

# NiftyKEYZ

## User Manual

Updated May 16th 2023



# Introduction

Thank you for purchasing NiftyKEYZ! We hope you love it as much as we do.

Reading this user manual, you will discover a quick start walkthrough followed by an in-depth look at what NiftyKEYZ has to offer.

We highly recommend that you also check our video tutorial!

[www.cre8audio.com](http://www.cre8audio.com)

Have fun!

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# Quick Start Guide

We'll start with the most basic setup: play a single voice a.k.a VCO module with our keyboard. Next we'll use the aftertouch, mod wheel & LFO to add some movement to our sound.

Finally we'll activate the arpeggiator and explore some of the arpeggiator modes.

We'll be using our beloved Capt'n BIG-O VCO module for this guide and will refer to it as VCO from here onwards but any VCO module that complies to the 1 volt per octave tuning standard will work just fine...

Carefully Install your VCO Module. **Always make sure NiftyKEYZ is powered off before adding or removing modules!**

Patch a mono 6.35mm Jack from the NiftyKEYZ **out1** output to the input jack of your audio interface or mixer or connect a pair of headphones to the phones output jack at the far right of NiftyKEYZ.

**Warning: Modular can get very loud! We recommend that you always lower both volume knobs before connecting NiftyKEYZ to a recording device or headphones.**

Patch a cable from the NiftyKEYZ **cv1** output to the **tune** input of the VCO. Patch another cable from the VCO square output to the **to out1** input of NiftyKEYZ. Set the width knob of the VCO to noon.

*Tip: if your cables are too short to reach from one end of NiftyKEYZ to the other, you can use the multiples to bridge between 2 cables.*

We'll now check that keyboard splitting is deactivated so that we can play our single VCO with all the keys of our keyboard:

Press function to enter function mode, then press the **split function key** to make the function button blinks **twice** for **OFF**. If it blinked once (turning it on), press the same key again to toggle it back OFF.

Now press the **1voice function key** to put NiftyKEYZ in 1 voice mode.

The function button will blink twice to confirm and NiftyKEYZ will exit function mode.

Now you can play any of the keys and raise the main volume knob (or the phones volume knob if using headphones) until you can hear a beautiful square!

Ok, let's make our square a bit more interesting by modulating the square width with aftertouch!

Patch a cable from the **at (aftertouch)** output jack of NiftyKEYZ to the **width** input jack of the VCO

Now when you apply pressure to the keyboard you should hear the square wave get thinner. Adjust the VCO width knob clockwise to increase the effect.

Let's now change the sound of our square with the **mod wheel**.

Disconnect the cable from the **at** output and plug it into the **mod** output of NiftyKEYZ.

Notice how we can now modulate the square width by moving the **mod wheel** up and down.

Next we'll activate the LFO. Press **function** to enter function mode.

Now press the **lfo** function key to activate the LFO.

The function button LED will blink twice to confirm and NiftyKEYZ will exit function mode.

You should now hear the square wave modulating on its own. Move the mod wheel upwards to increase the depth of the LFO and turn the NiftyKEYZ **rate swing** knob clockwise to increase the rate of the LFO.

By default the LFO waveform is a triangle, let's change it to square.

Press function key to enter function mode.

Now press the second G key with the square icon printed above it to change the LFO waveform to a square. The function button LED will blink twice to confirm and NiftyKEYZ will exit function mode. Try other waveforms!

Let's add the arpeggiator to our voice. The arp can be enabled on any of the 4 voices. Here we are using voice1 (cv1) so we want to enable the arp on voice1.

Press **function** to enter function mode.

Press the first D key labelled 1 to enable the ARP on voice1.

The function button will blink once for ARP ON and twice for ARP OFF. In our case it should blink once.

Now press the **function** button to exit function mode.

Press the **arp** button to activate the arp (the button should now be lit).

Hold several keys on the keyboard and behold the arpeggiator!

Tweak the **rate** and **range** knobs to taste...

By default the arpeggiator mode is set to up, let's change it to random!

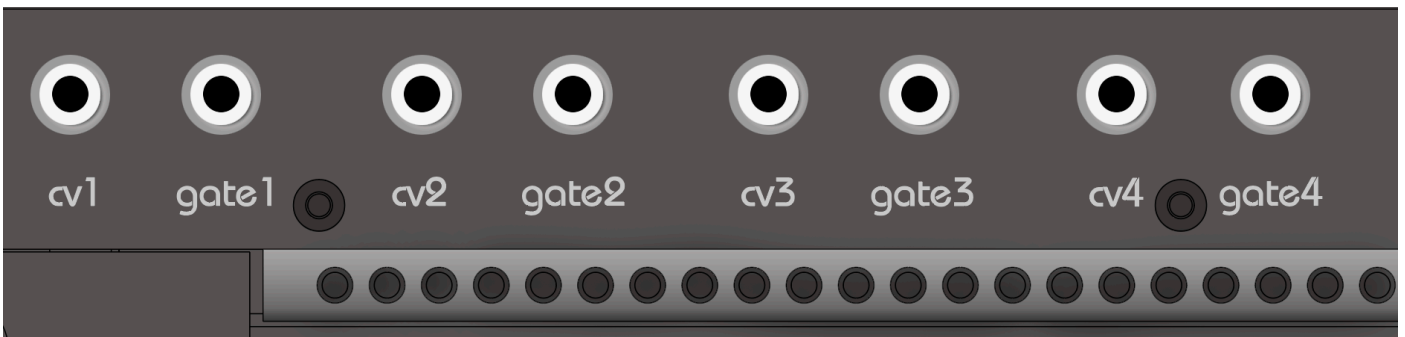
Press **function** to enter function mode. Now press the G# key labelled random. The function button LED will blink twice to confirm and NiftyKEYZ will exit function mode.

NiftyKEYZ will now improvise using the notes you hold down on the keyboard... Nifty!

# Anatomy of a NiftyKEYZ

## Top Jacks - CVs/GATEs

### Cv1 to Cv4



The CV outputs are used to control the frequency of VCO (voltage controlled oscillators) modules. They output a voltage that changes as you press keys on the keyboard or send MIDI notes to the device according to the 1V/octave standard commonly used in the euro rack world. The CV outputs range from 0 to +10V allowing a total span of 10 octaves.

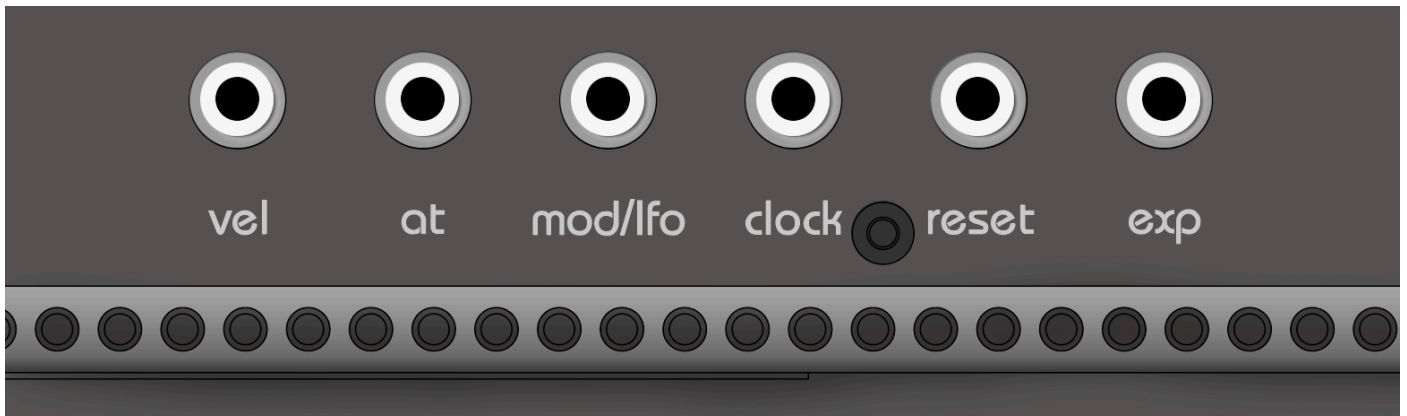
### Gate1 to Gate4

The gate outputs are triggered on each note and are useful for opening or closing envelopes.

NiftyKEYZ has a flexible voicing system and can control up to 4 voices. Please refer to the voicing chapter for in-depth specification of the available voicing modes.



# Top Jacks - Modulation & Clock



## **Vel (velocity)**

This jack outputs a voltage corresponding to the velocity of the latest keyboard key press or the latest received MIDI note. There are two voltage ranges available: 0V to +5V or 0V to +10V. Please refer to the functions chapter to learn how to change this setting.

## **At (aftertouch)**

This jack outputs a voltage corresponding to the pressure exerted on the keyboard. It will also respond to MIDI aftertouch/pressure control change messages. There are two voltage ranges available: 0V to +5V or 0V to +10V. Please refer to the functions chapter to learn how to change this setting. The output voltage can be smoothed. Turn the glide knob in function mode to adjust the smoothing. Turning the glide knob clockwise increases the smoothing (slower rise or fall times).

## **Mod (modulation) / LFO (low frequency oscillator)**

This jack outputs a voltage related to the position of the modulation wheel (item 7 of the control panel illustrated here).

The mod wheel has 2 modes of operation: manual and LFO (low frequency oscillator). In manual mode the jack outputs a constant voltage relative to the position of the mod wheel. It also responds to MIDI modulation control

change messages. In LFO mode the jack outputs a waveform of variable wave shape and frequency. Please refer to the functions section to learn how to change the wave shape and speed. In this mode the mod wheel sets the amplitude of the LFO waveform. There are two voltage ranges available: 0V to +5V or 0V to +10V. Please refer to the functions chapter to learn how to change this setting.

## **Clock**

When NiftyKEYZ is in master clock mode the **clock** jack outputs a +5V pulse in sync with the arpeggiator (on every step). In this mode the rate of the pulse can be changed by turning the arp rate knob (item 2 illustrated here).

When NiftyKEYZ is in MIDI clock slave mode the jack will output +5V pulses in sync with the incoming MIDI clock at 3 available rates. Please refer to the functions chapter to learn how to change the rate.

## **Reset**

NiftyKEYZ has 2 reset modes: Clock and Key.

In Clock mode this jack transmits a +5V pulse when MIDI clock stop message is received, useful to synchronise sequencers. In key mode this jack transmits a +5V pulse when the first key of the keyboard is depressed after all keys have been released. This is useful if you wish to trigger an envelope on the first of a series of legato notes. Please refer to the functions section to learn how to change modes.

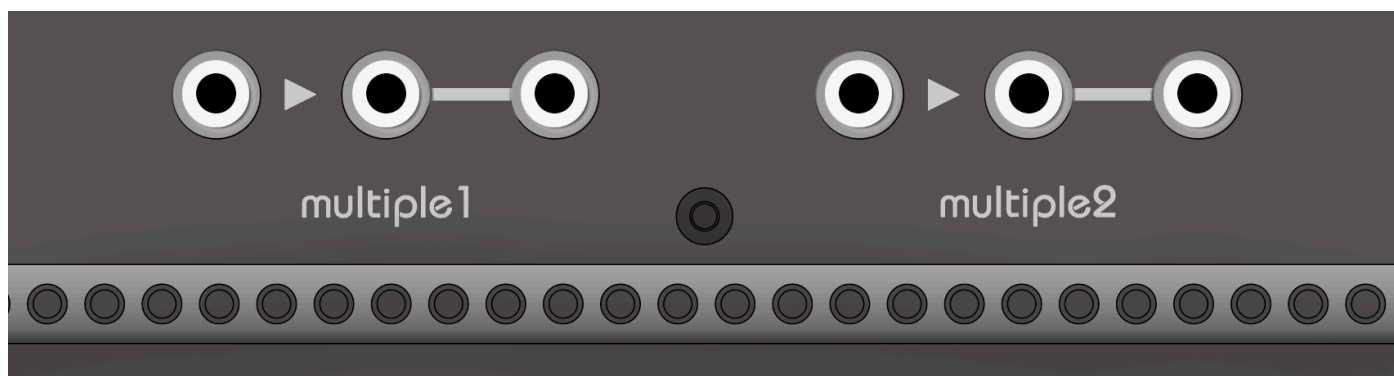
## **Exp (expression)**

This jack outputs a voltage corresponding to the position of an expression pedal connected to the expression jack at back of NiftyKEYZ

There are two voltage ranges available: 0V to +5V or 0V to +10V.

Please refer to the functions chapter to learn how to change this setting.

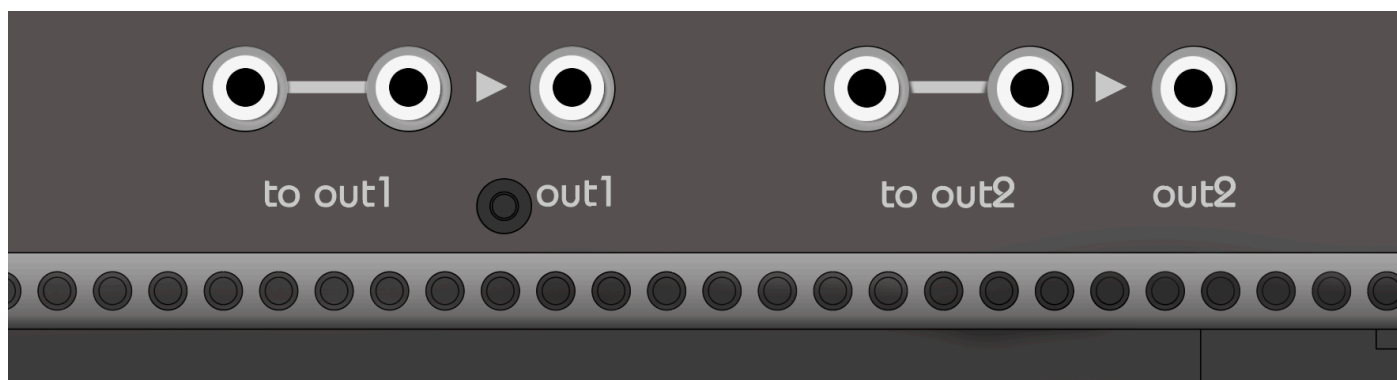
## Top Jacks - Multiples



NiftyKEZ has 2 Multiples named multiple1 and multiple2. Both have identical functionality. Multiples take an input signal (jack1) and replicate the same signal at the 2 outputs (jacks 2 and 3). A multiple is useful for sending the same signal to several modules.

## Top Jacks & knobs: Summing & out

The **to out1** jacks are used to send 1 or 2 signals out of NiftyKEYZ via the ¼" **main out1** jack on the back of NiftyKEYZ after being attenuated by the **main volume knob** (1).



The **to out1** jacks can also be used as a summing circuit, since the **out1** 1/8" jack outputs the sum of the 2 signals patched to the **to out1** jacks.

The **to out1** and **to out2** have identical functionality. Signals patched into the to out1

The out1 and out2 signals are also present at the headphones output jack on the back of NiftyKEYZ after being attenuated by the **phones volume knob** (2).

Out1 is sent to the left side of the headphones and out2 is sent to the right side.

# Control panel

1 - Arp Enable Button: turns arp on/off

2 - Arp Rate/Swing knob: sets the rate of the arp. Doubles as swing knob when function is lit

3 - arp range knob: sets the arp range in octaves (number of repeats with an octave added to each repeat). The range is 1 to 4 octaves.

4 - pitch bend range switch: switches between +/- 2 semitones and +/- 1 octave.

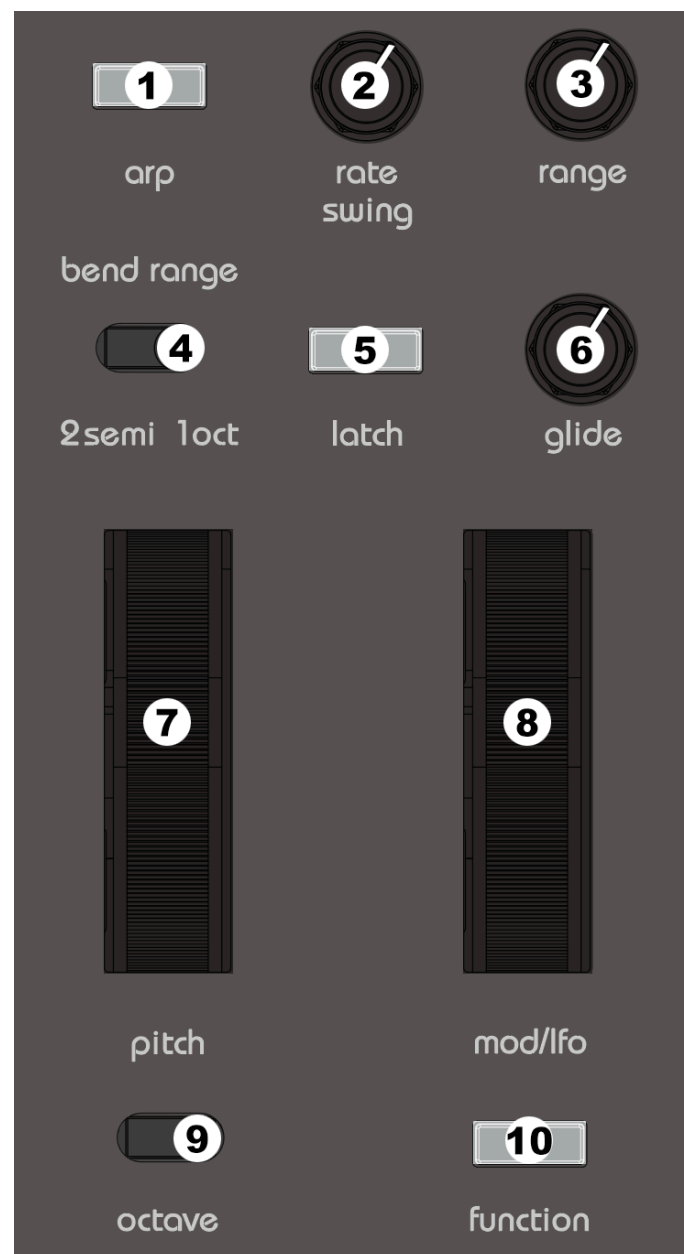
5 - Latch button, when lit, holds the gates open allowing to play the arp handsfree and sustain envelopes endlessly.

6 - Glide knob: adds glide/smoothing to the CV output. It has 2 possible behaviours: Legato and Constant glide (see functions below to change).

7 - Pitch Bend Wheel: used to bend the pitch of the CV outputs. Also transmits MIDI pitch bend messages.

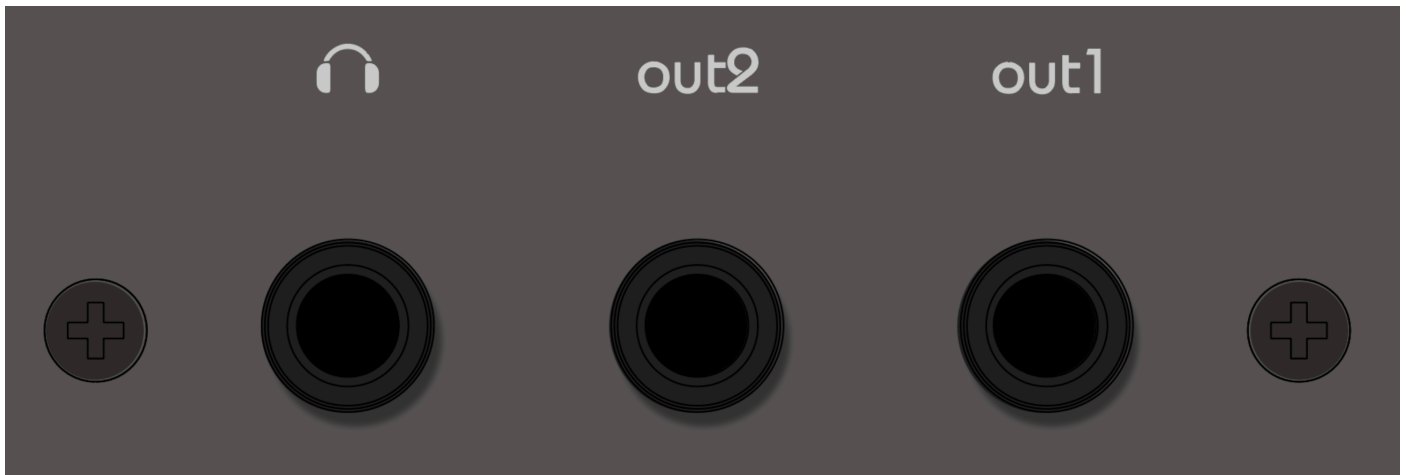
8 - Modulation Wheel: controls the mod output or LFO depth. Also transmits MIDI modulation control change messages (CC#1)

9 - Octave 3 position switch: shifts the octave output by -1 , 0 or +1 octave



# Rear Connections - Audio Outs

The out1 jack is a mono unbalanced TS (tip sleeve) jack. It outputs the signals patched into the **to out1** jacks on the top of NiftyKEYZ.



The out2 jack is also a mono unbalanced TS (tip sleeve) jack. It outputs the signals patched into the **to out2** jacks on the top of NiftyKEYZ.

Both **out1** and **out2** volumes are controlled by the main volume control knob on top of NiftyKEYZ [illustrated here](#).

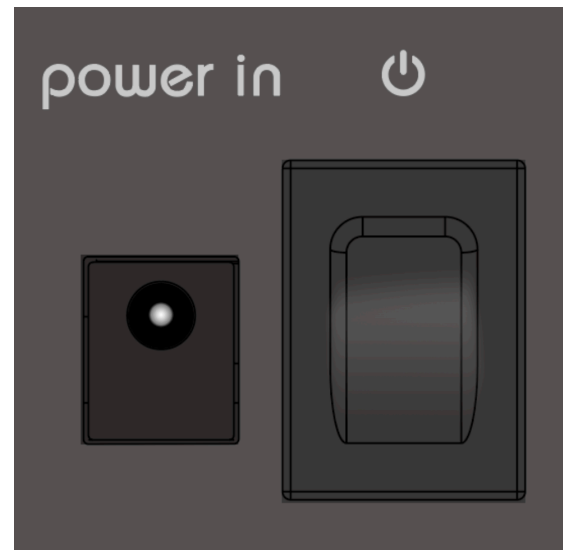
The headphones 1/4" jack is a outputs both **out1** and **out2** signals in stereo. The **out1** signal is present on the left side of the headphones and the **out2** signal is present on the right.

The headphones volume is controlled by the phones knob on top of NiftyKEYZ [illustrated here](#).

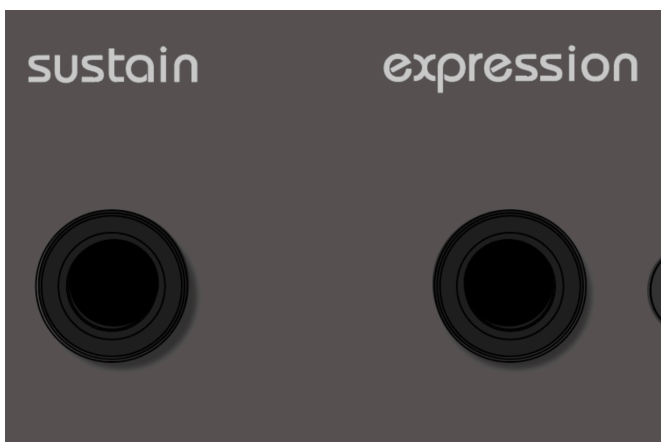
## Rear Connections - Power

Here is the DC power inlet and the switch to power NiftyKEYZ.

Please only use the included power supply to avoid damage to your unit.



## Rear Connections - Sustain & Expression



Connect a sustain pedal to the sustain input jack to trigger the latch function by foot.

Connect an expression pedal to the expression jack to control the output voltage of the expression jack at the top of NiftyKEYZ illustrated [here](#)

# Rear Connections - MIDI & USB



## MIDI input

There are 2 ways to control NiftyKEYZ via MIDI:

- You can control NiftyKEYZ from a hardware MIDI controller or sequencer via the DIN5 midi in port
- You can also control NiftyKEYZ with your computer running MIDI capable software (DAW) via MIDI over USB. NiftyKEYZ is a plug and play class compliant device and does not require drivers.

NiftyKEYZ not only responds to MIDI note messages but also MIDI clock messages allowing you to synchronise its **clock** output jack and arpeggiator to other MIDI devices. NiftyKEYZ can be configured to respond to the MIDI channels of your choice, Please refer to the functions chapter to learn how to activate the clock and change MIDI channels.

## MIDI output

NiftyKEYZ can be used as a powerful MIDI keyboard controller and sequencer to play other MIDI capable instruments. NiftyKEYZ will send MIDI out of the midi out/thru port allowing you to control external MIDI instruments.

NiftyKEYZ also transmits MIDI over USB so you can play virtual instruments in your DAW. NiftyKEYZ can transmit on different channels. Please refer to the functions chapter to learn how to change the output channel



# Functions Mode

When NiftyKEYZ is in function mode every key of the keyboard becomes a function key. Function keys are used to change various settings as detailed below.

Press the function button to enter or exit function mode.

When function mode is enabled the function button LED is lit solid.

## Setting a function

Most function keys will set a function then automatically exit function mode. In this case the function button LED will blink twice before exiting function mode.

## Toggling a function

Some functions are toggled ON or OFF by pressing the same function key multiple times. In this case the function button LED will blink **once** for **ON** and **twice** for **OFF**.

Please refer to the included printout of the function keys. You can also download it from our website should you need to print a new one.

## Number Keys

Number keys have numbers 0 to 16 printed above them and are used for functions that require a number (like setting MIDI channel numbers).

# Function Keys Explained

In this chapter the function keys are explained.

## **C1 Local On/OFF**

Press the local ON/OFF key to toggle local mode ON or OFF.

Local On is the normal operation of NiftyKEYZ.

In this mode you can use the keyboard and control panel to operate the CV/GATE and modulation outputs of NiftyKEYZ.

When Local is set to off. MIDI is used to control the NiftyKEYZ hardware.

In this mode the NiftyKEYZ keyboard and control panel have no effect on NiftyKEYZ. But they can be used to transmit MIDI to other MIDI capable devices.

## **C#1 Arp mode Up**

Sets the arpeggiator mode to UP.

## **D1 CV/Gate1 - ARP On/Off**

activates/deactivates the arp for CV/GATE1. This function toggles ON or OFF. The function button LED will blink once for ON and twice for OFF

## **D#1 Arp mode Down**

Sets the arpeggiator mode to DOWN.

## **E1 CV/Gate2 - ARP On/Off**

activates/deactivates the arp for CV/GATE2. This function toggles ON or OFF. The function button LED will blink once for ON and twice for OFF

### **F1 CV/Gate3 - ARP On/Off**

activates/deactivates the arp for CV/GATE3. This function function toggles ON or OFF. The function button LED will blink once for ON and twice for OFF

### **F#1 Arp mode Up/Down**

Sets the arpeggiator mode to UP/Down.

### **G1 CV/Gate4 - ARP On/Off**

activates/deactivates the arp for CV/GATE4. This function function toggles ON or OFF. The function button LED will blink once for ON and twice for OFF

### **G#1 Arp mode Random**

Plays the held notes at random

### **A1 Glide is Glide**

In this mode all notes glide. Turn the **glide knob** clockwise to increase the glide time.

### **B1 Glide is Legato**

In this mode the first played note doesn't glide, only the 2nd and subsequent notes glide. Turn the **glide knob** clockwise to increase the glide time.

### **C2 Split Zone 1**

Sets the split zone to C2. When splitting is enabled all keys below C2 are in zone1. C2 key and above are in zone2

### **C2# Mod Wheel is Manual**

In this mode the **mod** output jack sends a constant voltage manually adjusted by the mod wheel.

## **D2 LFO shape = Triangle**

Sets the LFO waveform to a triangle.

## **D2# Mod Wheel is LFO**

In this mode the **mod** output jack sends a low frequency oscillator LFO voltage. In the mode the mod wheel sets the voltage range a.k.a LFO depth.

## **E2 LFO shape = Ramp**

Sets the LFO waveform to a ramp.

## **F2 LFO shape = Saw**

Sets the LFO waveform to a sawtooth (inverted ramp).

## **F#2 Clock Division 16**

Sets the clock output pulse rate to a 16th of a bar.

## **G2 LFO shape = Square**

Sets the LFO waveform to a square.

## **G#2 Clock Division 8**

Sets the clock output pulse rate to an 8th of a bar.

## **A2 LFO shape = Random**

Sets the LFO waveform to random.

## **A#2 Clock Division 6**

Sets the clock output pulse rate to an 6th of a bar.

## **B2 Set the MIDI input channel for CV/Gate1**

Press this function key followed by a number key to set the MIDI input channel that controls CV/Gate1.

## **C3 Split Zone 2**

Sets the split zone to C3. When splitting is enabled all keys below C3 are in zone1. C3 key and above are in zone2.

## **C#3 Voicing Mode = 1 voice**

Sets the voicing mode to 1 voice. See voicing modes for details

## **D3 Set the MIDI input channel for CV/Gate2**

Press this function key followed by a number key to set the MIDI input channel that controls CV/Gate2.

## **D#3 Voicing Mode = 2 voices**

Sets the voicing mode to 2 voices. See voicing modes for details

## **E3 Set the MIDI input channel for CV/Gate3**

Press this function key followed by a number key to set the MIDI input channel that controls CV/Gate3.

## **F3 Set the MIDI input channel for CV/Gate4**

Press this function key followed by a number key to set the MIDI input channel that controls CV/Gate4.

## **F#3 Voicing Mode = 3 voices**

Sets the voicing mode to 3 voices. See voicing modes for details.

### **G3 Set the MIDI input & output channel for Zone1**

Press this function key followed by a number key to set the MIDI input channel that controls keyboard Zone1. When splitting is active NiftyKEYZ will also transmit MIDI on this channel when keys are played within Zone1.

### **G#3 Voicing Mode = 4 voices**

Sets the voicing mode to 4 voices. See voicing modes for details.

### **A3 Set the MIDI input & output channel for Zone2**

Press this function key followed by a number key to set the MIDI input channel that controls keyboard Zone2. When splitting is active NiftyKEYZ will also transmit MIDI on this channel when keys are played within Zone2.

### **A#3 Voice Splitting On/Off**

Toggles the voice splitting On or Off. See voicing modes for details.

### **B3 Set the MIDI output channel (when splitting is inactive)**

Press this function key followed by a number key to set the MIDI output channel. MIDI notes will be transmitted on this channel when you play the NiftyKEYZ keyboard and splitting is inactive. If splitting is active, NiftyKEYZ will transmit on the Zone1 and Zone2 channels respectively.

### **C4 Split Zone 3**

Sets the split zone to C4. When splitting is enabled all keys below C4 are in zone1. C4 key and above are in zone2.

### **C#4 Transpose Down**

Press this key to transpose the NiftyKEYZ down by 1 semitone. This will transpose both the outgoing MIDI notes and CV/GATE voltage.

Hold the **shift** key at the same time to transpose down by 1 octave.

## **D4 Reset = Key**

The **Reset** output jack has two modes: Key and Clock. This sets the mode to Key. In this mode the reset output jack will send a pulse every time the first of a series of keys is pressed down. This allows you to start a sequencer or envelope in sync with the beginning of a legato melody.

## **D#4 Transpose Up**

Press this key to transpose the NiftyKEYZ up by 1 semitone. This will transpose both the outgoing MIDI notes and CV/GATE voltage.

Hold the **shift** key at the same time to transpose up by 1 octave.

Press C#4 and D#4 (transpose Up) simultaneously to reset the transposition to zero.

Press C#4 (transpose down) and D#4 (transpose Up) simultaneously to reset the transposition to zero.

## **E4 Reset = Clock**

The **Reset** output jack has two modes: Key and Clock. This sets the mode to Clock. In this mode the reset output jack will send a pulse every time NiftyKEYZ receives a MIDI clock start message enabling you to synchronise a sequencer module with the MIDI clock master for example.

## **E4 + SHIFT MIDI Clock On (External Clock) or OFF (Internal Clock)**

This function toggles between External Clock and Internal Clock.

When Internal clock is selected (function button LED blinks twice) NiftyKEYZ generates its own clock. This is the factory default mode.

In this case the arpeggiator advances automatically. The master clock rate is adjusted with the arp rate knob. The clock can be stopped and started by holding **function** and pressing **arp** at the same time. NiftyKEYZ also transmits

MIDI clock in this mode, allowing the device to be used as a MIDI clock master.

When External clock is selected (function button LED blinks once) NiftyKEYZ waits for MIDI clock before advancing the Arpeggiator or pulsing the clock output jack.

#### **F4 Gate Re-triggering On/Off**

This function toggles gate retriggering **On** or **Off**. When **On** the gates will pulse on every depressed key (useful for staccato). When **Off** the gate will go high on the first depressed key of a series and only go low after the last key is released (useful for legato).

#### **F#4 AutoChord On**

This function activates the AutoChord feature. Learn more about AutoChord below.

#### **G4 Expression / Velocity / Aftertouch / Mod Wheel voltage range is 0-5V**

This function sets the voltage range of the Expression, Velocity, Aftertouch and Mod Wheel output jacks to 0V to 5V DC.

#### **G#4 AutoChord Off**

This function deactivates the AutoChord feature. Learn more about AutoChord below.

#### **A4 Expression / Velocity / Aftertouch / Mod Wheel voltage range is 0-10V**

This function sets the voltage range of the Expression, Velocity, Aftertouch and Mod Wheel output jacks to 0V to 10V DC.



## **A#4 AutoChord Learn**

This function puts the AutoChord in learn mode. Learn more about AutoChord below.

## **B4 Panic!**

Press this function to close all the gates and transmit "All notes off" MIDI control change message to all MIDI channels. Useful in the event of "hanging notes".

## **B4 + Shift Factory Reset**

Press this function to reset all NiftyKEYZ parameters to factory default.

## **C5 Shift Key**

Use this key in combination with other function keys to access their secondary function where available.

# Arpeggiator

NiftyKEYZ has a fun and powerful arpeggiator that doubles as a sequencer. You can enable the arp on any of the 4 voices using the function keys. It can also be globally enabled with the arp button. You can start and stop the arp's internal clock by pressing **function + arp**

## Arpeggiator rate and swing

Adjust the rate knob to set the speed of the ARP. When in function mode, the rate knob becomes swing to add shuffle to your ARPs!

## Enabling the Arpeggiator per voice

When in function mode, press the white keys labelled 1-4 to toggle the arp on or off for the respective voices. The function button LED will blink to confirm your selection: 1 blink = ARP Enabled on the selected voice.  
2 blinks = ARP Disabled on the selected voice.

## Arpeggiator Modes

When in function mode, use the first 4 black keys to set the arpeggiator mode to up, Down, up/down or random. Selecting either of the above will automatically exit function mode.

## Sequencer Mode

When set to sequencer mode the arp can play back a customisable sequence of up to 32 notes. There are 2 steps to activating sequencer mode:

-First enter function mode and select sequencer mode by pressing the 5th black key.

-Now "feed" the sequencer by playing a sequence of notes.

When done press the function button to confirm and exit function mode.

# Voicing Modes

NiftyKEYZ has 4 main voicing modes some of which can be split into several zones. Below is a detailed description of the 4 voicing modes and their split modes.

The keyboard can be split into 2 zones. The split zone can be any of the C keys. Press function followed by C2 C3 or C4 to set the split zone respectively. When split is on all keys below the split zone are zone1 and all keys equal or above the split zone are zone2.

Press function followed by the split function key to toggle split on or off.

## 1 Voice

### 1 voice splitting off

In this mode when **split** is **off** all keys control the 4 cv/gates in unison.

This mode is handy for playing a big monophonic lead.

It is also the recommend mode for tuning 4 oscillators together since the same voltage is present at all CV outputs.

### 1 voice splitting on

In this mode when **split** is **on** all keys in zone 1 control CV1/Gate1 and CV2/Gate2 in unison and all the Keyz in zone 2 control CV3/Gate3 and CV4/Gate4 in unison. Handy for playing a fat bass and fat lead at the same time.

*Note: When several keys are controlling the same CV last note priority is used.*

## 2 Voice

In this mode NiftyKEYZ is duo-phonic meaning that you can play up to 2 notes at the same time.

### 2 voice splitting off

When **split** is **off** the first key controls CV1/Gate1 and CV3/Gate3 in unison. The second and subsequent keys control CV2/Gate2 and CV4/Gate4 in unison.

### 2 voice splitting on

When **split** is **on** the first key in zone1 controls CV1/Gate1 and the second and subsequent keys in zone1 control CV2/Gate2. The first key in zone2 controls CV3/Gate3 and the second and subsequent keys in zone2 control CV4/Gate4.

## 3 Voice

In this mode you can play up to 3 notes at the same time.

### 3 Voice splitting off

When **split** is **off** the first key controls CV1/Gate1 and CV4/Gate4 in unison. The second key controls CV2/Gate2. The third key controls CV3/Gate3.

*Note: Why trigger CV4/Gate4 in unison with CV1/Gate1? This gives you an extra gate to trigger a master envelope if your 3 voices are paraphonic a.k.a sharing for example the same envelope-controlled VCA.*

### **3 Voice splitting on**

There are 2 split modes available for voicing mode 3

Low chord + high lead and Bass lead + high chord.

When we set the voicing to 3 voice, we toggle between both modes.

We are essentially swapping the two zones.

Notice that the function button LED will blink **once**, or **twice** before exiting function.

#### **Low chord + high lead (function button LED blinks once).**

In this mode when **split** is **on** zone1 is a 3 voice chord:

The first key controls CV1/Gate1, The second key controls CV2/Gate2, the third key controls CV3/Gate3. Keys in zone 2 control only CV4/Gate4

#### **Bass lead + high chord (function button LED blinks twice).**

In this mode when **split** is **on** zone1 is a monophonic bass. All keys in zone 1 control only CV4/Gate4.

Zone 2 is a 3 note chord. The first key controls CV1/Gate1, The second key controls CV2/Gate2, the third and subsequent keys control CV3/Gate3.

# 4 Voice

There are modes available for voicing mode 4

Poly1234 and Round robin

When we set the voicing to 4 voice, we toggle between both modes.

Notice that the function button LED will blink **once for poly1234**, or **twice for round robin** before exiting function.

## Poly1234

NiftyKEYZ triggers voices in a specific sequence when playing up to four notes simultaneously. The sequence is as follows: the first key pressed triggers CV/GATE1, the second key pressed triggers CV/GATE2, the third key pressed triggers CV/GATE3, and the fourth key pressed triggers CV/GATE4.

If you only play one key, CV/GATE1 will always be triggered.

## Round Robin

On the other hand, Round Robin mode in NiftyKEYZ cycles through all four voices on every key press, regardless of the number of keys currently being depressed. This means that if you repeatedly play the same key, NiftyKEYZ will trigger all voices from CV/GATE1 to CV/GATE4 in sequence.

Split has no effect in this mode.

# Auto-chord

As the name suggests this feature enables you to play chords with a single key. Auto-chord applies to the MIDI output and the CV/GATE when voicing mode is set to 4 voice.

## Auto-chord learn

This function is used to “teach” NiftyKEYZ a chord by holding a combination of keys.

- Press function to enter function mode (the function button LED is lit solid)
- Press the auto-chord learn key A#5 (the function button LED blinks once)
- Press some keys to define the chord & press function when done.

The chord is saved in internal memory and will remain until a factory reset is performed.

Note: a chord can have up to 32 notes, all of which are sent via MIDI but only the first 4 defined notes will be used for the analog CV/GATE voices.

## Auto-chord On/Off

When in function mode use the following keys to turn Auto-chord On or Off.

F#4 turns AutoChord On. G#4 turns AutoChord Off

# Aftertouch, Expression Pedal Smoothing

You can adjust the sensitivity of the aftertouch and expression pedal response, allowing for snappier or smoother response.

Hold function and adjust the glide knob to set the aftertouch/expression smoothing. Turning the knob clockwise increases the smoothing.

The sensitivity ranges from instant to 5 seconds.



# Voltage Offset

When using NiftyKEYZ CV outputs to control certain synthesizers, you may notice that intonation is unexpectedly high or low.

This is because, although the volt per octave defines the scale of the frequency, the actual frequency at a given voltage can vary from one manufacturer to another.

To address this, you can apply a voltage offset to your NiftyKEYZ CV outputs. To apply a voltage offset, you can use the following methods:

- Hold the transpose +1 key before powering up to apply a +1V offset.
- Hold the transpose -1 key before powering up to apply a -1V offset.
- Hold both the +1 and -1 keys simultaneously to remove the offset.

The voltage offset setting is saved between power cycles. Performing a factory reset will set the offset to zero.

# Specifications

- Full size 49 key synth-action keybed with aftertouch
- 4x CV + gate outs - can be split by keyboard zone and used polyphonic or monophonic modes
  - Useable case area = 112hp for eurorack modules
  - Power output for modules
    - +12V - 1500mA
    - -12V - 1000mA
    - +5V - 1000mA
  - 2x buffered mults
  - Range of cv outs 1 through 4 = 0-10V
  - Voltage output gates 1 through 4 - off = 0 on = 5 (off = 0 on = 4.65)
  - Voltage output modwheel/LFO = 1-10V switchable to 0-5V
  - Voltage output pitchwheel = 1-10V
  - Voltage output expression = 1-10V
  - Voltage output velocity = 1-10V switchable to 0-5V
  - Voltage output aftertouch = 1-10V switchable to 0-5V
  - Voltage output clock - off = 0 on = 5
  - Input voltage range of oscillator = 0-10V
  - Two volume controllable 1/4" ts mono outputs on its rear (mirrored 3.5mm outs on top)
- Dedicated control for headphone out with 1/4" headphone jack on its rear
- USB MIDI class-compliant - no drivers needed
- MIDI in via USB and 5 pin Din
- MIDI thru via 5 Pin Din and USB
- Dimensions = 70cm x 36cm x 13cm
- Included in the box

NiftyKEYZ

NiftyKEYZ switching power supply with blades for NA, EU, UK, and AU

