knob. Notice how the programs are organized by category – first basses, then leads, then pads, etc.

Turn the volume up and listen to some of these programs. Experiment with the **(pitch)** wheel, the **(x/y/z knobs)**, and the two sliders. Here are a few points to note:

- The **(pitch)** wheel glows progressively brighter as you turn it.
- The **(x/y/z knobs)** do different things depending on the Program. Sometimes, they increase or decrease the quickness of the attack. Sometimes, they change the tone by adjusting the filter resonance. Each time you change Programs, the **X/Y/Z knobs** reset to their original positions.
- The **(m1)** slider typically – but not always – adds vibrato.
- The **(m2)** slider typically – but not always – sweeps the filter frequency, radically changing the tone.

Play some notes before, during, and after moving the **(m2)** slider. You'll most likely hear the classic analog synthesizer "filter sweep" sound.

Navigate through the programs

Rotate the control knob enough, and you'll pass through 13 categories of programs. At the end of the list, all of the programs are presented alphabetically, regardless of category.

Using the **[programs] + white key shortcut**

Notice the red text just above the keyboard. This text corresponds to the 13 categories and also includes the *all*, uncategorized listing. To access a category instantly, hold down **[programs]** and then press the associated white key.

Special categories

All

As we've already seen, the *all* category is an alphabetical listing of all the Programs.

Recent

The Programs you've played recently are stored for you automatically under the Recent category. They are still listed under their primary categories. This is a duplicate listing to allow for super-fast access. Note that you cannot directly edit this listing. You need to select and then play the Programs you want to be listed here.

Faves

● Adding Programs to Faves

When you find a Program you particularly like, add it to the Faves ("Favorites") category. In **[programs]** mode, press the control knob to enter edit mode. You will be prompted to *Add to faves?* Press the control knob once again to add the Program to the Faves category.

Press the **[programs]** button again if you want to cancel this action and exit the editing screens.

● Removing Programs from Faves

To remove a Program from the Favorites list, call up the program and press the control knob. You will be asked, *Remove fave?* Press the control knob to perform the action.

Switch Octaves

While the Micron is a compact unit, all of its sounds span the full 128-note MIDI range. Use the **[octave]** buttons to the left of the display to transpose the keyboard up and down to cover that range.

Notice how one or the other **[octave]** lights glows progressively brighter as you push it. This provides a visual indication of the current octave setting.

Press both **[octave]** buttons simultaneously to return to the default octave setting.

Explore the Built-in Patterns

The Micron features a powerful pattern sequencer with lots of editing capabilities. We'll discuss the editing features later. For now, let's get our feet wet playing some patterns.

Press the **[patterns]** button to the left of the display.

Turn the control knob to cycle through various preset patterns. Play the keyboard to hear them.

[tap]

Tap the **[tap]** button to the left of the display. Watch and hear how **[tap]** controls the tempo. Note that the pattern's tempo immediately locks to the speed at which you tap.

To adjust the tempo with finer control (one-tenth of a beat per minute), hold down the **[tap]** button and turn the control knob left or right to slow down or speed up. The display will indicate the current tempo.

[latch]

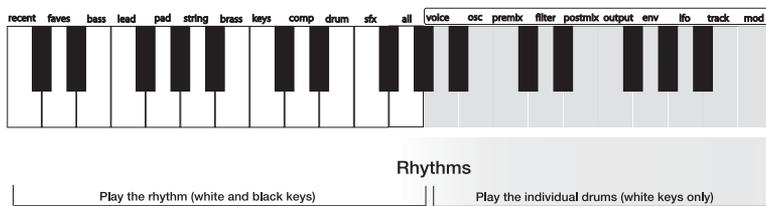
Press the **[latch]** button, also to the left of the display. Remove your hands from the keyboard. The pattern keeps playing.

Press **[latch]** again to stop the pattern from playing.

Explore the Rhythms

Rhythms combine drum/percussion programs with specifically designed rhythm patterns.

Press **[rhythms]**. Turn the control knob to cycle through different rhythms.



- **To play a rhythm**

Press and hold any key from the bottom of the keyboard up to the middle G#. (These are the keys labeled from *recent* through *all*.)

- **To play a rhythm's individual drum sound**

Press one of the white keys from middle A (labeled *voice*) upward.

The keyboard's middle A corresponds to the rhythm's Drum A. The next higher note, B (labeled *osc*), corresponds to Drum B. Proceeding higher, drums C, D, E, etc. are triggered. Any keys higher than the rhythm's highest note will do nothing.

- **To play a rhythm hands free**

Press any key from middle G# down on the keyboard. While holding down that key, press **[latch]** to keep the rhythm going. Press **[latch]** a second time to stop the rhythm.

- **To change the tempo**

Tap the **[tap]** button a few times, or hold down **[tap]** and turn the control knob.

- **To change to a different rhythm**

Turn the control knob to change the rhythm. The newly selected rhythm will begin to play once the last rhythm reaches the end of its cycle. (To make the newly selected rhythm begin playing immediately, press any key from *all* downward.)

Each rhythm's sounds, relative sound levels, left/right panning, rhythmic patterns, time signature, duration, quantization, and name can be edited. (We'll leave the editing for a later chapter.)

Explore the Setups

Press **[setups]** to explore this mode – the most sophisticated mode of the Micron.

Setups combine the following elements:

- Multiple Programs.
- Multiple Patterns.
- Multiple Rhythms.
- Splits (like placing a rhythm on the left side of the keyboard, a bass program in the middle, and a lead program up top).
- Latch on/off settings.
- Semitone transpositions.
- Level and left/right panning.
- Effects settings.
- Controller assignments.

Once you've mastered setups, you've mastered the Micron! In this first session though, simply press the **[setups]** button, twirl the control knob a few times, and listen to the various presets. Be sure to play throughout the keyboard range to experience the various splits, layers, and rhythm triggers. These presets will give you a good sense for some of the different possibilities you can create on your own.

Record Some Phrases

You don't have to be in Patterns mode to create a pattern. At any time, the Micron can capture your playing and use it as a pattern.

Press **[programs]** to enter Programs mode. Hold down the **[phrase]** button and start playing a riff. As soon as you hit the first note, the **[phrase]** button will start flashing, indicating that it is recording what you play. You can release the **[phrase]** button any time after you've played that first note.

When you are done playing the phrase, press the **[phrase]** button again. The button will light, indicating that the Micron is ready to play your phrase back. Press any key, and you'll hear your phrase loop to the tempo.

You can press the **[phrase]** button to turn phrase playback on or off. To record a different phrase, just hold down the button and start playing.

In Setups mode, it gets a little more complicated, since each part can have its own phrase. But the basic idea is the same -- hold down the **[phrase]** button and start playing. Whatever part or parts you play on will get their own phrases. To record a phrase and clear all of the other phrases, hold down **[phrase]** and start recording when the button is unlit. To add the phrase to the existing phrases, start recording when the button is already lit.

A phrase is stored as a pattern named “* Phrase”, which appears near the beginning of the patterns list. If you record a phrase that you really like and want to keep, simply find the “* Phrase” pattern and give it a new name. You will see how to do that in later chapters.

Connect External Instruments

You can connect external audio sources – other synthesizers, mixers, guitars, etc. – using the ¼-inch (**audio in**) jacks on the back of the Micron. The jacks accept either balanced or unbalanced cables.

Your external audio can be blended in with the Micron's internal sound-producing oscillators. The resulting combination is then sent through the Micron's filters and effects.

Use both jacks for stereo input. Use the (**left**) jack for mono-only sources (in which case the input will be sent to both the left and right channels).

A special group of programs – including vocoder programs – exists just for use with the external inputs. These programs begin with “*” and are accessible at the beginning of the *fx* Program category.

See page 65 to learn about the Micron's filter parameters.

Whew!

We've covered a lot of material. Hopefully now you feel comfortable navigating around the Micron. Future chapters will cover editing, MIDI, and other more advanced features. But if you want to throw this manual on the fire now and simply enjoy playing your Micron, no one will blame you. You've got the basics well at hand.

Playing Patterns

Patterns are repeated melodic figures that you trigger from the keyboard.

Press **[patterns]** near the control knob. To cycle through different patterns, turn the control knob. The pattern will change, with the current pattern name shown in the display.

The pattern continues playing as long as you hold down the key.

Using [latch]

Press **[latch]** to keep the tempo steady as you shift between notes.

Press **[latch]** again to stop the pattern from playing.

Using [tap]

Tap the **[tap]** button to increase or decrease the speed of the pattern. To adjust the tempo with finer control, hold down **[tap]** and turn the control knob. The display will indicate the precise tempo.

Pattern options:

```
Revert → stored?
(Bobbetty)
```

```
Send to setup?...
→ Bass/LeadSplit
```

```
Start new setup?
→ +Bobbetty
```

```
Pattern program
JacoInTheBox
```

```
Pattern length
1 bar
```

```
Pattern grid
16 steps/bar
```

```
Pattern type
arpeggio
```

```
Arpeggio span
±1 octave
```

```
Arpeggio order
octave down
```

```
Record pattern?
<Push or Play...>
```

```
1:1:0 (A+1) ■
#####
```

```
Clear controls?
(Bobbetty)
```

```
Clear pattern?
(Bobbetty)
```

```
Pattern name: 1
[Bobbetty ]
```

```
Send MIDI sysex?
(Bobbetty)
```

```
Send syx bundle?
(Bobbetty)
```

```
Store as copy?
(67% free space)
```

```
Delete pattern?
(Bobbetty)
```

Pattern Types: Arpeggios and Sequences

A pattern can be set to one of two types: “arpeggio” or “sequence”.

Arpeggios and sequences both respond to a keypress by playing a series of notes over a programmed rhythmic pattern. The difference lies in which notes they play.

An arpeggio loops over whatever notes you are holding down on the keyboard. If you hold down a chord, the Micron will generate a melody by playing each note of your chord individually.

A sequence, on the other hand, already has a melody line built in. So, all you have to do is hold down a single key, and the Micron will play back that melody relative to that key. Pressing another key will transpose the sequence.

A pattern can easily be switched from an arpeggio to a sequence, and vice-versa. The underlying rhythmic pattern is kept the same - all that changes is whether the pattern plays the notes you hold down or the notes it was recorded with.

If the distinction is unclear, choose your favorite pattern, toggle its “type” parameter between “arpeggio” and “sequence” (see page 24), and try playing it both ways.

Phrases versus Patterns

In Programs and Setups modes, the Phrase button lets you quickly record and repeat a riff or melody line. Phrases are designed to be used “live”, when inspiration strikes as you’re playing.

A phrase is nothing more than a pattern that was recorded using the Phrase button. In fact, the most recently recorded phrase is stored as a pattern named “ Phrase”. If you happen to record a phrase that you really like and want to hang on to, simply find the “* Phrase” pattern and give it a new name.*

Editing Patterns

Choose an existing pattern to edit by pressing the **[patterns]** button and turning the control knob. Hold down any key to play the pattern. (Use the **[tap]** button to change the tempo.)

Once you've found a pattern you want to edit, press the control knob to enter edit mode. Turn the control knob to cycle through the different options. Press the control knob to toggle in and out of editing the current parameter.

Here are the pattern editing options:

1. Revert-to-stored? / Unrevert-to-edited?

If you have edited a pattern, you may revert back to the original version. Press the control knob to revert.

Go back to your edited state by press the control knob a second time to *unrevert*.

Use *revert* and *unrevert* often in order to compare your changes to the original pattern. When you're satisfied with your work, press **[store]** to save your changes.

Store your pattern

The [store] button will light once you have edited a pattern.

Press [store] after you're satisfied with your edits. Otherwise, your changes will be lost when you turn off your Micron.

2. Send to setup?

Pressing the control knob at this option sends you to [setups] mode and allows you to make this pattern a part of the last-selected setup.

If the setup does not have any parts, this pattern is automatically assigned to the setup's part A.

If the setup already has one or more parts, you will be able to add the pattern in one of the following ways:

1. **send to part.** The setup's part will use this pattern. Remember that a part uses both a program and a pattern. If the part's program is set to "(pattern's pgm)", then the pattern will sound just as it does in Patterns mode. Otherwise, the setup will play the pattern using the part's own program.
2. **layer.** The setup's existing part is duplicated, resulting in a new part. The pattern is then sent to the new part.
3. **split low.** The setup's existing part is split in two at a particular key.

The Micron prompts for a note on the keyboard at which to execute the split. The pattern is then sent to the lower part of the split. Every note *below* the one you select will use this new pattern. Every note *including and higher than* the note you select will use the setup's existing part.

The new part is assigned the next letter after the split part. For example, if the setup contains parts A, B, C, and D, and part B is the part that gets split, then part C will be the newly-added part. All later parts' letters are incremented by one.

To select the split point, turn the control knob or play a key. You can use the [octave] buttons if your desired split point is outside of the current key range.

4. **split high.** The setup's existing part is split in two at a particular key.

As with the *split low* option, the Micron prompts for a note on the keyboard at which to execute the split. The pattern is then sent to the upper part of the split. Every note *above* the one you select will use this new pattern. Every note *including and lower than* the note you select will use the setup's existing part.

Send to setup only allows the option of sending the pattern to the current setup. Therefore, you may need to jump out of pattern editing to choose a setup before returning to patterns and following this procedure.

How part letters change when "layer," "split low," and "split high" are used
When parts are layered or split high, the new part is assigned the next letter after the targeted part. All subsequent part letters are incremented by one.

For example, consider a setup with four existent parts:

A
B
C
D

If we split part B, the result is as follows:

A
B (low split of B)
C (high split of B)
D (formerly "C")
E (formerly "D")

To select the split point, turn the control knob or play a key. You can use the **[octave]** buttons if your desired split point is outside of the current key range.

5. **add part.** The pattern is added as a brand new part. All other part parameters are set to their default values.

3. Start new setup?

Pressing the control knob at this option creates a new setup named with the pattern's name and a "+" in front (e.g. "+Liner" and "+Bobbetty") and, if a setup with this name already exists, a number at the end (e.g. "+Liner2" and "+Bobbetty2").

4. Pattern program

Choose the program that the pattern will use to play its notes. In order to quickly jump between program categories, you can hold down the **[patterns]** button and press the white keys labeled with category names.

Another way of setting the pattern's program is to bring it over from Programs mode. Press **[programs]** to enter Programs mode, and find the program that you want. Then, hold down **[programs]** and press **[patterns]**, and the pattern's program will be set. This works in the other direction as well -- hold down **[patterns]** and press **[programs]** to bring the pattern's program over to Programs mode, perhaps for some quick editing.

5. Length

Select one of $1/4$, $1/2$, 1, 2 or 4 bars.

The pattern will always play from the first note of the first bar. So, if you select a value shorter than the current one, the latter parts of the pattern will be truncated. If you select a value longer than the current one and the latter part of the pattern does not contain any notes, the new notes at the end of the pattern will be empty.

Length and Grid quantizing

The Micron records your playing at a very high resolution. The length and grid settings that you select for playing back your patterns are used to non-destructively quantize those recordings.

So, if you record a four-bar pattern and change its length later to $1/4$ bar, the Micron will only play a fraction of your pattern, but it will remember the whole thing. If you want to change the length back to four bars at any time, the complete pattern will still be available.

Similarly, pattern rhythms are quantized using the grid setting, but the underlying information remains untouched. So, as you cycle through different grid settings, you're likely to hear different syncopations and "feels" emerge.

6. Grid

Choose 8, 12, 14, 16, 20, 24, or 32 steps per bar, or choose *unquantized*. Shortening the scale decreases the quantizing resolution. You're more likely to hear double notes and simpler syncopations at low values.

Straight-ahead feels tend to result from using 8, 16, and 32 steps per bar. Swing and shuffle feels tend to result from choosing 12 or 24 steps per bar. But you can create some pretty wild patterns by using fractions of bars along with less obvious grid values, like 14 and 20.

7. Type

Choose sequence or arpeggio.

8. Span (arpeggios only)

Choose a span ranging from *single note* – in which the note you press on the keyboard will be the only note that plays – to one that plays up, down, or up-and-down through 1, 2, 3, or 4 octaves.

9. Order (arpeggios only)

When you hold down more than one note, you can specify the order in which they will be arpeggiated:

- The order in which they were initially pressed (called *as played*).
- *Up*. The arpeggiator plays the notes you are holding from the bottom to the top. Once the top note is reached, the arpeggio begins from the bottom again.
- *Down*. The arpeggiator plays the notes you are holding from the top to the bottom. Once the bottom note is reached, the arpeggio begins from the top again.
- *Up+Down Incl*. This mixes the *up* and *down* settings, playing up the notes you are holding and repeating the top note and the bottom note. The *incl* stands for *inclusive*.
- *Up+Down Excl*. This mixes the *up* and *down* settings, playing up the notes you are holding without repeating the top note and the bottom note. The *excl* stands for *exclusive*.
- *Octave Jump*. The arpeggiator plays the notes you are holding but plays the first note in two or more octave registers before playing the second note, which it also plays in two or more octave registers, etc.

Four Beats per Bar

All Micron patterns have four beats per bar.

You can still create odd-meter rhythms. It just takes a little calculation and a willingness to ignore the tempo indications given by the [tap] button.

For instance, one way to create a ¾ feel is to combine a length of ½ bar with a grid of 24 steps. That will give you a total of 12 steps to work with.

Ignore the display's "6 + 6" grouping. Think "4 + 4 + 4" instead.

Arpeggios or Sequences?

Arpeggios contain rhythm and velocity (relative volume) information.

Sequences contain not only rhythm and velocity information but also pitch information.

Use **arpeggios** for computer-generated patterns.

Use **sequences** for melodies and basslines.

Octave Jump

To hear Octave Jump in action, Span should not be set to "single note."

10. Real-time recording

Once you've reached the “record” parameter, you'll hear the metronome start to click. Use this “lead-in” time to get yourself into the groove. (As always, if the tempo isn't right, you can use the **[tap]** button to adjust it.)

Once you're ready to play, just start playing. The Micron will begin recording from the first note of the pattern. Alternately, if you don't want to play from the first note, you can push the control knob to kick off the recording.

The pattern will loop continuously, so you can add to it each time it comes around. When recording in real-time, remember that playing will never erase anything you've already recorded. To wipe out a section so you can replay it, hold down the control knob as it gets played back.

To stop recording, turn the control knob or press a mode button.

You will often want to clear the entire pattern and start over. One way of doing this is to hold down the control knob and wipe out the pattern as you record. But a quicker way is to hold down the **[patterns]** button and hit the highest note on the keyboard. This is a shortcut to the “Clear pattern?” option. See page 27.

The Micron records not only the keys you play, but all movements of the sliders, pitch wheel, and knobs. These controller movements don't even need to be recorded at the same time as the keys. A useful technique is to play the keys first, and then when the recording loops around, play on the controllers to add some life to your notes. If you do this, you will probably also be using the “Clear controllers?” option as well, so you can revise your controller movements until you're satisfied. See page 27.

Time display

The Micron displays time as “bar:beat:tick”. There are four beats in a bar, and 120 ticks in a beat.

Three-step beats land on 0, 40, and 80.

Four-step beats land on 0, 30, 60, and 90.

Five-step beats land on 0, 24, 48, 72, and 96.

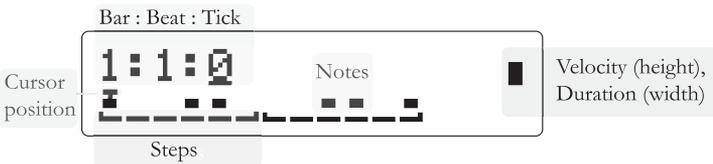
Changing the metronome

The metronome you hear when recording is, in fact, just another pattern. It is named “ Metronome”, and appears near the beginning of the pattern list. You are free to edit this pattern all you like. For example, you can choose a different program, or put the clicks on eighth notes or triplets instead of quarter notes. A quick way of disabling the metronome entirely is to simply rename this pattern and store it. You can always bring back the metronome later with another rename.*

11. Step editing

Turn the control knob to cycle through each step. You can quickly jump to the first step of the pattern by holding down the [patterns] button and pressing A above middle C (labeled “osc”).

Every aspect of the pattern is editable:



a. Adding and replacing notes and chords

Play one or more keys at any step to add (or replace) that step’s entry. Pitch, velocity, and length will be recorded, as will any controller and knob moves you make while the keys are held down.

If the pattern type is set to “arpeggio”, the pitch will not actually be used when the pattern is played back, since the Micron will play the pattern over whatever notes you hold down. But if you later set the type to “sequence”, your recorded pitches will reappear.

The cursor will automatically move on to the next step.

b. Removing notes

To remove a note, place the cursor under any step and double-click the control knob. The note, plus all controller movements between this note and the next one, will be removed.

c. Moving notes

To move a note, place the cursor under it. Then press and hold down the control knob and turn it to the left or right. Imagine that you are “dragging” the note.

Controllers and step editing

Remember that controller movements are recorded while a note is held down. So, it is perfectly possible to record a pitch bend while step editing; just play the note and turn the pitch wheel.

Removing multiple notes

To remove multiple notes at once, place the cursor at the right-most note you want to remove. Then press down on the control knob and turn it all the way to the left before releasing it.

d. Editing velocity

Place the cursor under the note that you want to edit and press the control knob. Turn the control knob to increase or decrease the velocity.

You can remove the note by turning the velocity down to zero.

While you're editing velocity, you can play any key to hear what the note sounds like at that velocity.

Note: Though the duration of the note is displayed in this screen, it cannot be edited here.

Gauging note velocity and duration on the display

As you place the cursor under each note, the top right side of the display will change.

Higher velocities are illustrated with higher bars.

Longer note lengths are illustrated with thicker bars. Notes can overlap one another, but that overlap is not visible on the display.

e. Editing duration.

To edit the duration of a note, move the cursor to it and play the note with the duration you desire.

The duration value cannot be edited directly, but a rough indication of the duration can be seen on the upper right side of the display.

12. Clear controllers?

Press the control knob to erase all slider, pitch wheel, and knob movements from the pattern, but keep the notes. This is handy if you recorded some controller movements that you're unhappy with, and want to try another take without starting the pattern from scratch.

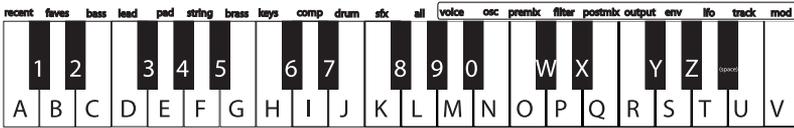
13. Clear pattern?

Press the control knob to erase all notes and controller movements from the pattern, but keep the basic pattern parameters. To quickly jump to this option, hold down the [patterns] button and press the highest note on the keyboard.

14. Pattern name

Since patterns are listed alphabetically, creative naming can help you move smoothly from one pattern to another.

Turn the control knob to select a position (1 – 14) to edit. Then press the control knob to edit that position. Edit either by turning the control knob or pressing notes on the keyboard.



Press a key twice to toggle between upper and lower case.

Inserting and deleting characters

To insert a space in the name, navigate to the position at which you want to add the space. Hold down the control knob and turn it clockwise.

To delete a character, navigate past it, hold down the control knob, and turn it counterclockwise.

In both cases, imagine that you are “dragging” the name around.

15. Send MIDI sysex?

Choose this option to send the pattern to a computer or other MIDI storage device using the Micron’s (MIDI OUT) port.

This allows you to back up your patterns to your computer, or share them with your friends or over the internet. See page 95 for details on what Sysex is and how to use it.

16. Send syx bundle?

Choose this option to send both the pattern and its program to a computer or other MIDI storage device using the Micron’s (MIDI OUT) port.

17. Delete pattern?

Delete the pattern using this function, if desired. You will be prompted to confirm this action.

18. Store a copy?

Unlike many synths, the Micron does not have fixed “banks” of programs, patterns, and so on, each with a predetermined number of storage locations. Instead, you may freely create and delete patterns at any time, just as you would on a computer.

“Store a copy?” is how you create a new pattern. This option creates a brand new copy of the current pattern, differing only in name. Now, when you make changes and hit the **[store]** button, you will be storing to this new copy.

Whenever you want to start a new pattern from scratch, you will have to find an existing pattern to base it off of, and then store a copy. Don't forget to store a copy, or you might accidentally overwrite the original pattern.

Store your changes!

Be sure to press the **[store]** button after you're satisfied with your changes. Otherwise, your changes will be lost when the Micron is turned off.

However, keep in mind that you don't lose any changes when you switch to other modes, so feel free to browse through programs or setups without storing your pattern. Additionally, if you play a setup that uses the current pattern, you'll hear your edited version, even without storing. This is a great way of checking how your edits sound in the context of a setup, without having to commit to them.

You can even play other patterns without losing your edits. Just hit the **[patterns]** button and turn the control knob. You can always come back to your edited pattern, just as you left it. The Micron doesn't discard your edits until you start editing a different pattern.

Exiting pattern editing

You can exit pattern editing at any time. Simply press any of the buttons encircling the control knob, including the **[patterns]** button a second time.

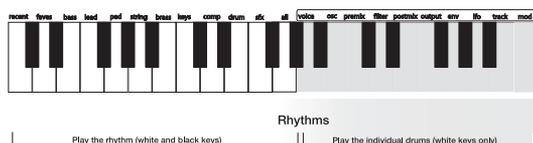
3

Patterns

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Playing Rhythms

Press the **[rhythms]** button next to the control knob.



Press and hold any key on the left side of the keyboard to play a rhythm.

Play the keys on the right side of the keyboard to play individual drum sounds. The keyboard's A above middle C (labeled *voice*) corresponds to the rhythm's Drum A. The next note, B (labeled *osc*), corresponds to Drum B, and so on.

Turn the control knob to play different rhythms.

Using [tap]

Tap the **[tap]** button to increase or decrease the speed of the pattern. To adjust the tempo with finer control, hold down **[tap]** and turn the control knob. The display will indicate the precise tempo.

Rhythm options:

Revert + stored?
(Thumpy)

Unrevert+edited?
(Thumpy)

Send to setup?
→ Bass/LeadSplit

Start new setup?
→ +Thumpy

Rhythm length
1 bar

Rhythm grid
16 steps/bar

Record rhythm?
(Thumpy)

Drum A ~~BD 909 Kick~~
BD 909 Kick

Drum A level
99% [-----]

Drum A ~~44% L (- - -)~~

Drum A 1:1:0 |
[-----]

Drum A: Clear?
(BD 909 Kick)

Drum A: Remove?
(BD 909 Kick)

Drum E: Add?

Clear rhythm?
(Thumpy)

Rhythm name: 1
[Thumpy]

Delete rhythm?
(Thumpy)

Send MIDI sysex?
(Thumpy)

Send syx bundle?
(Thumpy)

Editing Rhythms

First, choose an existing rhythm to edit by pressing the **[rhythm]** button and turning the control knob. Press any key on the left half of the keyboard to play the rhythm. Use the **[tap]** button to change the tempo.

Once you've found a rhythm you want to edit, press the control knob to enter edit mode. Turn the control knob to cycle through the parameters. Press it to edit a parameter; press again to exit parameter editing.

1. Revert-to-stored? / Unrevert-to-edited?

If you have edited a rhythm, you may revert back to the original version. Press the control knob to revert.

Go back to your edited state by press the control knob a second time to *unrevert*.

Use *revert* and *unrevert* often in order to compare your changes to the original rhythm. When you're satisfied with your work, press **[store]** to save your changes.

Store your rhythm

The [store] button will light once you have edited a rhythm.

Press [store] after you're satisfied with your edits. Otherwise, your changes will be lost when you turn off your Micron.

2. Send to setup?

Pressing the control knob at this option sends you to [setups] mode and allows you to make this rhythm a beat of the last-selected setup.

If the setup does not have any beats, this rhythm is automatically assigned to the setup's beat A.

If the setup already has one or more beats, you will be able to add the rhythm in one of the following ways:

1. **send to beat.** The setup's beat is replaced by the current rhythm. The setup beat's level, effects mix, key range, and latch status are retained.
2. **layer.** The setup's existing beat is duplicated, resulting in a new beat. The rhythm is then sent to the new beat.
3. **split low.** The setup's existing beat is split in two at a particular key.

The Micron prompts for a note on the keyboard at which to execute the split. The rhythm is then sent to the lower beat of the split. Every note *below* the one you select will use this new rhythm. Every note *including and higher than* the note you select will use the setup's existing beat.

The new beat is assigned the next letter after the split beat. For example, if the setup contains beats A, B, C, and D, and beat B is the beat that gets split, then beat C will be the newly-added beat. All later beats' letters are incremented by one.

To select the split point, turn the control knob or play a key. You can use the [octave] buttons if your desired split point is outside of the current key range..

4. **split high.** The setup's existing beat is split in two at a particular key.

As with the *split low* option, the Micron prompts for a note on the keyboard at which to execute the split. The rhythm is then sent to the upper beat of the split. Every note *above* the one you select will use this new rhythm. Every note *including and lower than* the note you select will use the setup's existing beat.

Send to setup only allows the option of sending the rhythm to the current setup. Therefore, you may need to jump out of rhythm editing to choose a setup before returning to rhythms and following this procedure.

How beat letters change when “layer,” “split low,” and “split high” are used
When beats are layered or split high, the new beat is assigned the next letter after the targeted beat. All subsequent beat letters are incremented by one.

For example, consider a setup with four existent beats:

A
B
C
D

If we split beat B, the result is as follows:

A
B (low split of B)
C (high split of B)
D (formerly “C”)
E (formerly “D”)

To select the split point, turn the control knob or play a key. You can use the **[octave]** buttons if your desired split point is outside of the current key range.

5. **add part.** The rhythm is added as a brand new beat. All other beat parameters are set to their default values.

3. Start new setup?

Press the control knob to create a new setup. The setup will have one beat, using this rhythm, but will otherwise be empty. You can then add parts and additional beats to the setup, either by directly editing the setup or via the “Send to setup?” option in other modes.

The setup’s name will be the same as this rhythm’s, except preceded with a plus character. This ensures that the new setup will appear near the beginning of the alphabetized setups list. You can change the name later if you want to keep the setup, or simply delete the setup if not.

4. Length

Select one of $1/4$, $1/2$, 1 , 2 or 4 bars.

The rhythm will always play from the first note of the first bar. So, if you select a value shorter than the current one, the latter parts of the rhythm will be truncated. If you select a value longer than the current one and the latter part of the rhythm does not contain any notes, the new notes at the end of the rhythm will be empty.

5. Grid

Choose 8 , 12 , 14 , 16 , 20 , 24 , or 32 steps per bar, or choose *unquantized*. Shortening the scale decreases the quantizing resolution. You’re more likely to hear double notes and simpler syncopations at low values.

Straight-ahead feels tend to result from using 8 , 16 , and 32 steps per bar. Swing and shuffle feels tend to result from choosing 12 or 24 steps per bar. But you can create some pretty wild rhythms by using fractions of bars along with less obvious grid values, like 14 and 20 .

Length and Grid quantizing

The Micron records your playing at a very high resolution. The length and grid settings that you select for playing back your rhythms are used to non-destructively quantize those recordings.

So, if you record a four-bar rhythm and change its length later to $1/4$ bar, the Micron will only play a fraction of your rhythm, but it will remember the whole thing. If you want to change the length back to four bars at any time, the complete rhythm will still be available.

Similarly, rhythms are quantized using the grid setting, but the underlying information remains untouched. So, as you cycle through different grid settings, you’re likely to hear different syncopations and “feels” emerge.

6. Record rhythm (real-time)

Once you've reached the "record" parameter, you'll hear the metronome start to click. Use this "lead-in" time to get yourself into the groove. (As always, if the tempo isn't right, you can use the [tap] button to adjust it.)

Once you're ready to play, just start playing on the white keys above middle A. The Micron will begin recording from the first note of the rhythm. Alternately, if you don't want to play from the first note, you can push the control knob to kick off the recording.

The rhythm will loop continuously, so you can add to it each time it comes around. You can play the entire rhythm at once, or add to it drum by drum.

When recording in real-time, remember that playing will never erase anything you've already recorded. To wipe out a section so you can replay it, you can hold down the control knob as it gets played back. This will wipe the notes for all drums.

However, you frequently will want to wipe out the notes for just a single drum, leaving the other drums intact. Holding down a black key will make the Micron wipe the notes of the last drum played (the drum shown on the display). If you want to replay a particular drum track, the easiest way is to hold down a black key while you play that drum. That will wipe the drum's existing notes as you go, leaving only the notes that you play. Alternately, you can use the "Drum: Clear?" option. See page 38.

To stop recording, turn the control knob or press a mode button.

You will often want to clear the entire rhythm and start over. One way of doing this is to hold down the control knob and wipe out the rhythm as you record. But a quicker way is to hold down the [rhythms] button and hit the highest note on the keyboard. As long as you have less than ten drums, this will jump you to the "Clear rhythm?" option. See page 39.

Four Beats per Bar

All Micron patterns have four beats per bar.

You can still create odd-meter rhythms. It just takes a little calculation and a willingness to ignore the tempo indications given by the [tap] button.

For instance, one way to create a $\frac{3}{4}$ feel is to combine a length of $\frac{1}{2}$ bar with a grid of 24 steps. That will give you a total of 12 steps to work with.

Ignore the display's "6 + 6" grouping. Think "4 + 4 + 4" instead.

Changing the metronome

The metronome you hear when recording is, in fact, just another pattern. It is named " Metronome", and appears near the beginning of the pattern list. You are free to edit this pattern all you like. For example, you can choose a different program, or put the clicks on eighth notes or triplets instead of quarter notes. A quick way of disabling the metronome entirely is to simply rename this pattern and store it. You can always bring back the metronome later with another rename.*

7. Drum A through Drum H

Turn the control knob clockwise to access the *Drum A* settings. Each drum holds lots of options:

- Change the drum program.
- Edit the level.
- Edit the pan position.
- Edit the drum's pattern, including the placement and velocity of each note.
- Clear the pattern information.
- Remove the drum.

a. Program

Press the control knob once to change the drum program.

In order to quickly jump between program categories, you can hold down the **[rhythms]** button and press the white keys labeled with category names. Although you will almost always want to use programs from the “Drum” category in your rhythms, you are free to choose any program you like. However, if you choose a non-drum, the rhythm will only play it at middle C. If you want melodic variation, that's what patterns are for.

Another way of setting the rhythm's program is to bring it over from Programs mode. Press **[programs]** to enter Programs mode, and find the program that you want. Then, hold down **[programs]** and press **[rhythms]**, and the rhythm's program will be set. This works in the other direction as well -- hold down **[rhythms]** and press **[programs]** to bring the rhythm's program over to Programs mode, perhaps for some quick editing.

Twirl the control knob to cycle through the programs.

When you've found the program you want to use for this drum, press the control knob.

b. Level

Turn the control knob clockwise to edit the drum's overall volume.

c. Pan

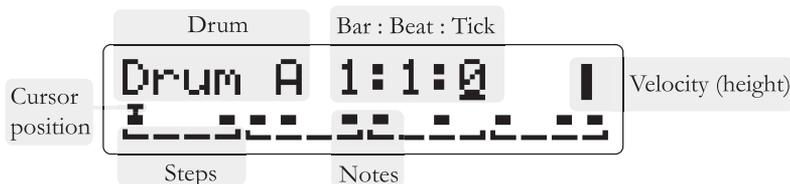
Turn the control knob clockwise to edit the drum's position in the stereo field.

Switching among drums

*To quickly switch between the drums in a rhythm, hold down the **[rhythms]** button and press a white key on the right side of the keyboard. For example, if you are editing drum A level, hold down **[rhythms]** and press the B above middle C to jump to drum B level. This is especially useful while step editing.*

d. Pattern

Turn the control knob clockwise to edit the drum's pattern. (Remember, this will edit the pattern for just this one drum, not for all the drums that make up the rhythm setting.) Press the control knob to edit the pattern. The display will show a grid like this one:



In the top line, the screen indicates that *Drum A* is being edited in *Step* mode.

The cursor is positioned in bar 1, beat 1, shown as *1:1*.

In the bottom line, each of sixteen steps is shown. Rectangles appear where notes are present.

Turn the control knob to travel amongst the different notes in the pattern. For patterns that require more than one screen, keep turning the knob – the display will track your position in its upper right position.

a. Adding notes

To add a note, press the white key that corresponds to that particular drum. For instance, drum A is controlled using the white key labeled *voice*. Your velocity information will be recorded, as well as the position of the pitch wheel and sliders.

Note that you can press multiple keys at once in order to place multiple drums at a step. In fact, you can enter an entire rhythm at once simply by playing it on the keys, as long as each step has at least one drum note.

If you play a key that does not correspond to any drum, the cursor will advance, but the rhythm will not be changed. When entering a rhythm, sometimes it's helpful to continuously tap on the highest note of the keyboard, to control the rate at which the cursor advances.

After pressing the key, the cursor will automatically advance one step.

Time display

The Micron displays time as "bar:beat:tick". There are four beats in a bar, and 120 ticks in a beat.

Three-step beats land on 0, 40, and 80.

Four-step beats land on 0, 30, 60, and 90.

Five-step beats land on 0, 24, 48, 72, and 96.

b. Removing notes

To remove a note, press any black key on the right side of the keyboard. The step will be erased, and the cursor will advance one step. The note is only removed from the drum that is displayed on the screen; all other drums are not affected.

This makes it easy to replace the pattern for a particular drum without explicitly erasing it beforehand. Simply play the pattern into the step editor, using a black key as a “rest”.

c. Changing note velocities

Again, you must be in the pattern editing screen for that particular note’s program.

Place the cursor over the note you want to edit and press the control knob normally. You will be able to change the velocity by turning the control knob.

You can remove the note by turning the velocity down to zero.

While you’re editing velocity, you can play any key to hear what the note sounds like at that velocity. You will hear all drums which have notes at the step.

d. Clear?

To keep the program but remove all the notes, choose *Clear*.

e. Remove?

If this particular drum is unnecessary to your rhythm, remove it. At the *Remove?* prompt, press the control knob. This drum will be removed from the rhythm, and all of the other drums will be re-lettered accordingly. (For instance, what had been “Drum B” will become “Drum A,” and what had been “Drum C” will become “Drum B.”)

8. Add?

After the last drum, you will be prompted with *Add?* Press the control knob to add a drum. It will be given the next available letter.

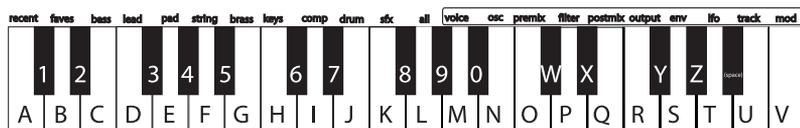
9. Clear rhythm?

Press the control knob to erase all notes and controller movements from the rhythm, but keep the basic rhythm parameters. To quickly jump to this option, hold down the [rhythms] button and press the highest note on the keyboard.

10. Rhythm name

Since rhythms are listed alphabetically, creative naming can help you move smoothly from one rhythm to another.

Turn the control knob to select a position (1 – 14) to edit. Then press the control knob to edit that position. Edit either by turning the control knob or pressing notes on the keyboard.



Press a key twice to toggle between upper and lower case.

Inserting and deleting characters

To insert a space in the name, navigate to the position at which you want to add the space. Hold down the control knob and turn it clockwise.

To delete a character, navigate past it, hold down the control knob, and turn it counterclockwise.

In both cases, imagine that you are “dragging” the name around.

11. Send MIDI sysex?

Choose this option to send the rhythm to a computer or other MIDI storage device using the Micron’s (MIDI OUT) port.

This allows you to back up your rhythms to your computer, or share them with your friends or over the internet. See page 95 for details on what Sysex is and how to use it.

12. Send syx bundle?

Choose this option to send both the rhythm and its program to a computer or other MIDI storage device using the Micron’s (MIDI OUT) port.

13. Delete rhythm?

Delete the rhythm using this function, if desired. You will be prompted to confirm this action.

14. Store a copy?

Unlike many synths, the Micron does not have fixed “banks” of programs, patterns, and so on, each with a predetermined number of storage locations. Instead, you may freely create and delete rhythms at any time, just as you would on a computer.

“Store a copy?” is how you create a new rhythm. This option creates a brand new copy of the current rhythm, differing only in name. Now, when you make changes and hit the **[store]** button, you will be storing to this new copy.

Whenever you want to start a new rhythm from scratch, you will have to find an existing rhythm to base it off of, and then store a copy. Don't forget to store a copy, or you might accidentally overwrite the original pattern.

Store your changes!

Be sure to press the **[store]** button after you're satisfied with your changes. Otherwise, your changes will be lost when the Micron is turned off.

However, keep in mind that you don't lose any changes when you switch to other modes, so feel free to browse through programs or setups without storing your rhythm. Additionally, if you play a setup that uses the current rhythm, you'll hear your edited version, even without storing. This is a great way of checking how your edits sound in the context of a setup, without having to commit to them.

You can even play other rhythms without losing your edits. Just hit the **[rhythms]** button and turn the control knob. You can always come back to your edited rhythm, just as you left it. The Micron doesn't discard your edits until you start editing a different rhythm.

Exiting rhythm editing

You can exit rhythm editing at any time. Simply press any of the buttons encircling the control knob, including the **[rhythms]** button a second time.

Playing Setups

Press [setups] and spin the control wheel to play different setups.

Since setups often have different elements assigned to different parts of the keyboard, be sure to play throughout the keyboard range to experience the splits and combinations.

Setups pull together programs, patterns, and rhythms to produce lush soundscapes, intricate rhythmic and sonic textures, and sophisticated keyboard “splits.”

Setups depend on programs, patterns, and rhythms

When you make changes to [programs], [patterns], or [rhythms], the setups that reference them will reflect those changes.

Setup Components

Setups are constructed of two basic elements:

- **Parts.** Parts hold *programs* and *patterns* along with level, pan, and other settings.
- **Beats.** Beats hold *rhythms* along with similar settings.

Polyphony considerations

The Micron allows you to stack together more sound sources than its engine can play. If you find this happening, consider restricting the key ranges of some of your parts and beats so that fewer voices sound when you press each note.

Editing Setups

Setup editing has a lot of parts, as shown below. On the top level, it involves:

- Adding and removing programs to setup *parts*.
- Adding and removing patterns to setup *parts*.
- Adding and removing rhythms to setup *beats*.
- Assigning controllers.
- Assigning levels, left/right panning, key ranges, splits, etc.
- Assigning effects types and effects levels per part and beat.
- Naming the setup.

Remember that, in most cases, pressing the control knob twice quickly (double-clicking) can restore a setting.

Store your setup

The [store] button will light once you have edited a setup.

Press [store] after you're satisfied with your edits. Otherwise, your changes will not be saved.

5

Setups

Take a moment to cycle through these options. Press **[setups]** and turn the control knob to select a setup to edit. Then press the control knob to enter edit mode.

Turn the control knob clockwise to cycle through the various parts. Parts are labeled as “Part A,” “Part B,” “Part C,” etc.

Setup options (1 of 2):

- Revert → stored?
(ArpeggiGroove)
- Part A progname
(Pattern's P9M)
- Part A pattern
Bobbetty
- Part A level
89% [-----]
- Part A Eap
27% R (")
- Part A fx_mix
75% dry, 25% wet
- Part A low key
A3 +[-----] E4
- Part A high key
A3 [-----] E4
- Part A transpose
+7 semitones
- Part A latch
not latched
- Part A controls
P, m1, m2
- Part A knobs
x, y, z
- Part A pedals
sus, expr
- Part A: Split?
(Bobbetty)
- Part A: Layer?
(Bobbetty)
- Part A: Remove?
(Bobbetty)
- ⋮
- ⋮ (other parts)
- ⋮
- { Part D: Add?

After the last part, you will see that you can add a part.

5 Setups

Turn the control knob further to cycle through all of the beats. Beats are labeled “Beat A,” “Beat B,” “Beat C,” etc. – just like parts.

Setup options (2 of 2):

- Beat A *chytbn*
Frumpy
- Beat A *level*
85% [-----]
- Beat A *fx_mix*
100% dry, 0% wet
- Beat A *low key*
C0 ←[-----] C4
- Beat A *high key*
C0 [-----]→ C4
- Beat A *latch*
not latched
- Beat A: *SelIt?*
(Frumpy)
- Beat A: *Layer?*
(Frumpy)
- Beat A: *Remove?*
(Frumpy)

⋮ (other beats)
⋮

After the last beat, you can add a new beat.

Beat C: *Add?*

Keep turning the control knob clockwise to cycle through screens dedicated to the effects. These screens will vary depending on the effect you choose.

Fx: *Iyee*
chorus
⋮ (fx parameters)
⋮

Finally, you’ll see the *clear*, *name*, *delete*, *MIDI SysEx*, and *copy* screens.

Clear setup?
(ArpeggiGroove)

Setup name: 1
[ArpeggiGroove]

Send MIDI sysex?
(ArpeggiGroove)

Send syx bundle?
(ArpeggiGroove)

Delete setup?
(ArpeggiGroove)

Store as copy?
(67% free space)

1. Parts

Each part has the following editable parameters:

a. Program

You can make the program dependent on this part's pattern, shown on the Micron as (*pattern's pgm*). If you do so, the setup will change programs automatically as the setup is changed.

Alternately, you can specify that the part use a particular program.

To use the pattern's program, spin the control knob all the way to the left, or else press the control knob twice in quick succession (double-click).

To specify another program, twist the control knob to find the program you want. (To jump to a category, hold down the **[setups]** button and press one of the lower white keys.)

Another way of setting the part's program is to bring it over from Programs mode. Press **[programs]** to enter Programs mode, and find the program that you want. Then, hold down **[programs]** and press **[setups]**, and the part's program will be set. This works in the other direction as well -- hold down **[setups]** and press **[programs]** to bring the part's program over to Programs mode, perhaps for some quick editing.

Press the control knob again to accept your selection.

b. Pattern

Select the *pattern* to be used in this part. If you don't want to use a pattern, turn the control knob all the way to the left (or double-click) to select *none*.

As with programs, you can also set the pattern by bringing it over from Patterns mode. Press **[patterns]** to enter Patterns mode, and find the pattern that you want. Then, hold down **[patterns]** and press **[setups]**, and the part's pattern will be set. This works in the other direction as well -- hold down **[setups]** and press **[patterns]** to bring the part's pattern over to Patterns mode.

Switching amongst parts and beats

*To quickly switch between the parts and beats in a setup, hold down the **[setups]** button and press a white key on the right side of the keyboard. Parts start at the A above middle C, and beats start at the A above that.*

*For example, if you are editing part A level, hold down **[setups]** and press the B above middle C to jump to part B level. If you get lost in your setup and can't remember which part is which, try holding down **[setups]** and running your fingers across the right side of the keyboard.*

Experiment with using one program for multiple parts

You can assign one program to a number of different parts. Varying levels, patterns, transpositions, and more across the parts can create some interesting and musical results.

c. Level

Adjust the part's overall level relative to the other levels and parts within this setup.

d. Pan

Adjust the part's left/right pan position.

e. FX Mix

Set the dry/wet effects balance for the part.

A part that is “100% dry” does not use the master effects at all. On the other hand, if you set a part to “100% wet”, all you'll hear is what comes out of the master effects. The correct effects balance to use depends on the particular effect, but for most effects such as phasers and choruses, “70% dry, 30% wet” is a good place to start.

When using the vocoder, you typically don't want to hear any dry at all, so set the balance to “100% wet”.

f. Low Key

Carefully assigning parts and beats to different portions of the keyboard can make the difference between good setups and awesome ones.

In this screen, set the lowest keyboard note to which the part will respond. Any notes lower than the note you select here will be ignored by this part.

To select a note, turn the control knob or play a key. You can use the **[octave]** buttons if your desired note is outside of the current key range.

g. High Key

Set the highest keyboard note to which the part will respond. Any notes higher than the note you select here will be ignored by this part.

Remember that you can set these keys across the entire MIDI note number range, not just the Micron's 37 notes.

Remember that you can always use the **[octave]** buttons to adjust the note range of the Micron's keyboard.

Setting the level to zero

Set the level to 0 to turn a part off without removing it.

Consider using this tactic works when you're not entirely sure whether you want to keep a part or not.

Use As

Following the pattern screen, you may encounter a screen saying “use as,” with your choices being “instrument” or “drum.” Go to page 46 for details on this feature.

Effects

All of the parts and beats within a setup use either no effect or else a single, shared effect (which is selected in a later screen).

Carving out a hole in the keyboard range

Anarchist types will inevitably wonder what happens when you set the low note higher than the high note. In such cases, the notes in between the two will be silent, but all notes outside of that range will play, resulting in a hole in playing range.

h. Transposition

Adjust the transposition over a four-octave range. This does not affect the MIDI notes that the part responds to. It simply changes the pitch at which the program is played.

i. Latch

Set the latch status of the part to *latched* or *not latched*. The default is *not latched*.

When latch is *on*, the part will continue playing after you remove your hands from the keys, as if the sustain pedal were held down. To release the latched notes, let up on all of the keys and then play a new note or chord. To stop the part entirely, switch to another setup or press a mode button.

Latching is especially useful when you have more parts than you have hands, or if your parts don't all fit within the Micron's three-octave key range. If your bassline and pad parts are latched, you can simply let them play on their own while you use both hands to play the lead, and then return to them when it's time for a chord change.

Latching with the **[latch]** button is similar. If you hold down the **[latch]** button and play an unlatched part, it will become latched as long as the button is activated.

j. Controllers

Activate any combination of the **(pitch)** wheel and the **(m1)** and **(m2)** sliders for this part.

You will often want each controller to affect just a single part. For example, you might want the **(pitch)** wheel to bend the lead, or the **(m2)** slider to sweep the filter of your pad. To assign a controller exclusively to the current part, hold down the **[setups]** buttons and wiggle the controller. This will not only enable the controller for this part, but will also disable the controller in all other parts.

Some transposition tips

The Micron's compact keyboard makes transposition especially important.

Some lush sounds can be made by combining some programs at standard pitch with others transposed an octave or two higher or lower, but reduced in level.

Some classic synthesizer sounds combine one non-transposed part with another – lower in level – a fifth above (that's plus-seven semitones). While this setting violates every rule held sacred by harmony professors, you may be among the many who find it very cool.

k. Knobs

Allow any combination of the **x**, **y**, and **z** knobs to work on this part. The knobs' functions are determined by the settings assigned for this part's *program* within the **[programs]** screens.

As with controllers, you can assign a knob exclusively to the current part by holding down the **[setups]** buttons and wiggling the knob. This will enable the knob for this part and disable the knob in all other parts.

As always, when you turn a knob, the display will indicate which program parameter you're changing. If you have multiple parts that respond to the same knob, the display will only show this information for a single part, but rest assured that all of the parts are being affected.

l. Pedals

Assign the sustain and/or expression pedal to this part. By default, they are both assigned.

m. Split?

Split allows you to create a new part by splitting the key range of the current part. After the split, one part will use the keys below the split point, and the other part will use the keys above. The two parts will otherwise be identical.

If you choose to split a part, the Micron will prompt you to select the key on the keyboard where the split should occur. To select the split point, turn the control knob or play a key. You can use the **[octave]** buttons if your desired split point is outside of the current key range.

The newly-created part will be assigned the next letter after the current part's letter. All subsequent part letters will be incremented by one.

n. Layer?

Choose *layer* to duplicate the current part.

The newly-created part will be assigned the next letter after the current part's letter. All subsequent part letters will be incremented by one.

o. Remove?

Choose *remove* to remove the current part. All subsequent parts will be re-lettered accordingly.

Jumping between parts
To jump between parts, hold down the [setups] button and press a key on the right side of the keyboard, starting with the A above middle C.

2. Use as

Suppose you come across a rhythm that would fit perfectly in your setup, but the snare drum doesn't sound right. You could edit the rhythm, but that would affect all other setups using that rhythm. Instead, what you'd like to do is just swap out that particular drum within this particular setup.

To do this, choose a program to replace the errant snare, and add it to the setup as a part. As long as the program is in the "drum" category and there is no pattern assigned, a hidden option will appear after the pattern parameter: "use as".

Normally, this parameter is set to "use as instrument," indicating that the part is functioning like any other part. But if you change the parameter to "use as drum A in beat", all rhythms will substitute the part's program for their drum A. You can "use as" any drum from A to J. Once you figure out which drum that snare is, you can replace it with any program of your choosing.

"Use as" doesn't just affect a drum's program -- the drum's level, pan, and FX mix follow the part's settings as well. So, if you actually like the snare's program but think it's a bit too loud, "use as" can help you turn down the level. Or, if you want most of the rhythm dry, but want to give that snare some extra effects processing, "use as" will allow you to adjust its FX mix individually.

3. Add?

After turning the control knob past all of the current parts, you will be able to *add* a part. At the *add* screen, push the control knob to add a new, empty part.

Note that adding parts using the *add* feature always adds them after the last part. To insert a part in between other parts, use the *split* or *layer* functions from within the part editing screens.

4. Beats

Once you are past the *part* screens, you reach the *beat* screens.

a. Rhythm

Choose the *rhythm* to use for this beat. All of the information for the rhythm – the sounds, panning, relative levels of the different sounds, and so forth – will be included.

Another way of setting the beat's rhythm is to bring it over from Rhythms mode. Press **[rhythms]** to enter Rhythms mode, and find the rhythm that you want. Then, hold down **[rhythms]** and press **[setups]**, and the beat's rhythm will be set. This works in the other direction as well -- hold down **[setups]** and press **[rhythms]** to bring the beat's rhythm over to Rhythms mode, perhaps for some quick editing.

b. Level

Set the level of this beat relative to the other beats and parts within the setup.

c. FX Mix

Set the dry/wet effects balance for the beat. This mix affects all of the drum in a rhythm equally.

If you want to single out a particular drum, see the “use as” parameter on page 48.

Using multiple beats per setup

A setup can have multiple beats, just as it can have multiple parts. Assigning different beats to different, small little sections on the keyboard (using the “low key” and “high key” parameters) can provide you with a lot of variations as you perform.

Effects

All of the parts and beats within a setup use either no effect or else a single, shared effect (which is selected in a later screen).

Jumping between beats

To jump between beats, hold down the [setups] button and press one of the top keys, starting with the highest A on the keyboard.

d. Low Key

Carefully assigning parts and beats to different portions of the keyboard can make the difference between good setups and awesome ones.

In this screen, set the lowest keyboard note to which the part will respond. Any notes lower than the note you select here will be ignored by this part.

To select a note, turn the control knob or play a key. You can use the **[octave]** buttons if your desired note is outside of the current key range.

e. High Key

Set the highest keyboard note to which the part will respond. Any notes higher than the note you select here will be ignored by this part.

Remember that you can set these keys across the entire MIDI note number range, not just the Micron's 37 notes.

Remember that you can always use the **[octave]** buttons to adjust the note range of the Micron's keyboard.

f. Latch

Set the latch status of the part to *latched* or *not latched*. The default is *not latched*.

When latch is *on*, the part will continue playing after you remove your hands from the keys, as if the sustain pedal were held down. To release the latched notes, let up on all of the keys and then play a new note or chord. To stop the part entirely, switch to another setup or press a mode button.

Latching is especially useful when you have more parts than you have hands, or if your parts don't all fit within the Micron's three-octave key range. If your bassline and pad parts are latched, you can simply let them play on their own while you use both hands to play the lead, and then return to them when it's time for a chord change.

Latching with the **[latch]** button is similar. If you hold down the **[latch]** button and play an unlatched part, it will become latched as long as the button is activated.

Carving out a hole in the keyboard range

Anarchist types will inevitably wonder what happens when you set the low note higher than the high note. In such cases, the notes in between the two will be silent, but all notes outside of that range will play, resulting in a hole in playing range.

g. Split?

Split allows you to create a new part by splitting the key range of the current part. After the split, one part will use the keys below the split point, and the other part will use the keys above. The two parts will otherwise be identical.

If you choose to split a part, the Micron will prompt you to select the key on the keyboard where the split should occur. To select the split point, turn the control knob or play a key. You can use the **[octave]** buttons if your desired split point is outside of the current key range.

The newly-created part will be assigned the next letter after the current part's letter. All subsequent part letters will be incremented by one.

h. Layer?

Choose *layer* to duplicate the current beat.

The newly-created beat will be assigned the next letter after the current beat's letter. All subsequent beat letters will be incremented by one.

i. Remove?

Choose *remove* to remove the current beat. All subsequent beats will be re-lettered accordingly.

5. Add?

After turning the control knob past all of the current beats, you will be able to add a beat. At the *add* screen, push the control knob to add a new beat.

Note that adding beats using the *add* feature always adds them after the last beat. To insert a beat in between others, use the *split* or *layer* functions from within the beat editing screens.

6. FX Type

Choose an effect to apply to the setup, or turn the control knob all the way to the left (or double-click the control knob) to bypass the effects.

If you do choose an effect, the editable parameters associated with that effect will be shown in subsequent screens.

Each part and beat has an “FX mix” parameter to control how much of its sound is passed through the master effects section. If a part or beat is set to “100% dry”, it is unaffected by the setup’s effects.

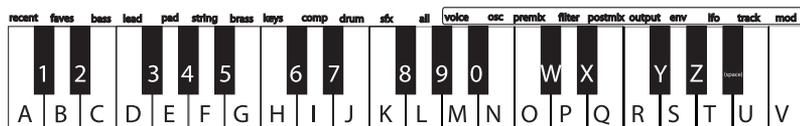
7. Clear

Choose *clear* to remove all of the parts and beats from the setup but to retain the setup’s name.

8. Setup name

Since setups are listed alphabetically, creative naming can help you move smoothly from one setup to another.

Turn the control knob to select a position (1 – 14) to edit. Then press the control knob to edit that position. Edit either by turning the control knob or pressing notes on the keyboard.



Press a key twice to toggle between upper and lower case.

Inserting and deleting characters

To insert a space in the name, navigate to the position at which you want to add the space. Hold down the control knob and turn it clockwise.

To delete a character, navigate past it, hold down the control knob, and turn it counterclockwise.

In both cases, imagine that you are “dragging” the name around.

9. Send MIDI sysex?

Choose this option to send the setup to a computer or other MIDI storage device using the Micron's **(MIDI OUT)** port.

This allows you to back up your setups to your computer, or share them with your friends or over the internet. See page 95 for details on what Sysex is and how to use it.

10. Send syx bundle?

Choose this option to send both the setup and its program, patterns, and rhythms to a computer or other MIDI storage device using the Micron's **(MIDI OUT)** port.

11. Delete setup?

Delete the setup using this function, if desired. You will be prompted to confirm this action.

12. Store a copy?

Unlike many synths, the Micron does not have fixed “banks” of programs, patterns, and so on, each with a predetermined number of storage locations. Instead, you may freely create and delete setups at any time, just as you would on a computer.

“Store a copy?” is how you create a new setup. This option creates a brand new copy of the current setup, differing only in name.

Now, when you make changes and hit the **[store]** button, you will be storing to this new copy.

Whenever you want to start a new setup from scratch, you will have to find an existing setup to base it off of, and then store a copy. Don't forget to store a copy, or you might accidentally overwrite the original setup.

Store your changes!

Be sure to press the **[store]** button after you're satisfied with your changes. Otherwise, your changes will be lost when the Micron is turned off.

However, keep in mind that you don't lose any changes when you switch to other modes, so feel free to browse through programs or rhythms without storing your setup.

You can even play other setups without losing your edits. Just hit the **[setups]** button and turn the control knob. You can always come back to your edited setup, just as you left it. The Micron doesn't discard your edits until you start editing a different setup.

Store your changes!

Be sure to press the **[store]** button after you're satisfied with your changes. Otherwise, your changes will be lost when the Micron is powered down.

Exiting setup editing

You can exit setup editing at any time. Simply press any of the other buttons encircling the control knob, including the **[setups]** button a second time.

What is a “Program”?

A Micron program is a sound built from the Micron’s internal oscillators, filters, and envelope generators. The Micron’s programs cover the gamut of classic analog synthesis sounds. If you’ve heard it before, you will probably find it amongst the Micron’s presets.

How the Micron Makes Sound

The Micron generates sound by emulating, or “modeling,” the behavior of an analog synthesizer. Generally, it is helpful to think in terms of the signal moving from the left side of the top panel to the right side. The oscillators are fed into the filters, which in turn are fed into the amplifiers.

As the signal moves through that basic path, you are able to adjust the mix of the signal at several points, apply various modulations and envelopes, and add effects. In this way, the Micron can generate a virtually limitless variety of sounds.

Let’s take a quick look at the Micron’s signal path, from start to finish.

The Oscillators

The oscillators are where sound is born. You may have heard that what you perceive as “sound” is simply vibrating air molecules hitting your eardrums. That vibration has to start somewhere, and in the Ion, it comes from the oscillators. By varying the *frequency* of the vibration, the oscillators can produce different pitches, which are heard as musical notes. By adjusting the *waveform type* and *shape*, the oscillators can produce various harmonics, which are heard as different timbres. Each of the Micron’s voices contains three oscillators.

The Pre Filter Mix

The outputs of the oscillators, as well as a few other signal sources, are fed into a virtual mixing board called the Pre Filter Mix. The job of this mixer is to funnel all of these sources into the inputs of the next sound processing stage—the filters. For each source, you can specify its *level*, which is how loud it should be, and its *balance*, which determines how much of it goes to Filter 1 and how much to Filter 2.

The Filters

The sound produced by the oscillators is very raw, and usually not suitable to be used directly in an instrument. In order to bring out the sonic textures you have in mind, you will typically want to dampen certain harmonics and boost others. This is where the filters come in. Filters alter the frequency content of the signal, and can have a drastic effect on the sound. A filter typically allows you to adjust its *cutoff frequency*, which represents the range of harmonics that the filter operates on, as well as its *resonance*, which determines how much boost is given to harmonics around the cutoff frequency. Each of the Micron's voices contains two filters, and each filter can be one of eighteen different types, each with its own character and sonic flavor.

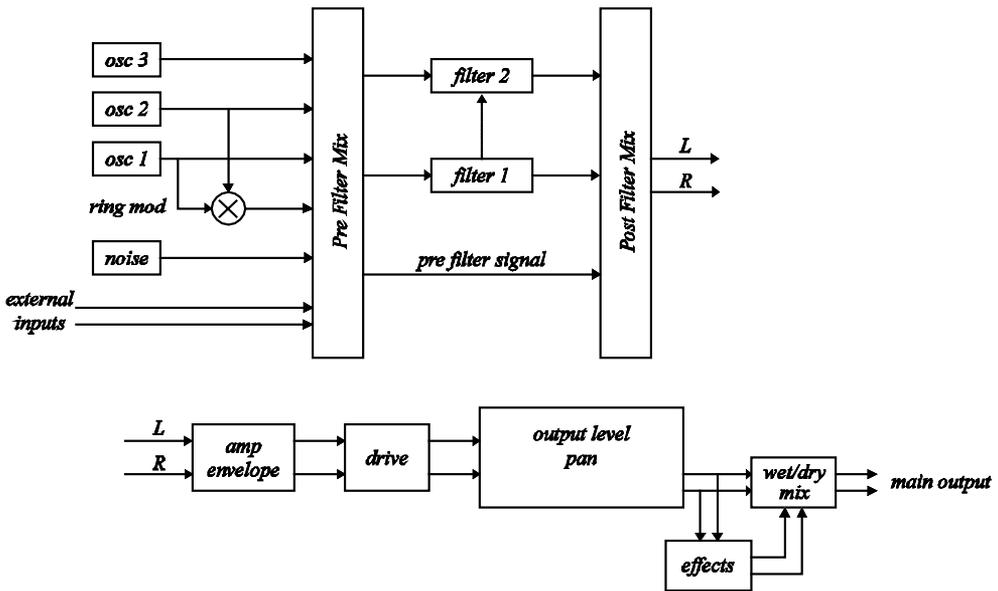
The Post Filter Mix

The outputs of the filters need their own virtual mixing board as well, and that's what the Post Filter Mix is for. For each filter output, as well as a pre filter signal of your choice, you can specify a *level*, which is how loud it should be, and a *pan*, which determines how much goes to your left speaker and how much to the right.

Output

The sound is getting near the end of its journey, but still has one more processing stage to go through. In the output stage, the Micron allows you to apply a *drive effect*, to give the sound a final push and add some compression, distortion, or other amplification effect. You also get to choose the overall level for the sound, as well as how much of it gets sent to the Micron's dedicated effects processor.

Signal Flow Diagram



Modulation

At this point, you may think that producing a sound with the Micron is simply a matter of configuring the parameters for the oscillators, filters, and mixers, and then hitting a key. And although it's true that you can design some nice instruments this way, generating the really awesome sounds invariably involves tweaking some of those parameters while a note is playing. The problem with that, if you're anything like us, is that you only have two hands, and you are probably using at least one of them to hit the notes in the first place. Fortunately, the Micron is willing to lend you a helping hand—twelve of them, in fact.

The Micron allows you to set up twelve *modulation routes*. Each of these is a virtual connection between some physical or internally-generated source and some program parameter. Basically, a mod route tells the synth to automatically grab a knob and tweak it while a note is playing. Although there are quite a few sources that you can use for your mods, the most common ones involve the LFOs and the envelopes.

The LFOs

LFO stands for “low frequency oscillator”. Unlike the normal oscillators, however, the LFOs are not designed for producing sound. Instead, their purpose is to tweak a program parameter according to a looping pattern. For example, if you are looking to add some vibrato to your instrument, you'll need the pitch to continuously waver up and down. An LFO is perfect for this application. Simply hooking up an LFO to the oscillator pitch parameter will get you the effect you need. Each of the Micron's voices contains two LFOs.

The Envelopes

If you hit a note on a piano, you'll hear a burst of sound energy as the hammer strikes the string, followed by lower level of loudness as you hold down the note and let the string ring out, which fades quickly as soon as you release the note and the damper is applied. Synthesizer designers model this behavior using *ADSR envelopes*. ADSR stands for “attack, decay, sustain, release”, and represents the different stages that the sound goes through over the life of the note. Since the most important application of the envelope is to control the loudness of the sound, the Micron provides one envelope that is specifically designed for this purpose. This is the *amp envelope*. However, envelopes are useful in all sorts of mod routes, which is why you can hook up any of the Micron's envelopes to any modulatable program parameter. Each of the Micron's voices contains three envelopes.

Playing Programs

Press the **[programs]** button to enter programs mode. Release the **[programs]** button and spin the control knob to cycle through the programs first by category and then – after you have reached the last program within the last category – again in alphabetical order.

You can also quickly switch to any category by holding down **[programs]** and then pressing the white key on the Micron’s keyboard labeled with that category.

Note that the “recent” category is generated automatically. The “faves” category is controlled by you, as detailed in the next discussion.

Editing Programs

1. Revert-to-Stored? / Unrevert-to-Edited?

If you have edited a program, you may revert back to the original version. Once you are on this page, press the control knob to revert.

Go back to your edited state by pressing the control knob a second time to *unrevert*.

Use *revert* and *unrevert* often in order to compare your changes to the original program. When you’re satisfied with your work, press **[store]** to save your changes.

2. Add to Faves? / Remove Fave?

Press the control knob to enter edit mode. Once you are on this page, press it again to add this program to the *faves* (favorites) list. When you make a program a fave, it is accessible not only in its own category but also in the *faves* category.

To remove the program from your *faves* list, first select it in the *faves* category (see the sidebar) and then enter edit mode by pressing the control knob. “Remove fave?” is the first option you will see. Press the control knob to confirm the action.

Accessing Faves

*Press and hold the **[programs]** button and press the low D key (labeled “faves”) to access the programs you’ve stored in the faves category.*

3. Send to Setup?

Pressing the control knob at this option sends you to [setups] mode and allows you to make this program a part in the last-selected setup.

Any existing setup already has one or more parts, so you will be given the option of adding this program to the setup in one of the following ways:

1. **send to part.** The setup's part is replaced by the current program. The setup part's level, effects mix, key range, and latch status are retained. See the sidebar for a description of how the parts' letter assignments are affected.
2. **layer.** The setup's existing part is duplicated, resulting in a new part. This new part uses the program's information but retains the level, effects mix, and other information of the setup's original part. See the sidebar for a description of how the parts' letter assignments are affected.
3. **split low.** The setup's existing part is split in two at a particular key.

The Micron prompts for a note on the keyboard at which to execute the split. The program is then sent to the lower part of the split. Every note *below* the one you select will use this new program, down to that part's low key setting. Every note *including and higher than* the note you select will use the setup's existing part.

The new part is assigned the letter of the part that was split low. For example, if the setup contains parts A, B, C, and D, and part B is the part that is split, then the newly added part will become part B, and the original part will become part C. All later parts' letters are incremented by one.

To select the split point, turn the control knob or play a key. You can use the [octave] buttons if your desired split point is outside of the current key range.

4. **split high.** The setup's existing part is split in two at a particular key.

As with the *split low* option, the Micron prompts for a note on the keyboard at which to execute the split. The program is then sent to the upper part of the split. Every note *above* the one you select will use this new program, up to that part's high key setting. Every

Send to setup only allows the option of sending the program to the current setup. Therefore, you may need to jump out of program editing to choose a setup before returning to programs and following this procedure.

How part letters change when "layer," "split low," and "split high" are used
When parts are layered or split high, the new part is assigned the next letter after the targeted part. All subsequent part letters are incremented by one.

For example, consider a setup with four existent parts:

A
B
C
D

If we split part B, the result is as follows:

A
B (low split of B)
C (high split of B)
D (formerly "C")
E (formerly "D")

note *including and lower than* the note you select will use the setup's existing part.

To select the split point, turn the control knob or play a key. You can use the **[octave]** buttons if your desired split point is outside of the current key range.

5. **add part.** The program is added as a brand new part across the entire keyboard range. All other part parameters are set to their default values as well.

4. Start New Setup?

Pressing the control knob at this option creates a new setup named with the program's name and a "+" in front (e.g. "+Repeater" or "+TranceTube") and, if a setup with this name already exists, a number at the end (e.g. "+Repeater2" or "+TranceTube2"). After doing this, you'll notice that the program mode button is no longer lit; the Micron has switched into setups mode.

If you have not chosen to start a new setup, then you are still in programs mode. Turning the control knob further clockwise scrolls through the many program editing parameters, as follows:

5. Voice parameters

Polyphony

monophonic

One note at a time.

polyphonic

Up to eight notes at a time.

Unison

one voice/note

the Micron's voices are distributed evenly amongst up to eight simultaneously held keys.

two voices/note

Each key triggers two voices, thereby halving the available polyphony down to four.

four voices/note

Each key triggers four voices and the Micron's polyphony is reduced to two simultaneous voices.

all voices/note

Reduces the Micron to monophonic operation, with all available voices dedicated to a single note.

UsnDetune

Select the pitch range by which unison voices will be detuned. Higher values lead to a thicker but more out-of-tune sound.

Note: when the polyphony parameter is set to mono and the unison parameter is set to one voice/note, the UsnDetune parameter has no effect.

Mapping the (x/y/z) knobs

Any parameter may be mapped to the x, y, or z knobs. When the parameter is on the screen, simply hold down the control knob and wiggle the knob that you want to map to.

Quick access to editing

To jump to the voice category, hold down the **[programs]** button and press the key labeled "voice."

Portamento

Set the amount of “glide” between notes:

off

No portamento.

legato only

Portamento will occur only if you play a second key before lifting up the first key.

always

Portamento will occur even if there is no overlap between the lifting of one key and the playing of another.

PortaType

Set the type of portamento:

fixed

No matter how far apart the two keys are, it takes the same amount of time to travel between them. The PortaTime parameter determines this amount of time.

scaled

With this setting, the PortaTime parameter determines the amount of time it takes to glide a distance of one octave.

gliss fixed

Identical to *fixed*, but with the glide stepping chromatically (C, C#, D, D#, etc.) rather than smoothly.

gliss scaled

Identical to *scaled*, but with the glide stepping chromatically (C, C#, D, D#, etc.) rather than smoothly.

PortaTime

Set the base time for portamento to slide from note to note.

Pitch Wheel

When set to *bend all notes*, moving the pitch wheel will bend the pitch of all voices that are sounding, even if they are being sustained by the (sust pedal) or are in their release stage.

When this parameter is set to *bend held notes*, only voices for which the keys are still depressed will allow their pitch to be bent by the pitch wheel.

AnlgDrft

Set the amount of simulated analog drift, up to 100%.

Analog synthesizers have circuits that drift out of tune over time. Adding a touch of drift can increase the realism of the Micron's analog emulation.

Osc Sync

Set how the oscillators synchronize to one another.

off

The oscillators sound independent of one another.

hard 2 to 1

Hard sync resets oscillator 2 to the beginning of its waveform whenever oscillator 1 hits the beginning of its waveform. This has the effect of forcing oscillator 1's fundamental frequency onto oscillator 2. This behavior is called "hard sync" because the slave waveform is "snapped" to zero at the frequency of the master oscillator, which can create a harsh, rough sound even out of sine waves.

hard 2+3 to 1

Oscillators 2 and 3 are forced to "hard sync" to oscillator 1.

soft 2 to 1

Every time oscillator 1 begins its cycle, oscillator 2 reverses direction. The resulting wave has no sharp edges, as it does with hard sync, but exhibits a mixture of harmonics that can have interesting sonic properties.

soft 2+3 to 1

Oscillators 2 and 3 are forced to "soft sync" to oscillator 1.

FM Amount

FM, or “frequency modulation,” allows you to use one oscillator to control the frequency of another. Set the percentage by which the target oscillator’s frequency is affected by the master oscillator’s waveform.

FM TypeA. Linear FM types

lin 2 > 1

Oscillator 2 is added to the phase of oscillator 1. Linear FM is the style used by typical FM music synthesizers. Modulating a sine wave with another, higher-frequency sine wave produces a fundamental frequency with a variety of overtones, and this can be used to reproduce the sounds of many physical musical instruments.

lin 2+3 > 1

Oscillators 2 and 3 are added to the phase of oscillator 1.

lin 3 > 2 > 1

Oscillator 3 is added to the phase of oscillator 2. The resultant waveform is added to the phase of oscillator 1.

With linear FM, the *FM Amount* controls the “modulation index”, with a level of 100% providing an index of 32.

B. Exponential FM types

exp 2 > 1

Oscillator 2 modulates the pitch of oscillator 1.

exp 3 > 2 > 1

Oscillator 3 modulates the pitch of oscillator 2. The resultant waveform modulates the pitch of oscillator 1.

With exponential FM, the *FM Amount* controls the range of pitch modulation, with a level of 100% driving the pitch up and down a full six octaves.

6. Oscillator parameters

These parameters are repeated for each of the Micron's three oscillators.

Waveform

sine

Smooth and pure sound.

tri/saw

A triangle wave, a sawtooth wave, or anything in between. A triangle wave has a fuller sound than a sine wave, whereas a sawtooth wave has a harsh sonic character.

pulse

Harmonically the richest of the three waves, *pulse* can range from a very full-sounding square wave to a sharp, nasally impulse wave.

Waveshape

This parameter bends the waveform.

For the *sine* waveform, a shape of zero gives you a pure tone. As you increase the shape, the sine wave deforms to add higher harmonics.

For the *tri/saw* waveform, a shape of zero results in a triangle wave. As you adjust the shape, the wave leans left or right, ultimately becoming a down-saw or an up-saw at -100% or 100% respectively.

For the *pulse* waveform, the shape parameter controls the pulse width. A shape of zero gives you a square wave, and decreasing or increasing the shape will make your wave skinnier or fatter respectively.

Octave

Transposes the pitch up or down over a +/- three-octave range.

Transpose

Transposes the pitch up or down over a +/- seven-semitone range.

Pitch

Transposes the pitch over a +/- 99.9-cent range.

Quick access to editing
To jump to the oscillator category, hold down the [programs] button and press the key labeled "osc."

PWhlRange

Sets the range of the pitch wheel, from 0 semitones (off) to +/- 12 semitones (one full octave).

7. Pre-filter mix parameters

Before the sound sources are sent to the filters, they are mixed together. Use the pre-filter mix parameters to set the levels for each of the oscillators, the ring modulation, noise, and external sources. Also set the amounts of each of these sources to be sent to filter 1 (f1) and filter 2 (f2)

Also set the noise type to *white* or *pink*. White noise has the same amount of energy across all frequencies, sounding like hiss.

Since there are so many more frequencies higher (in the treble range) than there are lower (in the bass range), white noise sounds trebly. Pink noise, on the other hand, progressively reduces the energy of the higher frequencies to provide an even sound across the frequency spectrum. Where white noise sounds like hiss, pink noise sounds like a roar or ocean wave.

White noise has a sharp sound which makes it especially good for percussive effects, whereas the frequency characteristics of pink noise are more soothing and pleasant to the human ear.

Quick access to editing

To jump to the pre-filter mix category, hold down the [programs] button and press the key labeled "premix."

8. Filter parameters

Each of the two filters has the following editable parameters:

Type

Choose from a collection of classic and modern filter types.

Freq (Frequency)

Dial in the frequency at which the filter begins to operate.

Res (Resonance)

Add a boost at the current filter frequency. Very high resonance settings can cause certain filter types to “whistle,” or self-oscillate.

Keytrk (Key tracking)

Set whether the filter frequency rises and falls to match the keys you play or stays constant regardless of the keys you play. A setting of 0 means the filter frequency will remain constant across the keyboard. If the key track parameter is set to +100, the filter tracks the keyboard perfectly, and with enough resonance, can be played as if it were an oscillator. Negative settings mean the filter will grow darker as higher notes are played.

EnvAmt (Envelope Amount)

Set the degree to which the filter frequency will be affected by the filter envelope. A negative setting inverts the envelope.

Additionally, filter 2 has the following parameter:

Offset

Absolute

The value assigned for filter 2’s frequency setting is applied normally.

Offset

The value assigned for filter 2’s frequency is locked into a relative position with filter 1’s frequency. Filter 2’s frequency automatically rises and falls in step with filter 1’s frequency.

Quick access to editing

To jump to the filter category, hold down the [programs] button and press the key labeled “filter.”

Mapping the (x/y/z) knobs

Remember, any parameter may be mapped to the x, y, or z knobs. When the parameter is on the screen, simply hold down the control knob and wiggle the knob that you want to map to.

9. Post-filter mix parameters

Set the mix levels and left-right pan positions for filter 1, filter 2, and the pre-filter mix.

Also set the following parameters:

Preflt Src (Pre-Filter Source)

You may not want to send all of the pre-filtered sound sources through the pre-filter source output. The Micron lets you choose any of the individual sound sources instead, as well as of course allowing you to choose the mix originally sent to filter 1 or filter 2. Here are the options:

- osc 1
- osc 2
- osc 3
- fltr 1 input mix
- fltr 2 input mix
- ring mod
- noise

Flt 1 Sign (Filter 1 Polarity)

Choose *positive* polarity for normal summing of the *filter 1* and *filter 2* signals. Choose *negative* polarity to throw the two filters out of phase with one another, creating peaks and notches at various frequencies.

Quick access to editing

To jump to the post-filter mix category, hold down the [programs] button and press the key labeled "postmix."

10. Output

Drive Type

Select bypass for a clean sound or one of compressor, rms limiter, tube overdrive, distortion, tube amp, or fuzz pedal.

Drive Level

Set the amount of drive, from 0 to 100%.

Prgrm Level (Program Level)

Set the amount of non-drive level, from 0 to 100%.

FX Type (Effects Type)

Select *bypass* for no effect, or select one of the built-in effects.

FX Mix (Effects Mix)

Set the level for the effects-processed audio, from 0 to 100%.

FX Param (Effects Parameters)

Different screens appear in this area depending on the effects type chosen. Set the effect's parameters here.

Quick access to editing

To jump to the output category, hold down the [programs] button and press the key labeled "output."

11. Envelopes

For each of the three envelopes, set the attack time and slope (**Atk**), the decay time and slope (**Dcy**), the sustain time and level (**Sust**), and the release time and slope (**Rel**).

The *sustain time* parameter determines the length of the sustain stage of the envelope. If you are familiar with analog synths, this parameter may surprise you, since a traditional synth will remain in the sustain stage as long as you have the note held down. The Micron provides this behavior, of course – simply set this parameter to “hold”, and your note will be sustained until your finger gets tired. But many physical instruments do not work like this. A piano, for example, exhibits a distinct attack and decay as the hammer strikes the string, but the string does not then ring forever—the volume slowly diminishes until the string is silent. The Micron allows you to model this behavior by specifying a sustain time. This is the amount of time it takes for the envelope level to drop from the sustain level to zero. Once the envelope has sustained to zero, the envelope has completed and will remain at zero. When the amp envelope has sustained to zero, that means the entire note has completed and will no longer use one of the synth’s voices.

The *sustain level* parameter specifies the level that the sound settles into as the envelope completes its decay and moves into the sustain stage. At 100%, decay becomes inaudible. At 0%, the decay becomes complete, resulting in silence. Generally, values in the middle of the range are most useful.

For the filter and pitch/mod envelopes, this parameter can be negative. Since the subsequent envelope stages always head back towards zero, a negative sustain level will give you an envelope that zigs high, zags low, and ends up somewhere in the middle.

Here are the additional envelope parameters:

Quick access to editing

To jump to the envelopes category, hold down the [programs] button and press the key labeled “env.”

Mapping the (x/y/z) knobs

Remember, any parameter may be mapped to the x, y, or z knobs. When the parameter is on the screen, simply hold down the control knob and wiggle the knob that you want to map to.

Velocity (Keyboard Velocity Tracking)

This parameter determines the extent to which the note velocity, or how hard you hit the key, affects the envelope. When set to 0%, the envelope always comes out full-strength, regardless of how lightly you hit the key. When set to 100%, the amplitude of the envelope directly matches the velocity, and very light keystrokes will result in very weak envelopes. Parameter values in the middle scale accordingly.

In all cases, a hard keystroke produces a strong envelope. This parameter just lets you choose the envelope strength for weak keystrokes.

Reset

on every note

Whenever you press a key, the envelope starts at the beginning.

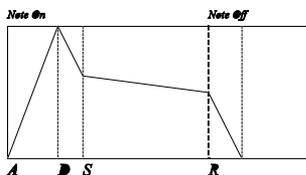
unless legato

If you play one note while holding down another, the new note's envelope starts at the current position of the held note.

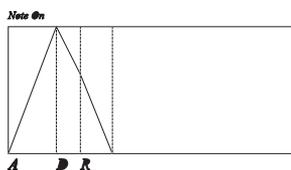
Freerun

This parameter determines the how the envelope treats its sustain portion. If set to *off*, then the envelope transitions from the attack stage to the decay stage to the sustain stage, as long as you are holding the key down. As soon as you take your finger off the key, the envelope will move into the

“off”



“on”



release stage. If this parameter is set to *on*, then there is no sustain stage—the envelope transitions from attack to decay to release. Furthermore, it doesn't matter how long you hold down the key; the envelope always follows this fixed-length program.

If you are using the **Loop** feature of the envelope, this parameter will have further effects on the envelope behavior, and these will be discussed below.

Loop

These settings determine how the envelope is used when notes are held down (sustained).

off

The envelope acts normally. (When the end of the envelope is reached, the note stops playing.)

attack/decay

The envelope loops through the attack and decay stages. (If **Freerun** is *on*, the envelope will even continue looping after you release the note. You will usually only want to use this configuration with your filter or pitch/mod envelopes. If you set up the amp envelope to loop forever, you'll only be able to stop it by playing a lot of other notes at once to steal the voice.)

entire envelope

The envelope loops through the entire envelope. As in *attack/decay*, if **Freerun** is *on*, the envelope will continue looping after you release the note.

while note held

The envelope loops through the attack and decay stages, but only while the note is held down, regardless of the **Freerun** setting.

Sus Pedal (Sustain Pedal)*on*

The Micron treats the sustain pedal as if you are holding notes down on the keyboard, keeping notes within the sustain section of the envelope as long as the sustain pedal is held down.

off

The Micron ignores the sustain pedal relative to the envelope. The envelope only responds to its keyboard (or to an external MIDI controller).

12. Low Frequency Oscillator (LFO) settings

TempoSync (Tempo Synchronization)

fixed rate

The LFO rate is independent of the tempo set with the **[tap]** button.

follow tempo

The LFO's rate is a multiple of the tempo set with the **[tap]** button.

If **TempoSync** is *off*, the rate is adjustable from 0.010 – 1000 Hz (cycles per second).

If **TempoSync** is *on*, the rate represents a fraction of the tempo set with the **[tap]** button. When the value is set to $\times 1$ (“times one”), the LFO will complete its cycle once per quarter note, relative to the tempo setting. When the value is set to $\times 2$, the LFO will cycle once per eighth note. A value of $\times 16$ results in an LFO cycle of 1/64th note, and a value of $\times 1/16$ results in an LFO cycle equivalent to sixteen quarter notes.

Quick access to editing

To jump to the Low Frequency Oscillator category, hold down the [programs] button and press the key labeled “LFO.”

Reset*mono*

The LFO is shared between the voices of a program. It may be at any point in its cycle when the first key is pressed. New voices will “ride” that LFO, joining other voices at the exact same point in the LFO’s cycle. The LFOs in each program are independent of each other, so they can be running at different speeds.

poly

Each voice’s LFO is completely independent of the others. When a key is pressed, that voice’s LFO may be at the top of its cycle, at the bottom, or anywhere else in the cycle when it begins to affect the voice.

key-mono

The LFO is shared between the voices of a program. When the first key is pressed, the LFO’s cycle resets to the beginning. When a second key is pressed, the LFO will reset its cycle to the beginning and start over.

key-poly

Each voice has its own LFO that resets when the voice is triggered.

tempo lock

The LFO locks to the master tempo clock, as long as TempoSync is set to “follow tempo”.

M1 Slider

To place the LFO’s effect on the oscillators under the total control of the **(m1)** slider, set this value to 100%. To ignore the **(m1)** slider altogether, set the value to 0%. Values in between allow for limited **(m1)** control over the LFO.

*Remember that it is possible to have the LFOs set independently, so that one LFO’s Reset parameter may be set to **poly**, for example, while the other’s is set to **key-mono**.*

Synchronizing the LFO’s to your patterns and rhythms

If you want your LFOs to sync up with your patterns and rhythms, set TempoSync to “follow tempo”, and set Reset to “tempo lock”.

Why is my LFO not working?

If you routed an LFO to a destination in the mod matrix, but it doesn’t seem to have any effect, check the “m1 slider” parameter. If this parameter is set to 100%, then the LFO will only be active if the m1 slider is up. If you want the LFO to always be active, set this parameter to 0%.

13. Sample-and-Hold (S&H) settings

The first three settings – **TempoSync**, **Rate**, and **Reset** – operate identically to the LFO settings listed above. Here are the additional S&H settings:

Input

The Input to the Sample & Hold determines the source of the S&H values. If the source is continuously active, like an LFO, there will be an endless supply of new values for the Sample & Hold to feed to its destination in the mod matrix. If the source is something more static like one of the wheels or pedals, the destination will receive new values from the Sample & Hold only after the value of the input is changed and another sample is taken.

The inputs for the S&H generator are the same as the Modulation Matrix's modulation sources (discussed later). See page 80 for a list of those inputs.

Smoothing

This parameter governs the abruptness of the shift from the value of one sample to the value of the next. A low smoothing value causes the sample values to change instantly from one value to the next when the new sample is taken. A high smoothing value causes the Sample & Hold to “slide” from one value to the next.

What does Sample & Hold mean?

Sample & Hold is a term that originated in the early days of analog modular synthesizers. It describes the process by which a reading, or “Sample,” is taken at regular intervals of a particular input source, such as an LFO. That Sample becomes a value that is fed to a destination, such as filter frequency. The destination parameter is held at this value until the “Hold” period has expired, at which time another Sample of the input source is taken and fed to the destination, and so on.

S&H Smoothing

With Sample & Hold smoothing set to very high values, it is possible that very little or no change may be heard at the destination. If you're not hearing the desired amount of S&H, try increasing the smoothing value.

14. Track (Tracking Generator)

The tracking generator lets you create your own curves for the modulation sources. This allows for non-linear effects. For instance, as a source increases in amplitude, the destination can be affected first negatively, then positively, and then negatively again.

The inputs for the tracking generator – like those for the S&H generator – are the same as the Modulation Matrix’s modulation sources (discussed later). See page 80 for a list of those inputs.

Grid

The input to the Tracking Generator is quantized to either 12 or 16 points above and below 0.

Point x

After you’ve created your grid, you can cycle through each point and set its value from -100% to +100%.

An example should help clarify the concept:



Track: Grid
16 pts

At the left, 16 *points* are indicated. This is the number of *positive* points. There are 32 points total, if you count the negative ones. Indeed, the display shows 32 points – 16 each to the left and right of the y axis.

Now, what’s displayed is a pretty radical tracking generation. As you can see, before the midpoint of this source’s range, increasing values are intercepted by the tracking generator and turned into wildly non-linear, unexpected results. When the midpoint is reached, the tracking generator locks the source’s output at 0 (its middle range). Then, at the eighth positive point, the tracking generator gradually ramps up the source’s output value. It holds steady for a while and then begins a gradual descent at the fourteenth positive point. How does all this sound? Pretty weird.

Remember, without the tracking generator, the source’s output would function normally – you’d see a diagonal line rising from the bottom left to the top right, without interruption. The purpose of the tracking generator is to intercept and regenerate that line.

Quick access to editing
To jump to the tracking generator category, hold down the [programs] button and press the key labeled “track.”

15. Mod (Modulation Routing)

For each of the twelve possible modulation routes, set the *source*, the *destination*, the *level*, and the *offset*.

The *level* determines the extent to which the source will affect the destination.

The *offset* changes the destination's value before the modulation begins.

After the last modulation route, you can add a new route, up to the maximum twelve routes.

To remove a mod route, select the "Dest" parameter and turn the control knob all the way to the left. The Micron will ask, "Remove mod?" Push the control knob to confirm.

Quick access to editing

To jump to the modulation routing category, hold down the [programs] button and press the key labeled "mod."

Mod sources

Here are the inputs to the modulation matrix:

Source	Description
None	No effect
Note-On Velocity	Velocity (how hard) the key is struck
Release Velocity	Velocity that the key is released.
Key Track	MIDI Key # used as modulator. MIDI note #60 is equivalent to 0.
M1 Wheel	Position Value of M1 Wheel, or incoming MIDI CC#00 message.
M2 Wheel	Position value of M2 wheel, or incoming MIDI CC as assigned
P Wheel	Position value of P wheel, or incoming MIDI Pitch Bend messages
Sustain Pedal	Position (Up/Down) of Sustain pedal, or incoming MIDI CC#64 messages
Expression Pedal	Position value of Exp pedal, or incoming MIDI CC as assigned
Amp Env Level	Amp Envelope Level
Filter Env Level	Filter Env Level
Pitch/Mod Env Level	Pitch/Mod Env Level
LFO 1 Sine	LFO 1 Sine output
LFO 1 Cosine	LFO 1 Sine output, phase shifted 90 degrees
LFO 1 Triangle	LFO 1 Triangle output
LFO 1 Cos-Triangle	LFO 1 Triangle output, phase shifted 90 degrees
LFO 2 Saw	LFO 1 Saw output
LFO 2 Cos-Saw	LFO 1 Saw output, phase shifted 90 degrees
LFO 1 Square	LFO 1 Square output
LFO 1 Cos-Square	LFO 1 Square output, phase shifted 90 degrees
LFO 2 Sine	LFO 1 Sine output
LFO 2 Cosine	LFO 1 Sine output, phase shifted 90 degrees
LFO 2 Triangle	LFO 1 Sine output
LFO 2 Cos-Triangle	LFO 1 Sine output, phase shifted 90 degrees
LFO 2 Saw	LFO 1 Sine output
LFO 2 Cos-Saw	LFO 1 Sine output, phase shifted 90 degrees
LFO 2 Square	LFO 1 Sine output
LFO 2 Cos-Square	LFO 1 Sine output, phase shifted 90 degrees
S&H Output	Output of the Sample and Hold processor.
Voice Random	Random modulation source, unique to each voice
Global Random	Random modulation Source, common to all voices
Portamento Level	Level of Portamento output, as a percentage of the "glide" travel from starting note to ending note.
Portamento Effect	Portamento Level scaled by keyboard position, so that the modulation level follows the note's pitch.
Tracking Generator	Output of Tracking Generator, Interpolated
Step Track	Output of Tracking Generator, Stepped
MIDI Channel Pressure	Monophonic (per-MIDI Channel) Aftertouch, MIDI only
MIDI Aftertouch	Polyphonic (per-note) Aftertouch, MIDI only
MIDI CC 1...119	Value of incoming MIDI Continuous Controller messages

Mod destinations

Here are the possible destinations for the modulation matrix:

Destination	Description	
None	No effect.	
Voice Pitch	Modulates pitch of all three oscillators	
Osc 1 Pitch Full	Modulates oscillator pitch through entire 10 octave range	
Osc 2 Pitch Full		
Osc 3 Pitch Full		
Osc 1 Pitch Narrow	Modulates oscillator pitch, constrained to 1 octave	
Osc 2 Pitch Narrow		
Osc 3 Pitch Narrow		
Osc 1 Shape	<i>See equivalent Program Parameters</i>	
Osc 2 Shape		
Osc 3 Shape		
Osc FM Level		
Osc 1 Level		
Osc 2 Level		
Osc 3 Level		
Ring Mod Level		
Noise Level		
Ext In Level		
Osc 1 Balance		
Osc 2 Balance		
Osc 3 Balance		
Ring Mod Balance		
Noise Balance		
Ext In Balance		
F1 -> F2 Level		
Portamento Rate		
Unison Detune		
Filter 1 Freq		
Filter 1 Res		
Filter 1 Env Mod		
Filter 1 Keytrack		
Filter 2 Freq		
Filter 2 Res		
Filter 2 Env Mod		
Filter 2 Keytrack		
LFO 1 Rate		
LFO 1 Amplitude		Scales the amplitude of LFO 1's output - thus affecting the amount that the LFO can modulate anything else.

LFO 2 Rate	<i>See equivalent Program Parameter</i>
LFO 2 Amplitude	Scales the amplitude of LFO 2's output - thus affecting the amount that the LFO can modulate anything else.
S&H Rate	<i>See equivalent Program Parameter</i>
S&H Smoothing	
S&H Amplitude	Scales the amplitude of the S&H output - thus affecting the amount that the S&H can modulate anything else.
Filter 1 Level	<i>See equivalent Program Parameters</i>
Filter 2 Level	
Pre-Filter Level	
Filter 1 Pan	
Filter 2 Pan	
Pre-Filter Pan	
Drive Level	
Program Level	Program output level
Main/Aux Balance	<i>See equivalent Part parameters</i>
Pan	
Amp Env Amplitude	Scales the amplitude of the envelope's output - thus affecting the amount that the envelope modulates anything else.
Amp Env Rate	Modulates all of the envelope time stages - Attack, Decay, Sustain and Release - simultaneously.
Amp Env Attack	<i>See equivalent Program Parameters</i>
Amp Env Decay	
Amp Env Sust Time	
Amp Env Sust Level	
Amp Env Release	
Filter Env Amplitude	Scales the amplitude of the envelope's output - thus affecting the amount that the envelope modulates anything else.
Filter Env Rate	Modulates all of the envelope time stages - Attack, Decay, Sustain and Release - simultaneously.
Filter Env Attack	<i>See equivalent Program Parameters</i>
Filter Env Decay	
Filter Env Sust Time	
Filter Env Sust Level	
Filter Env Release	
P/M Env Amplitude	Scales the amplitude of the envelope's output - thus affecting the amount that the envelope modulates anything else.
P/M Env Rate	Modulates all of the envelope time stages - Attack, Decay, Sustain and Release - simultaneously.
P/M Env Attack	<i>See equivalent Program Parameters</i>
P/M Env Decay	
P/M Env Sust Time	

P/M Env Sust Level	Parameters
P/M Env Release	
Effects Level	
Effects Mix	
Effects Parameter A	
Effects Parameter B	
Effects Parameter C	
Effects Parameter D	

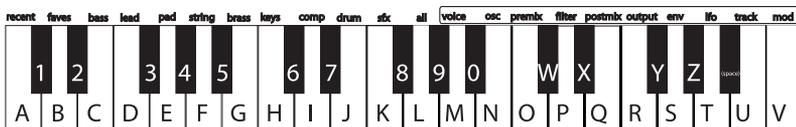
16. Category

Place the program in one of the Micron's pre-defined categories.

17. Program name

Since programs are listed alphabetically, creative naming can help you move smoothly from one program to another.

Turn the control knob to select a position (1 – 14) to edit. Then press the control knob to edit that position. Edit either by turning the control knob or pressing notes on the keyboard.



Press a key twice to toggle between upper and lower case.

Inserting and deleting characters

To insert a space in the name, navigate to the position at which you want to add the space. Hold down the control knob and turn it clockwise.

To delete a character, navigate past it, hold down the control knob, and turn it counterclockwise.

In both cases, imagine that you are “dragging” the name around.

18. Delete?

Delete the program using this function, if desired.

19. Send MIDI sysex?

Choose this option to send the pattern to a computer or other MIDI storage device using the Micron's **(MIDI OUT)** port.

This allows you to back up your patterns to your computer, or share them with your friends or over the internet. See page 95 for details on what Sysex is and how to use it.

20. Store a copy?

Unlike many synths, the Micron does not have fixed “banks” of programs, patterns, and so on, each with a predetermined number of storage locations. Instead, you may freely create and delete programs at any time, just as you would on a computer.

“Store a copy?” is how you create a new program. This option creates a brand new copy of the current program, differing only in name. Now, when you make changes and hit the **[store]** button, you will be storing to this new copy.

Whenever you want to start a new program from scratch, you will have to find an existing program to base it off of, and then store a copy. Don't forget to store a copy, or you might accidentally overwrite the original program.

Store your changes!

Be sure to press the **[store]** button after you're satisfied with your changes. Otherwise, your changes will be lost when the Micron is turned off.

However, keep in mind that you don't lose any changes when you switch to other modes, so feel free to browse through patterns or setups without storing your program. Additionally, if you play a setup that uses the current program, you'll hear your edited version, even without storing. This is a great way of checking how your edits sound in the context of a setup, without having to commit to them.

You can even play other programs without losing your edits. Just hit the **[programs]** button and turn the control knob. You can always come back to your edited program, just as you left it. The Micron doesn't discard your edits until you start editing a different program.

Exiting program editing

You can exit program editing at any time. Simply press any of the buttons encircling the control knob, including the **[programs]** button a second time.

6

Programs

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Configuration

Press **[config]** to set the Micron's global configuration options. **[config]** only glows red, indicating that it is always in edit mode.

Configuration Parameters

1. Contrast

Adjust the LCD screen's contrast.

If you happen to turn on your Micron and the screen is blank, it's possible that your contrast setting was somehow turned down. Since contrast is the first of the config options, you should be able to get to it even when navigating blindly. Simply hit the **[config]** button, push the control knob, and turn clockwise.

2. Tuning

Adjust the Micron's global tuning over a plus or minus 200 cent range.

One cent is equal to $1/100^{\text{th}}$ of a semitone, so this means that the global tuning can be raised or lowered by up to a whole step.

The Micron's default tuning is set to A=440 Hertz.

3. Transpose

Shift the placement of the Micron's keyboard with respect to the 128-note MIDI key range. By default, the Micron's keyboard spans from C4 to C7; this option lets you offset that. You can also use the **[octave]** buttons to quickly transpose up and down by octaves.

This option does not affect how incoming MIDI notes are interpreted.

Double-click to restore defaults

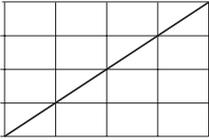
Configuration options can be reset by pressing the control knob twice quickly (double-clicking).

4. Velocity Curve

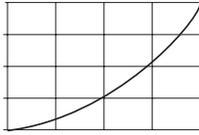
Edit the keyboard's response to your playing velocity.

This option affects the velocity values that are generated when you play the keyboard; it has no effect on incoming MIDI notes.

Options are linear low, medium and high; exponential low, medium and high; and logarithmic low, medium and high.



Linear



Exponential



Logarithmic

Press the control knob to edit the velocity *curve*. Turn the control knob to select a new curve. Press the control knob again to accept the *curve* setting and return to the main config menu.

5. Local Control

Turn the control knob clockwise once to edit the keyboard's *local control* setting. Options are “on” or “off.”

By default, local control is set to “on.” Set to “on,” the Micron functions normally – the keyboard, pitch wheel, sliders, footswitches, and pedal all play the Micron.

Setting local control to “off” disconnects the Micron's sound engine from all of these controllers.

Leave local control “on” in most situations. There are three main exceptions:

a. External Sequencers

Consider turning local control “off” when you use MIDI cables to connect the Micron to an external sequencer, such as a computer-based or standalone Digital Audio Workstation. When you record with a sequencer, usually that sequencer “echoes” back whatever you play into it. So, if you leave local control on, everything you do play will trigger twice – once as a result of your playing, and once as the sequencer replays what you've just played. This is generally undesirable.

b. Using the Micron within a multi-controller setup

Imagine a saxophonist who wants to control the Micron with a MIDI wind controller. At the same time, the saxophonist has a rack-mounted sound module that she wants to control using the Micron keyboard. Setting local control off makes sense in this case, too, as playing the wind controller will trigger the Micron, and playing the Micron will trigger the sound module.

c. Using the Micron with a MIDI patch bay

If you employ a MIDI patch bay to route controllers and sound sources, you will probably want to set local control to off.

6. MIDI mode

MIDI mode options are “single-channel” or “multi-channel.”

This setting affects setups. In “single-channel” mode, the Micron only sends and receives MIDI data over one of the 16 possible MIDI channels. In “multi-channel” mode, each part and beat sends and receives MIDI data on a separate channel.

Turn the control knob to select either “single-channel” or “multi-channel.”

7. MIDI channel

Your options will differ depending upon the setting chosen earlier in *MIDI mode*:

- If the Micron is set to “single-channel” mode, you will be able to select the MIDI channel.
- If the Micron is set to “multi-channel” mode, you will be able to select the MIDI channel for the first part. The channel for each additional part and beat will increment from there. (For instance, if you set the channel to “4,” then Part A will use MIDI channel 4; Part B will use MIDI channel 5; etc.)

Even in multi-channel mode, the Micron will never use a MIDI channel lower than the channel specified in this option, so you can assign the lower channels to other MIDI instruments.

Because there are only sixteen MIDI channels, a setup with more than sixteen parts and beats will not work well in multi-channel mode. The parts that would be assigned channels above 16 will not send or receive MIDI data.

8. MIDI sync

The MIDI sync setting determines how incoming timing signals sent over MIDI are processed.

The default setting for MIDI sync is “off.” In this mode, any incoming MIDI timing data is ignored. This allows you to set the Micron’s tempo normally, using the **[tap]** button and the control knob.

When MIDI sync is set to “ext MIDI sync,” the Micron accepts incoming tempo information from external MIDI devices such as sequencers. When it receives such information, the tempo from the external device controls the tempo setting in the Micron.

A third setting, “gen MIDI clock,” generates tempo information and sends it out via the Micron’s **(MIDI OUT)** port.

To summarize:

- **off:** the Micron sets its tempo independent of other devices.
- **ext MIDI sync:** incoming synchronization from other devices controls the Micron’s tempo.
- **gen MIDI clock:** the Micron controls other devices’ tempo.

9. Sysex: send all

Push the control knob to send a SysEx to a computer or other external device through the **(MIDI OUT)** port on the back of the Micron. This SysEx will contain everything you have stored on your Micron -- every program, setup, rhythm, and pattern. This can be used to back up all of your data at once, or to share your entire collection with others.

Tempo gone haywire?

If your tempo seems to have a mind of its own, see whether MIDI sync is set to “on.” Set it to “off” or “gen MIDI clock” to rectify the situation.

7

Config

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What is MIDI?

MIDI is the communication standard for electronic musical instruments. You can use MIDI to:

- Record what you play on your Micron synthesizer into a sequencer or computer.
- Play back sequences from a sequencer or computer on your Micron.
- Store and recall Programs and Setups on a computer.
- Use a computer to edit your Micron's sounds.
- Use your Micron to control another synthesizer or sound module.
- Use another keyboard to play your Micron's sounds.

Some examples of MIDI devices besides your Micron synthesizer include keyboard controllers, sound modules, drum machines, sequencers, and computers with MIDI interfaces.

MIDI Connections

The Micron has three MIDI connectors:

- **(MIDI IN)** is for receiving MIDI information from another MIDI device.
- **(MIDI OUT)** is for sending MIDI information to another device. Depending on your settings, the data from this port can originate from the Micron itself or simply be echoed from the **(MIDI IN)** port.
- **(MIDI THRU)** echoes whatever is received on the **(MIDI IN)** port.

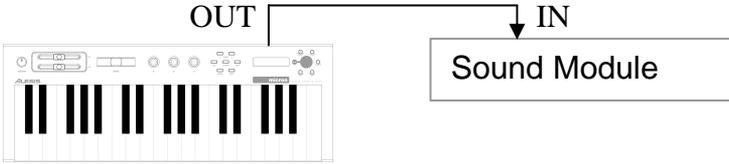
Here are four typical MIDI setups for your Micron, and the appropriate connections for each of them:

Controller.

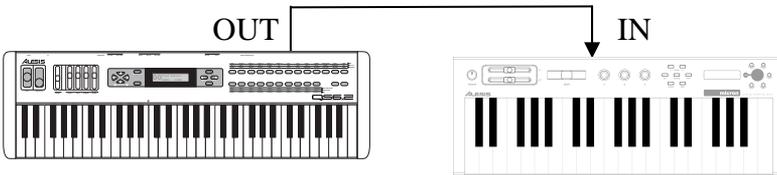
With this setup, you can use your Micron to “play” another MIDI instrument (synthesizer, sound module, drum machine etc.).

Connect a MIDI cable from the Micron’s **(MIDI IN)** jack to the MIDI IN of the device you want to control.

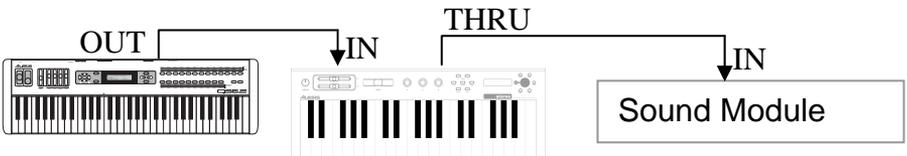
For this setup, ensure that the Micron’s Local Control setting is ON (in the **[config]** settings).

**Slave.**

With this setup, you can use another keyboard to play the sounds on your Micron. Connect a MIDI cable from the controller’s MIDI OUT jack to the Micron’s **(MIDI IN)** jack.

**Slave with pass-through.**

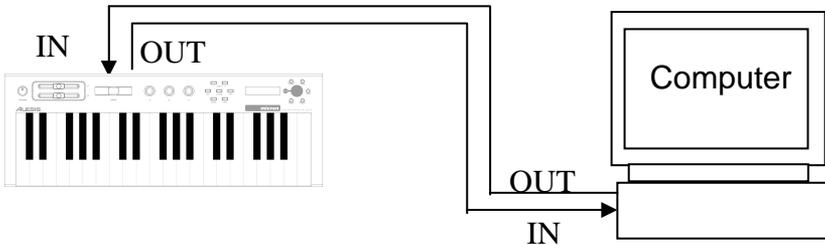
This setup allows MIDI signals to pass through the Micron so they may reach multiple units. This allows one MIDI device to control several. Attach a cable from the MIDI OUT of the first device to the **(MIDI IN)** jack of the Micron; and then attach another cable from the Micron’s **(MIDI THRU)** jack to the MIDI IN of the third device.



Sequencing.

This setup allows you to use your Micron with a MIDI sequencer or a computer with a MIDI interface. Attach one MIDI cable from the MIDI OUT of the sequencer or computer to the **(MIDI IN)** jack of the Micron. Attach another cable from the Micron's **(MIDI OUT)** jack to the MIDI IN of the sequencer or computer.

For this setup, switch the Micron's Local Control setting to OFF (in the **[config]** settings).



Saving Programs, Setups, Rhythms, and Patterns via MIDI System Exclusive

The Micron lets you transmit Programs, Setups, Rhythms, and Patterns to an external device (such as a computer, sequencer, storage device, or another Micron synthesizer) via MIDI.

MIDI devices use a protocol called “System Exclusive” messaging (*Sysex* for short) for transmitting and receiving these communications.

Use the *Send Sysex* and *Send SysEx Bundle* commands from within the **[programs]**, **[setups]**, **[rhythms]**, or **[patterns]** modes to send this information.

To save a SysEx on your computer, you can typically start your sequencer recording, send the SysEx from the Micron, and then save the MIDI file in your sequencer. Your sequencer may also have features for receiving and storing a “SysEx dump” directly. Consult your sequencer's reference manual

Loading Programs, Rhythms, Patterns, and Setups via MIDI

The Micron doesn't need to be in a special mode to receive MIDI SysEx information. Simply connect a MIDI cable from the MIDI out jack of your MIDI player to the **(MIDI IN)** port of your Micron and start the SysEx dump on your MIDI storage device or computer. If everything is working properly, the Micron display will read "Receiving..." and the program, setup, pattern, or rhythm will be loaded.

What's a bundle?

There are two options for sending a setup, rhythm, or pattern: "Send MIDI sysex?" and "Send syx bundle?". The difference has to do with dependencies.

For example, a setup can depend on patterns and rhythms that are stored on your Micron. If you send a setup to a friend and his Micron doesn't have the patterns and rhythms that your setup uses, the setup might not sound the same. Similarly, setups, rhythms, and patterns all depend on programs. If your friend's Micron has a different set of programs than yours, nothing you send him will sound the same.

To solve this problem, you can send a bundle. A SysEx bundle contains the setup, rhythm, or pattern you are sending, plus everything it depends on – all of the rhythms, patterns, and programs that your friend will need to hear your creation exactly as it sounds on your Micron.

NOTE: Some computers are not fast enough to transmit MIDI SysEx data properly. If you are experiencing problems, try adjusting the settings in your MIDI software. Some programs allow you to slow down the transmit rate so the computer hardware can keep up with the software.

Compatibility with Alesis Ion programs

The Micron's programs are 100% compatible with the Alesis Ion. However, the Micron's patterns, rhythms, and setups are not compatible with the Ion.

Sharing programs between the Alesis Micron and the Alesis Ion

Sending programs from the Micron to the Ion

Connect the Micron's **(MIDI OUT)** port to the Ion's MIDI IN port. Send programs using the *Send SysEx* screen from within the Micron's **[programs]** mode.

Sending programs from the Ion to the Micron

Connect the Ion's MIDI OUT port to the Micron's **(MIDI IN)** port. Send programs from the Ion as directed in the Alesis Ion reference manual.

Updating Software Via MIDI

The Micron's operating system software can be upgraded via MIDI. From time to time Alesis will release updates, which will add or enhance features. Software updates will be posted to the Alesis website.

In order to upgrade the Micron's software, you will need a computer with a MIDI interface and MIDI sequencing software.

To Upgrade the Software in your Micron:

- Connect the MIDI OUT of the computer to the **(MIDI IN)** of the Micron.
- Open the “.syx” or “.mid” software file in your sequencer program.
- Turn the Micron's power on while holding both the **[programs]** and **[setups]** buttons.
- After briefly displaying the current operating system version, the display will read “Ready to receive OS through MIDI.”
- Play the “.syx” or “.mid” file.

All Notes Off

The MIDI command **All Notes Off** is used to silence a synthesizer with a note or notes that are stuck on. This is usually caused when a Note On message is received without a Note Off. The Micron responds to the All Notes Off message, and can also send it. Press the **[programs]** button twice in quick succession (double-click) to send All Notes Off.

MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 — 16 1 — 16 each	1 — 16 1 — 16 each	Memorized
Mode	Default Messages Altered	Mode 3 X * * * * *	Mode 3 X	
Note Number	True Voice	0 — 127 * * * * *	0 — 127 0 — 127	
Velocity	Note On Note Off	O O	O O	
After Touch	Keys Ch's	X O ¹	O O	
Pitch Bender		O	O	
Control Change	0 — 120	O	O	
Prog Change	True #	O 0 — 127 * * * * *	O 0 — 127 0 — 127	
System Exclusive		O	O	
System Commo n	Song Pos Song Sel Tune	X X O	X X O	
System Realtime	Clock Commands	O X	O X	
Aux Messages	Local On/Off All Notes Off Active Sense Reset GM On	X X X X	O ² O X O ² X	
Notes :		¹ Sent via wheels or exp pedal, not keyboard ² Recognized as ALL NOTES OFF		

Mode 1: OMNI ON, POLY Mode 3: OMNI OFF, POLY

O : Yes

Mode 1: OMNI ON, MONO Mode 4: OMNI OFF, MONO

X : No

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Frequently Asked Questions

How do I split/layer the keyboard?

It is not uncommon to want to “split” a keyboard so that different ranges are playing different sounds. An example would be a bass sound for the Left hand and a lead sound for the Right hand. Similarly, it is often desirable to layer or “stack” multiple sounds onto the same key(s). An example of this would be layering multiple brass or string sounds to emulate a brass (or string) “section”.

In the Micron, splits and layers are functions of the *setup* mode. In *setups*, navigate to each part’s *low keys* and *high keys* screens to assign splits and layers. See chapter 5 – Setups – for additional detail.

What is a MIDI Sequence?

A MIDI sequence is a data file containing note data that can be played on a MIDI synthesizer like the Micron.

Where can I get more Programs?

Additional Program Banks will be available on the Alesis website free of charge. See the chapter 8 “MIDI” for more information on how to load the additional Programs into your Micron.

Are Micron programs compatible with Ion programs?

Yes! In fact, you can load Ion programs directly into the Micron – and vice versa – using MIDI SysEx.



Frequently Asked Questions

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B

Troubleshooting

If you experience problems while operating your Micron, please use the following table to check for possible causes and solutions *before* contacting Alesis customer service for assistance.

Symptoms	Cause	Solution
The display does not light up when the ON/OFF switch is turned on.	No power.	Check that the power adapter is plugged in properly.
No sound.	Bad Connections.	Check your audio cables; if necessary, swap cables.
	Volume is turned down.	Raise the Volume knob or Exp pedal.
	Local keyboard is disabled.	In the <i>config</i> menu, Set Local Control to “on.”
	External MIDI device sent Volume (CC#7) or Expression (CC#11) commands with a value approaching 0.	Change Setups to revert to default values. Re-transmit higher values from MIDI device.
Notes sustain continuously.	Sustain pedal was plugged in after power was turned on.	Turn the unit’s power off, wait a moment, and then turn it on again.
	Stuck notes due to incomplete MIDI data.	Press the [programs] button twice in quick succession (double-click).
Notes played from Micron have a “doubled” or “flanged” sound	Local Control is set to “on,” and MIDI echo/Thru is enabled on external MIDI device or computer.	In the <i>config</i> menu, Set Local Control to “off.” Disable MIDI echo/Thru on external MIDI device.
Tempo cannot be controlled from within the Micron.	MIDI sync is set to “on.”	In the <i>config</i> menu, Set MIDI sync to “off” or “gen MIDI clock.” Alternatively, ensure that any external devices are not sending MIDI sync information to the Micron.

Recovering from a Crash

If your Micron behaves erratically or “freezes” on you, turn it off, wait for a moment, and then turn it on again. Make sure you turn off any amplification first!

If your instrument still isn't working after that, then disconnect the [MIDI IN] cable and repeat the power on/off trick. This ought to work if your problem is being caused by strange MIDI data coming from an external MIDI device.

Checking the Software Version

To find out what version of the operating system software is currently installed in your Micron, hold down **[setups]** and **[programs]** while turning on the Micron. The current software version will display briefly. Then the Micron will indicate that it is ready to receive an operating system version over MIDI.

To return to normal operation, turn the Micron off and on again.

Cleaning Your Micron

Before doing cleaning of any kind, always disconnect the AC adapter.

For simple dusting and removal of minor dirt, wipe the instrument down with a slightly damp cloth.

For heavy dirt, use a non-abrasive household cleaner such as Formula 409 or Fantastik. Spray the cleanser onto a cloth, then use the cloth to clean the unit.



NEVER spray any cleaner directly onto the Micron — this can destroy the lubricants used in the switches and controls!

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Specifications

Sound Engine

Sound Generation:
Alesis proprietary DSP Analog Modeling

Polyphonic Voices:
8, each with 3 oscillators, 2 multi-mode filters, 3 envelope generators, 2 LFOs, programmable effects send and modulation matrix.

Program Memory:
512 Preset Programs, 32 Multi-timbral Setups, all user-rewritable

Effects:
4 Drive Effects (1 each per Part) plus Master Effects (Shared)

Audio Input

Input Connectors: 2 Balanced 1/4" TRS jacks
Maximum Input Level: +5.2dBu (1.41VRMS) = -0dBFS
Input Impedance: 10k Ω

Audio Output

Output Connectors: 4 Impedance-Balanced 1/4" TRS jacks, 1/4" TRS Headphone Jack
Maximum Output Level: +18dBu (6.17 VRMS) = -0dBFS
Output Impedance: 1k Ω

Audio Performance

Signal To Noise Ratio: >95 dB A-weighted, Ext In to Main or Aux Out
THD+N: < 0.005%, External In to Main or Aux Out
Frequency Response: 20-20kHz \pm 0.20dB, External In to Main or Aux Out
Power Consumption: 12 Watts max (100-240VAC/50-60Hz)

Physical

Keyboard: 37 keys (velocity, release velocity sensitive)
Real-Time Controllers: 3 360-degree Parameter Knobs, 2 Assignable Modulation Sliders, Assignable Pitch Wheel,
Pedal Jacks: Assignable Exp pedal jack, Sustain pedal jack
MIDI Connections: MIDI In, MIDI Out, MIDI Thru

All measurements done over a 20Hz – 20kHz range with a 1kHz sine wave at -1dBFS input. Impedances are measured at 1kHz.

Specifications

Audio Outputs:	Main L/R, Aux L/R, Headphone (1/4" TRS)
Dimensions (WxHxD):	22.75" x 2.75" x 7.75" / 577.85 x 69.85 x 196.85 mm
Weight:	8.25 lbs / 3.5 kg

Warranty / Contact Alesis

Alesis Limited Warranty

ALESIS CORPORATION ("ALESIS") warrants this product to be free of defects in material and workmanship for a period of one (1) year for parts and for a period of one (1) year for labor from the date of original retail purchase. This warranty is enforceable only by the original retail purchaser and cannot be transferred or assigned.

The purchaser should complete and return the enclosed warranty card within 14 days of purchase.

During the warranty period ALESIS shall, at its sole and absolute option, either repair or replace free of charge any product that proves to be defective on inspection by ALESIS or its authorized service representative. In all cases disputes concerning this warranty shall be resolved as prescribed by law.

To obtain warranty service, the purchaser must first call or write ALESIS at the address and telephone number printed below to obtain a Return Authorization Number and instructions concerning where to return the unit for service. All inquiries must be accompanied by a description of the problem. All authorized returns must be sent to ALESIS or an authorized ALESIS repair facility postage prepaid, insured and properly packaged. Proof of purchase must be presented in the form of a bill of sale, canceled check or some other positive proof that the product is within the warranty period. ALESIS reserves the right to update any unit returned for repair. ALESIS reserves the right to change or improve design of the product at any time without prior notice.

This warranty does not cover claims for damage due to abuse, neglect, alteration or attempted repair by unauthorized personnel, and is limited to failures arising during normal use that are due to defects in material or workmanship in the product.

THE ABOVE WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTIES OR REPRESENTATIONS WHETHER EXPRESS OR IMPLIED OR OTHERWISE, WITH RESPECT TO THE PRODUCT, AND SPECIFICALLY EXCLUDE ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY OR OTHER IMPLIED WARRANTIES.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

IN NO EVENT WILL ALESIS BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT OR OTHER DAMAGES RESULTING FROM THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING, AMONG OTHER THINGS, DAMAGE TO PROPERTY, DAMAGE BASED ON INCONVENIENCE OR ON LOSS OF USE OF THE PRODUCT, AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

THIS CONTRACT SHALL BE GOVERNED BY THE INTERNAL LAWS OF THE STATE OF CALIFORNIA WITHOUT REFERENCE TO CONFLICTS OF LAWS. This warranty gives you specific legal rights, and you may also have other rights required by law which vary from state to state.

This warranty only applies to products sold to purchasers in the United States of America or Canada. The terms of this warranty and any obligations of Alesis under this warranty shall apply only within the country of sale. Without limiting the foregoing, repairs under this warranty shall be

For more effective service and product update notices, please register your Ion online at:

<http://www.alesis.com/support/warranty.htm>

Warranty/Contact Alesis

made only by a duly authorized Alesis service representative in the country of sale. For warranty information in all other countries please refer to your local distributor.

Alesis Contact Information

Alesis Distribution, LLC
Los Angeles, USA

E-mail: support@alesis.com
Website: <http://www.alesis.com>

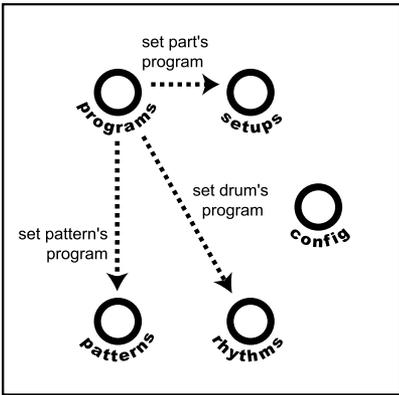
Alesis Micron Reference Manual
Revision 1.0 by Fred Morgenstern, Bret Victor, and Randy Lee.

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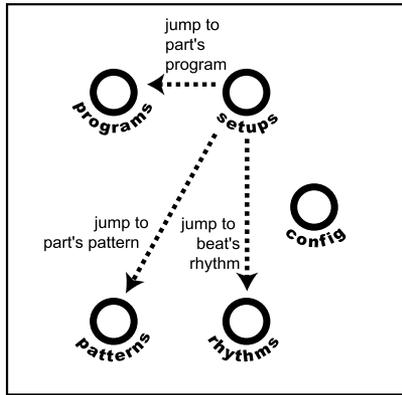
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06/14/2004

Micron Shortcuts

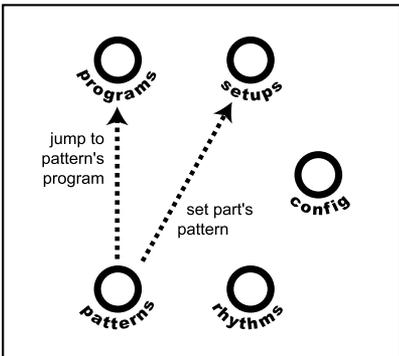
Hold **[programs]** and press...



Hold **[setups]** and press...



Hold **[patterns]** and press...



Hold **[rhythms]** and press...

