

USER GUIDE

midicake ARP

A Generator, Sequencer and Controller, for creative and generative music compositions using hardware or software instruments, samplers, and synthesizers.

4 parametric arpeggiators that synchronize with your compositions.

Being parameter driven, ARP gives you fine control of complex, rhythmic and musical sequences, taking you far beyond the capabilities of familiar arpeggiators.

Here's an overview...

Download the user manual from midicake.com

PLAY Mode

Create the performance

ARPEGGIATORS

Select or Mute each of the 4 arpeggiators

Enable Follow to play the arp sequence on the next bar after the previous arp. e.g. if arp 3 is set to follow, arps 2 and 3 will play on alternate bars

CHORDS

Chords define the notes that are made available to an arp sequence

Select a chord, the sequence will update when you next select a note

Hold to enter CHORD EDIT Mode
 - Select a preset chord using UP/DOWN
 - Create a custom chord using the NOTE buttons

NOTES

Set the root note for the sequence during Playback

Use as a midi keyboard, outputting MIDI notes on the selected arp channel (only when stopped)

MACROS

Control any assigned parameter for one or more arps

DISPLAY

Shows the current:
 - Note and Chord
 - Octave and Tempo
 - Bank and Patch

UP/DOWN

Change the global octave

The note pitch of all arp sequences will be offset by this value

KNOB control

Change the global Tempo

Disabled if an external MIDI clock sync is detected

Press to program Chord Chains

LOAD/COPY

Press LOAD and a NOTE to select the active patch

Press COPY and a NOTE to duplicate the active patch

Use UP/DOWN to change bank

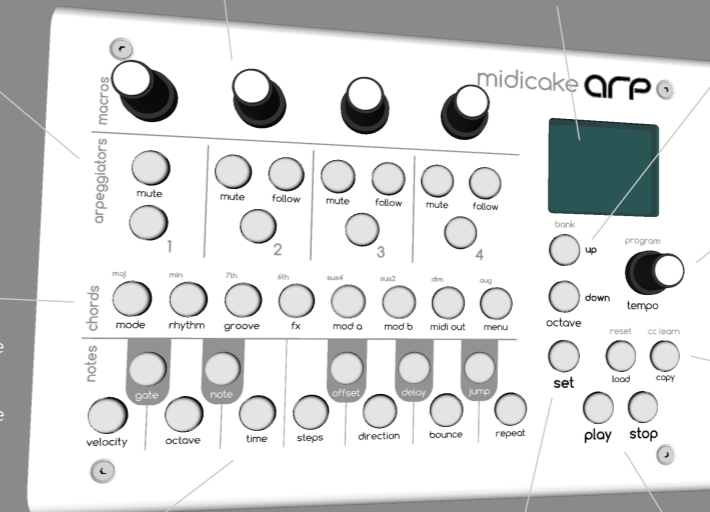
SET Mode

Press to enter SET Mode, allowing arp parameters to be edited

Press again to return to PLAY Mode

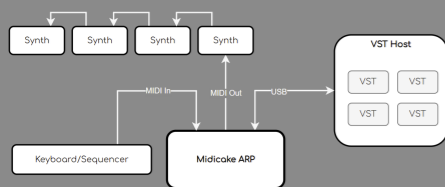
PLAY/STOP

PLAY to start the sequence
 PLAY again to pause
 STOP to... you guessed it!
 STOP again to kill all MIDI notes



Connections

Midi Input, Output and Control



MIDI Control Change

All arp and chord selections, plus every parameter, can be controlled via MIDI CC.

- Press and hold CC Learn
- Select an arp or chord button or press SET then select a parameter
- Send a midi cc message to assign to the selected parameter
- Use the UP/DOWN buttons to change between absolute and incremental control

MIDI Program Change

MIDI messages can be used to change the active bank and patch. ARP has 16 banks of 12 patches.

- Set the PC MIDI channel to match the external device, via the Menu
- Send the following MIDI messages to select bank 3, patch 9, on channel 5

Action	Status	Byte 1	Byte 2	Channel	Note
Control Change	B0	00	02	05	Byte 2 = Bank
Program Change	C0	08	00	05	Byte 1 = Patch

Intelligent Note Sync

Real-time note tracking and note detection enables ARP to follow your performance and always stay in key.

- Connect an external keyboard or sequencer to MIDI IN or USB Host
- Set the Sync Channel parameter to match the incoming MIDI Channel
- Play notes or chords and ARP will use them to build its sequences for each arpeggiator

When incoming notes are detected, ARP will display FREE PLAY.

To exit FREE PLAY press any note button while in PLAY MODE.



Update

Apply firmware updates (See Updates and Troubleshooting section)

USB

Power supply and MIDI USB port

- Connect to a VST Host
- Class Compliant MIDI over USB

USB Host

Connect external MIDI Input devices

- Supplies 5V Power
- Accepts MIDI Note input
- MIDI THRU

MIDI IN/OUT

Supports:
 - Clock, Note, CC and PC input
 - Clock, CC and Note output
 - MIDI THRU

SET Mode

Shape the sequence

ARP Select

Each arpeggiator has its own set of parameters that shape the note sequence

Press to select an arpeggiator
 Press again to select all

PARAMETERS

CHORD and NOTE buttons select the current parameter

Mode, Rhythm, Velocity, Gate, Octave etc.

Press repeatedly to cycle through multiple parameter menus

MACROS

Hold, then select one or more arps and a parameter to assign control

DISPLAY

Shows the selected parameter and value

UP/DOWN

Fine control of parameter values

KNOB control

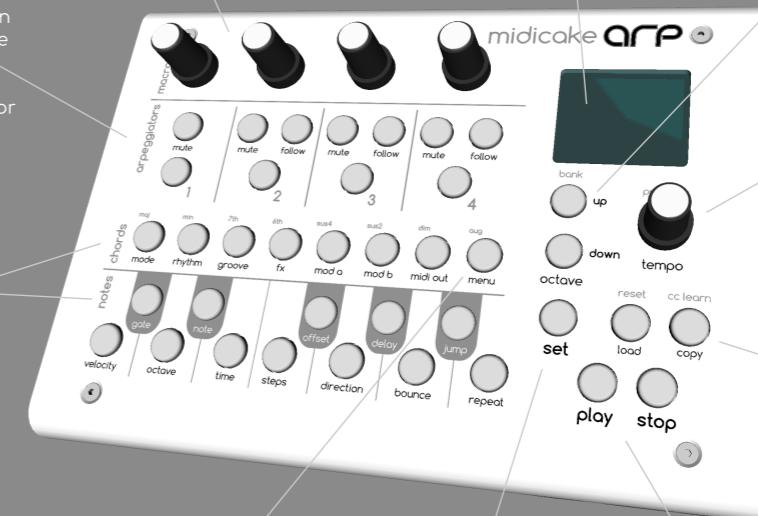
Fast control changes to parameter values

Press to modify Rhythm and Groove patterns, when selected

Press to program Chord Chains

COPY Parameters

Press COPY, then ARP Select to duplicate the current sequence



MENU

Press to access global parameters

MIDI and Voice parameters etc.

SET Mode

Press to return to PLAY Mode

PLAY/STOP

Play will continue in SET Mode

Parameter changes will apply in real time during playback

Chords and Parameters

Custom Chords

In PLAY MODE, hold any of the 8 chord buttons to show the chord notes. While holding...

- Use the Up/Down buttons or Knob control to select a chord from the list
- Press the Note buttons to create a custom chord
- Press the Reset button to revert to the default chord

Chaining Chords

In PLAY MODE, press the Program button (Knob control) to program chord to play in a chain (chord progression).

- The 8 chord buttons are colour coded
- Select a chord, then press a note button to add a link to the chain
- Each link in the chain represents a chord playing for 1 bar
- Add up to 32 links in the chain
- Rotate the Knob Control to select any link in the chain
- Press Reset to delete a link
- Press Program to exit

During playback the chord chain will automatically set the chord and note for each bar. It will repeatedly loop the chain until a note button is pressed or an external sync note is detected.

Parameters

In SET MODE, the note and chord buttons represent different parameters. Each parameter impacts the sequence of an arpeggiator in a different way.

- Press buttons repeatedly to cycle through multiple parameter options
- A detailed description of each can be found in the online User Manual
- See the Tips section for hints on how to use the parameters

- The Mode parameter controls how the sequence is played, as an arpeggio, a chord or a pad

- Midi Out sets the output MIDI channel allowing ARP to play up to 4 separate Hardware synths and/or VSTs over USB.

Workflow Ideas

- Connect Midicake ARP to a single hardware or software synth via MIDI Out or USB and create a simple sequence on arp 1

- Explore the Chord and Note buttons to create interesting chord progressions

- Copy your settings to a different patch and tweak the settings slightly, then load each patch in turn during playback to get interesting variations

- Copy the arp 1 settings to arp 2, then tweak the settings to get the two arp sequences playing together nicely. Do the same for arp 3 and arp 4

- Create a long-running sequence by setting each arp to follow the previous

- Increase the complexity of the sequence by modulating one or two settings across the 4 arps

- Program the Macro Controls to modify any setting you desire to create unique performances

- Change the Midi Out Channel setting of each arp to control a different sound generator or hardware synth

- Connect 4 Hardware synths and 4 Software VSTs and control them all

- Connect a midi keyboard via USB or MIDI IN. Set the Sync Channel parameter to match the keyboard. Then play the keyboard and the sequence will track the incoming notes

- Connect a sound generator via MIDI Out or USB to the same midi channel as the keyboard, then you can play sounds with the keyboard and ARP will continue to track

- Hold the Chord button to experiment with Scales and Custom Chords

- Set the MIDI CONTROL parameter to OUT and connect to external sequencers, DAWs, drum machines, etc. to control their playback and tempo

Editing Patterns

Rhythm and Groove Patterns control the volume and timing of individual steps in an arp sequence.

- Press the Program button (Knob Control) to edit individual patterns
- Rotate the Knob control to select any of the 16 steps in the pattern
- Use Up/Down to set the value of the selected step
- In Rhythm patterns, press Up to tie the step to the previous
- Press Reset to clear the pattern
- There are 16 patterns per Bank

Modulation & FX

The 2 modulation parameters per arpeggiator enable you to modulate any parameter during playback.

- Press the Mod button repeatedly to cycle through the 4 modulation settings: - Amount, Target, Shape and Rate

Similar to Modulation, FX applies a variance to parameters to overlay interesting patterns onto your sequences.

Assignable Macros

The 4 Macro Knobs can be assigned to any parameter for one or more arps.

- Press and hold the Macro Knob
- Press the Arp Select buttons to select one or more arps to control
- Use the Note/Chord buttons to select the parameter you wish to control
- Release the Macro Knob

Global Settings Menu

Global Settings are not specific to an individual arp.

- Press the Set button to enter SET MODE
- Then press the Menu button

MIDI CONTROL - IN sets ARP as a MIDI slave, OUT as MASTER MIDI controller
MIDI THRU - If enabled, ARP will pass through all incoming MIDI data
SYNC CHANNEL - sync to incoming MIDI notes on this channel (FREE PLAY)
SYNC DELAY - Sets the sample frequency for FREE PLAY MIDI notes
PC CHANNEL - Obey MIDI Program Change messages on this channel
LEDS - Control the brightness of the LED buttons

Tips

ARP is designed to be used in a variety of ways. Here are some tips to help you get the most out of it.

- Set the MIDI CONTROL parameter to IN to control ARP with external sequencers and DAWs

Tips

- Start with something simple and gradually increase the complexity

- To begin with, set the sequence to a small number of Steps

- Sometimes settings won't seem to have an effect because of another setting, e.g. bounce and jump won't do anything if Steps is set to 1

- If it is unclear what's happening in your sequence try setting the Chord to the Chromatic Scale.

- Check you are in Set Mode before tweaking settings, it's easy to change the chord or note during a performance. Buttons will be blue in Set Mode.

- Octave, Note, Steps, Step Offset, and Delay settings can all be used to create rounds or out-of-phase sequences over two or more arps

- Use Repeat to build simple bass lines

- Try assigning parameters to the Macro Controls and use those to experiment and explore parameter combinations

- Rhythm Patterns may not work on Hardware synths that are not velocity sensitive

- Beware of polyphony when working with mono synths, the results can be interesting

- Modulations operate from the current parameter value, so if it's not doing what you want, try adjusting the main parameter to see what happens

- Beware modulating Time Division and Delay settings, modulation is only updated on each note played and if the time between notes is pushed to 2 or more bars, it'll seem like the sequence has stopped. Just wait, or set the modulation back to Off and things will get back to normal.

Patches

Changes to the 4 arp sequence parameters are saved automatically in the currently loaded patch. ARP has 16 Banks of 12 Patches. The 12 patches are selected using the corresponding 12 Note buttons.

Change Patch

- Press the Load button
- Use the Up/Down buttons to change the Bank
- Press one of the 12 Note buttons to load the Patch

Copy Patch

- Press the Copy button
- Use the Up/Down buttons to change the Bank
- Then press the Note button for the patch you wish to copy to

During playback, Patch changes will be applied on the bar

Example/Default Patches

ARP is pre-loaded with 12 default patches on each bank. These examples show how parameters can affect the sequence. Here's a quick guide...

- Use a polyphonic synth on MIDI channel 1 or set each arp to a different MIDI OUT channel
- Try setting all arps to 'follow' to hear each arp sequence in turn (see fig 1)
- Switch chords and patches during playback to turn the sequence into a composition



Patch 1 (C) - Basic Quartet

- Set all arps to play simultaneously, the 4 sequences should compliment

Patch 2 (C#) - Direction and Bounce

- Each sequence differs only by the direction and bounce parameters
- Direction and Bounce both define how individual notes are selected from the available notes in the chord or scale

Patch 3 (D#) - Repeat and Jump

- Each arp has different repeat or jump settings
- Jump defines the number of notes in the scale that will be skipped between steps

Updates and Troubleshooting

Firmware Updates

Midicake ARP is designed to support updates for new features and fixes.

- Download the latest firmware package from midicake.com and unzip it

- Download the teensy loader from pjrc.com/teensy/loader.html

- Open the Teensy Loader
- Select File > Open HEX File

- Select the `midicake.ARP.Firmware.ino.hex` file (downloaded in step 1)

- Click Open

- Make sure the green "Auto" button is selected

- Press the UPDATE button on the back of the unit

ARP will restart with the new firmware

Note: The firmware version number is displayed on the logo screen at startup and can be shown by holding down the stop button

Factory Reset

To reset the unit to its factory settings:

- Press Stop
- Hold the Load/Reset button for 2 seconds
- Press the Copy button to confirm

Alternatively:

- Unplug the USB cable
- Reconnect the USB while holding down the Load/Reset button

WARNING - All user settings, patches, patterns, and chords will be lost!

Patch 4 (D) - Time Divisions

- All 4 arps are playing the same sequence but at a different number of beats per bar

Patch 5 (E) - Triplets & PolyRhythms

- Arps 1 & 2 have a time division of 1 and 4 beats per bar
- Arps 3 & 4 have a division of 3 and 12 beats per bar creating an interesting polyrhythm
- To access triplet timings, increase the Time parameter past 32/1

Patch 6 (F) - Step Offsets

- Arps 2 & 4 are offset from 1 & 3 by two steps. Set 2 and 4 to follow

Patch 7 (F#) - Note Offsets

- Arps 2 & 4 are offset from 1 & 3 by a number of notes, creating harmonies of the same sequence
- The Note parameter has a second option to switch the offset mode between scale and chromatic, press the button twice to access

Patch 8 (G) - Note Delay

- Arps 2 & 4 have a Delay value that pushes the notes off the main beat

Patch 9 (G#) - Mode - Chords and Pads

- Arps 1 & 2, in Chord Mode, will play all sequence notes simultaneously on each beat
- Arps 3 & 4, in Pad Mode, will play only when the Note/Chord is updated

Patch 10 (A) - Rhythm and Groove Patterns

- Arps 1 & 2 have a Rhythm Pattern, affecting note velocity
- Arps 3 & 4 have a Groove Pattern, affecting note timing

Patch 11 (A#) - Modulation

- Arp 1 modulates the Octave parameter. Arp 2 modulates Note Delay
- Arps 3 & 4 have an alternating velocity sweep

Patch 12 (B) - Modulation steps and timing

- Arps 1 & 2 have an alternating modulation on Time Division, causing the number of notes in the bar to change
- Arp 3 has a modulation on the number of steps
- Arp 4 has timing delay increasing over 4 bars

Troubleshooting

Only One Note Heard

On Play, you only hear the first note played but ARP looks like it's still playing.

- Is your instrument monophonic?
- Try setting Voice Mode to "Mono" via the MIDI OUT parameter
- Try reducing the gate value to 1

Notes keep playing after pressing Stop

This can occur (rarely) when multiple notes of the same pitch are sent to some instruments.

- Setting arp to Mono Voice Mode may help
- Pressing Stop twice should stop all notes. If all else fails, restart ARP and/or the instrument that's in a twist

Still having issues?

If all else fails, try restarting.

- Unplug and reconnect the USB cable
- Or press the update button next to the USB port