

WAVEFRONT QUICKSTART GUIDE

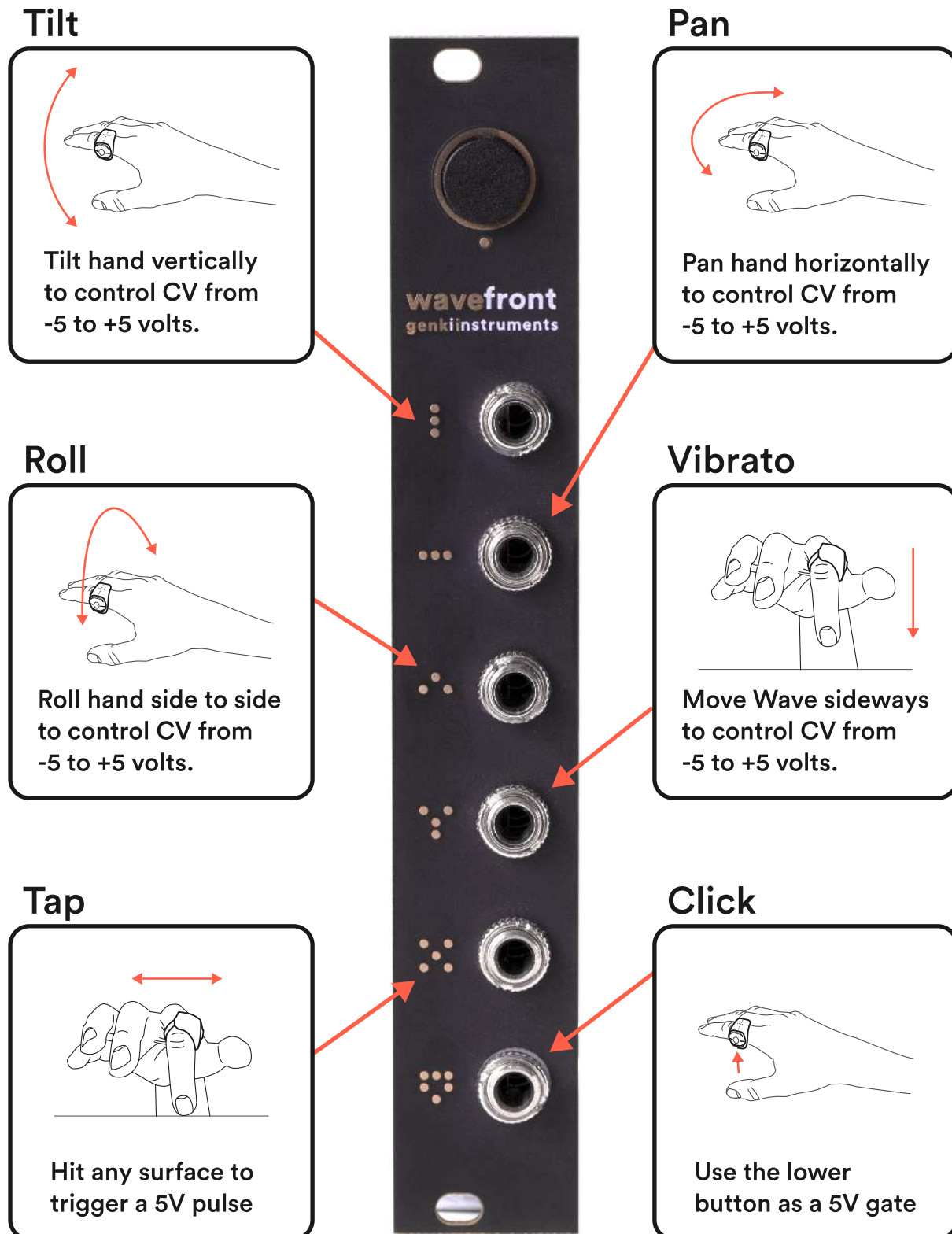


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Overview

Wavefront is a 4HP Eurorack module that enables you to integrate the expressive capabilities of Wave directly into your modular system.



Installing Wavefront

A ribbon cable comes attached to the back of Wavefront. All you have to do is secure Wavefront to your rack. The red strip is -12V.

Turn your system on. A white LED should start fading in and out indicating that it has power and is ready to groove.

Connecting Wave to Wavefront

With both Wavefront and Wave turned on, move Wave close to Wavefront and press the black button on the module. LEDs on both devices should now be stable.

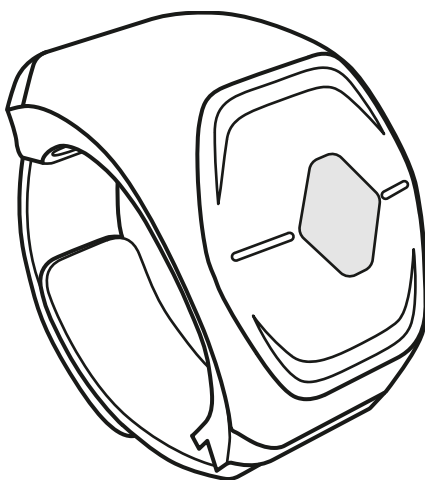
Wave will remain connected until it is explicitly disconnected by holding the button on Wavefront for three seconds.

How to use Wave with Wavefront

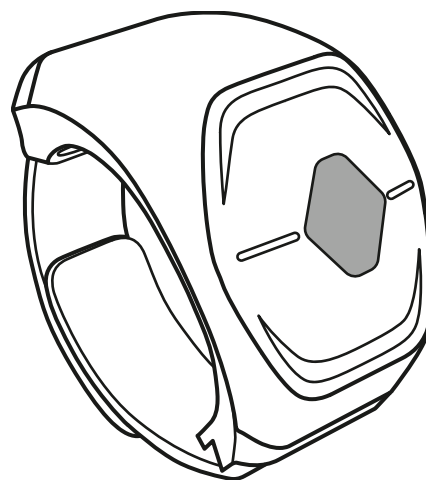
Wave has 3 buttons you can reach with your thumb. Each button has a certain function.

The LED display indicates whether Wave is active or not.

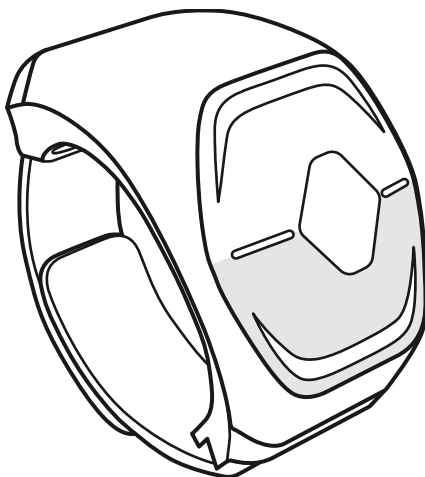
A stable horizontal line indicates that Wave is inactive while interactive horizontal and vertical lines indicate that Wave is actively sending data to Wavefront.



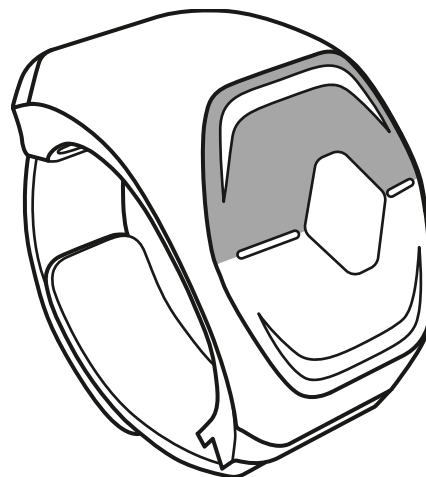
Click middle button to **activate Wave**



Long press to **reset movements**



Momentary for **gate**



Long press upper button to **enter/exit edit mode**

Identifying Wave

If you have more than one Wave + Wavefront connected to your rack you can identify which Wave is connected to each module by pressing the button on Wavefront once. This will trigger the LED display on the Wave that's connected to that particular Wavefront.

Connecting BLE MIDI instruments

You can connect other Bluetooth MIDI instruments to your Wavefront, other than Wave.

- 1 Turn on your instrument, make sure Bluetooth is turned on and it's searching for a host.
- 2 Keep your instrument close to Wavefront as Wavefront connects to the Bluetooth device nearest to it.
- 3 Press the button on Wavefront.
- 4 Your instrument is connected when Wavefront's LED shines a steady light.

To be able to connect other BLE MIDI instruments other than Wave you need to update Wavefront to its newest firmware.

Connecting devices to Wavefront

Make sure your device has Bluetooth turned on and Wavefront has power.
Your device is connected when Wavefront's LED shines a steady light.

Mac

- 1 Download Software by clicking here.
- 2 Install Software and open it.
- 3 Go to Menu → Connect Bluetooth Device
- 4 You should see Wavefront. Press to connect.
- 5 To disconnect Wavefront navigate again to "Connect Bluetooth Device" and press the "x" behind Wavefront's name.
- 6 **Note** that if you do not disconnect Wavefront accordingly from Software (for example if you only cut off the power to Wavefront) your computer will remember the connection and auto-connect to Wavefront next time you turn it on.

Windows

- 1 Download Software by clicking here.
- 2 When you open Software for the first time you might get a notification.
- 3 **Please select Learn more and Run anyway.**
- 4 Software will ask you to install loopMIDI, a virtual MIDI driver, if it's not already installed. If for some reason this does not happen, the driver can be found here. **Note that your browser may prompt a warning when trying to download loopMIDI, but we assure you that it's completely safe.**
- 5 After installation of Software and loopMIDI, in Software navigate to Menu → Connect Bluetooth Device.
- 6 You should see Wavefront. Press to connect.
- 7 To disconnect Wavefront navigate again to "Connect Bluetooth Device" and press the "x" behind Wavefront's name.
- 8 **Note** that if you do not disconnect Wavefront accordingly from Software (for example if you only cut off the power to Wavefront) your computer will remember the connection and auto-connect to Wavefront next time you turn it on.

If you have an older version of Software installed

It's preferable to completely remove the Korg BLE MIDI driver from the system. To do this head through Settings → Apps, search for "Korg BLE MIDI" and click "Uninstall". Verify that the driver is not present in Device Manager → Sound, video and game controllers or Device Manager → Software devices. Restart the computer.

iPad and iPhone

You can connect Wavefront to your iOS device. It works on an app-to-app basis so you need to connect Wavefront through the application you want to use it with - not through the regular Bluetooth Settings.

- 1 Turn Wavefront on. Make sure Bluetooth is turned on on your device.
- 2 Navigate to the app you want to use Wavefront with.
- 3 Find the app's settings (usually a wrench or a gear icon) and find Bluetooth MIDI (as long as the app supports Bluetooth MIDI devices).
- 4 You should see Wavefront on a list of Bluetooth MIDI devices. Press connect.
- 5 If the app you're using does not provide an option to pair Bluetooth MIDI devices, download this application and use it to connect to Wavefront.

To get started, try out our simple TouchOSC layout.

The layout consists of:

- 1 An XY pad controlling the Tilt and Pan outputs
- 2 Two sliders controlling Roll and Vibrato
- 3 A momentary push-button connected to the Tap output
- 4 A toggle switch connected to the Click output

[Download Wavefront's TouchOSC layout](#)

Android

- 1 Turn Wavefront on. Make sure Bluetooth is turned on on your device.
- 2 Navigate to the system settings (gear icon).
- 3 Select Connected Devices and select Bluetooth.
- 4 Select Pair new device.
- 5 You should see Wavefront on the list. Press it to connect it.
- 6 Once your Bluetooth MIDI device is paired, it'll show up in the list of Paired devices.
- 7 Now go over to the application you want to use Wavefront with (as long as it can send MIDI) and assign MIDI values to parameters.
- 8 If the app you're using does not provide an option to pair Bluetooth MIDI devices, download this application and use it to connect to Wavefront.

To get started, try out any of these tried and tested applications:

- 1 MIDI Controller (Volcano Mobile)
- 2 MIDI Commander
- 3 MIDI Controller
- 4 TouchDAW

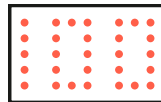
Edit mode

Edit Mode allows you to edit Wave's functions on the ring itself. You enter and exit Edit Mode by holding the Up button on Wave for half a second.

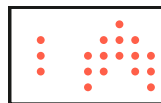
The first screen that shows up when entering Edit Mode is the battery status of Wave.

When the battery status disappears you've entered Edit Mode. Navigate between the functions, represented by their icons, using the Up and Down buttons on Wave. The last screen allows you to change the state of Wave from Relative to Absolute.

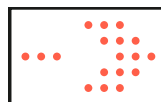
Battery



Tilt



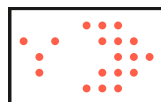
Pan



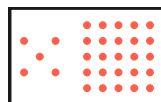
Roll



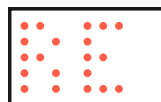
Vibrato



Tap



Rel/Abs

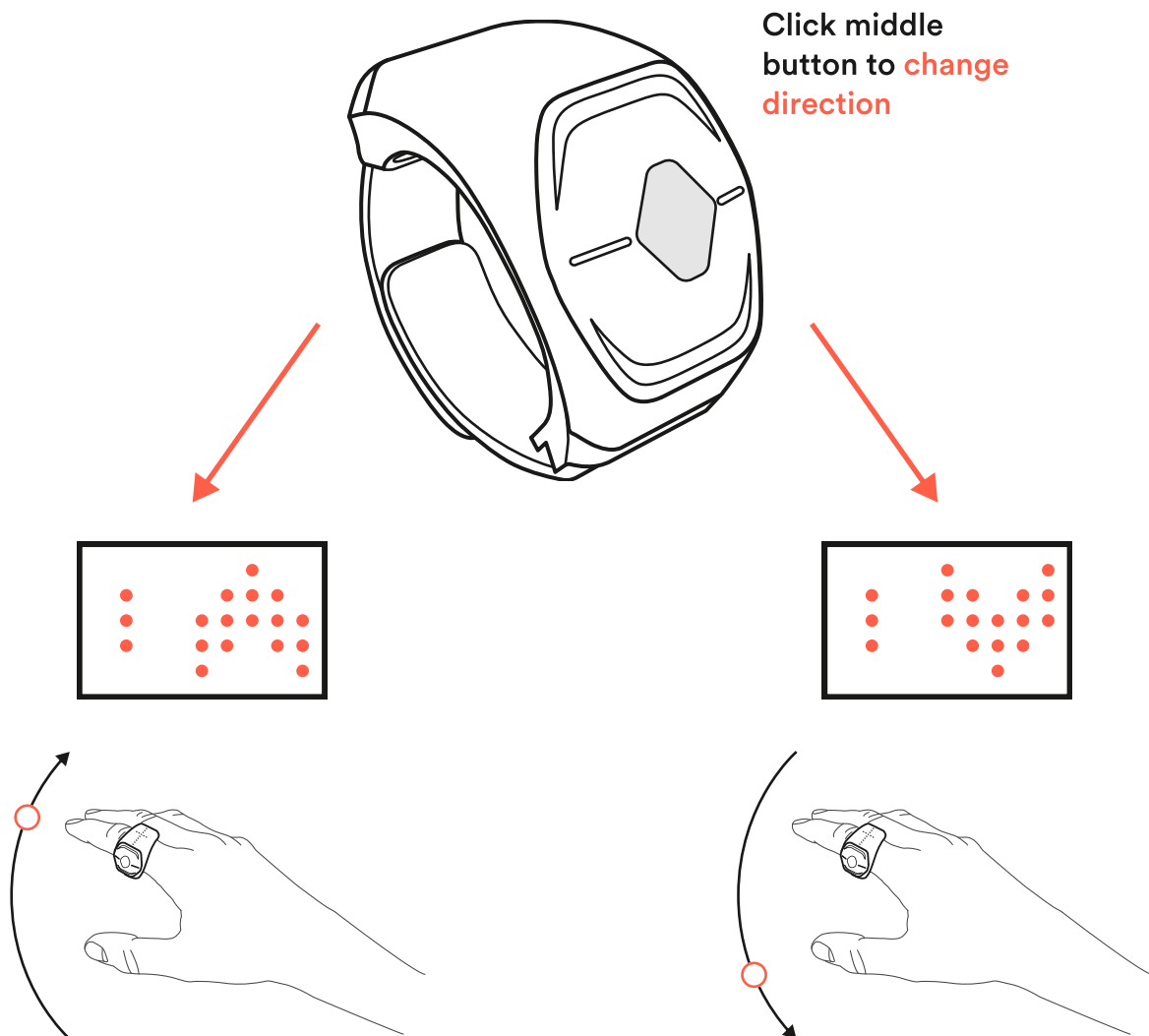


Movement Direction: Tilt, Pan, Roll and Vibrato

The arrow beside the icon of functions Tilt, Pan, Roll and Vibrato indicates its movement direction.

You can invert the movement direction by pressing the Middle button on Wave. When you do the arrow should flip.

This will make the parameter you are controlling move in the opposite direction of your movement.

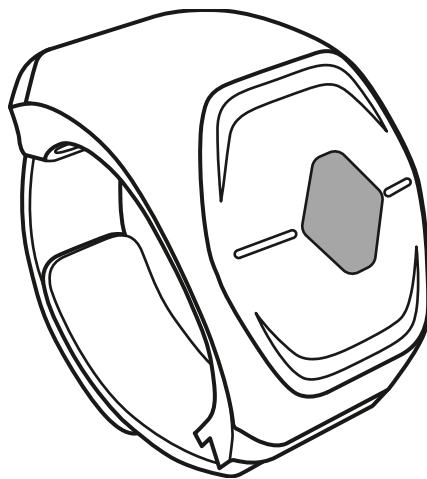


Movement Range: Tilt, Pan and Roll

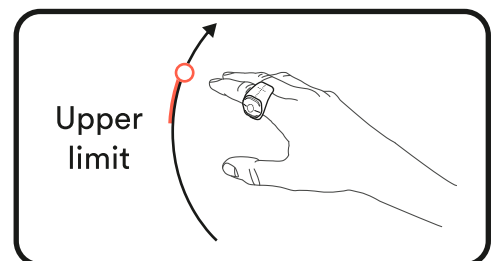
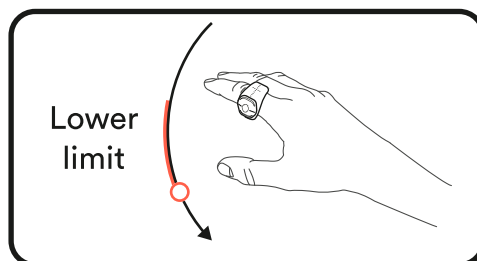
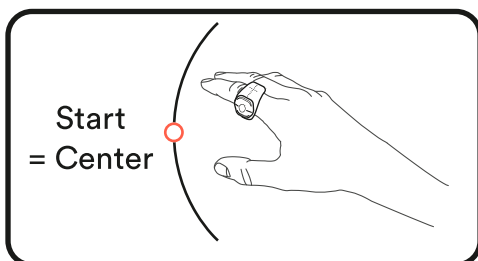
The default range of each movement is from 0 to 90 degrees. The range of a movement controls its sensitivity. If the range is small the movement becomes more sensitive, and if the range is large the movement will be less so.

To change the movement range you can hold the Middle button and trace the desired range of the movement in the air. You can go up to 180 degrees.

The position where you start tracing will become the movements starting point when you Reset the movements. You can for example start in the middle, trace upwards and then move past your starting point when you trace downwards. This way the starting point will be in the middle of the movement.



Long press
middle button
to **trace range**



Output Range: Tilt, Pan, Roll and Vibrato

The default output range for movements is -5V to +5V. This range is customizable for each movement.

With the icon for the movement you want to edit, hold the Down button to enter the Output Range editor.

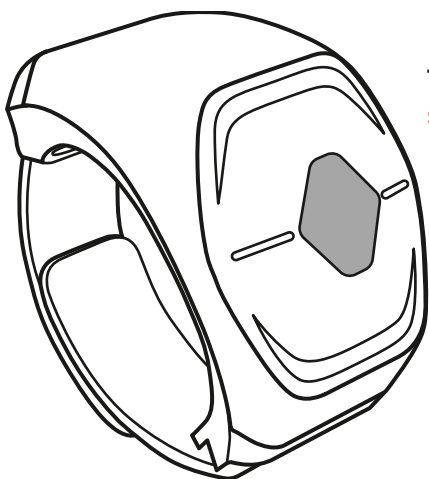
You can now toggle between editing min/max values of the range by pressing the Middle button and increase/decrease by pressing the Up/Down button respectively.

To exit the Output Range editor hold the Down button again.

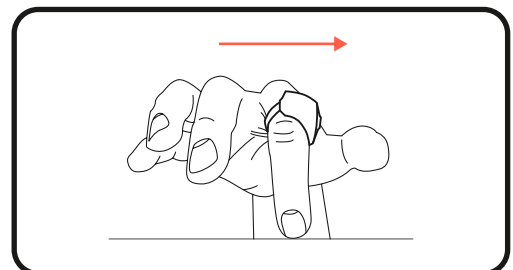
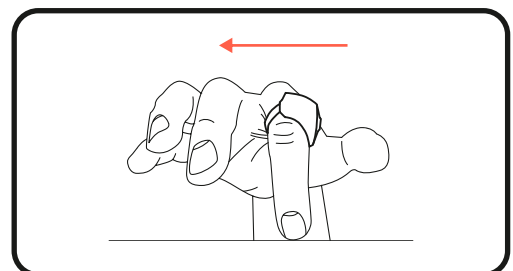
Vibrato sensitivity

Navigate to the icon for Vibrato.

Hold the Middle button and move side to side to change the sensitivity. The slower you move the more sensitive the Vibrato will be.



Long press middle button to **change sensitivity**



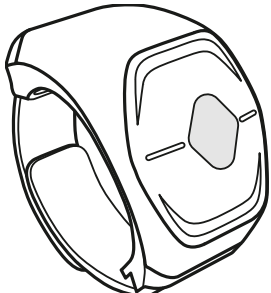
Tap Sensitivity

Navigate to the icon for Tap.

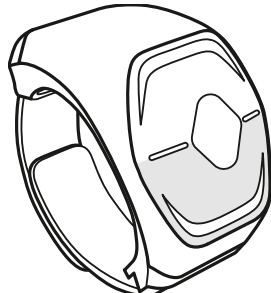
Press the Middle button and use the Up and Down buttons to increase/decrease the sensitivity. A filled rectangle means most sensitivity, while an unfilled rectangle means that Tap has been turned off.

Press the middle button again when you have set your desired sensitivity value.

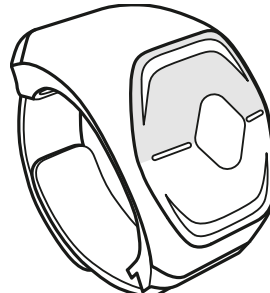
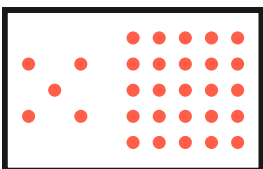
Click middle button to **change sensitivity**



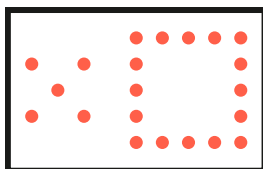
Click lower button for **decreased sensitivity**



Click upper button for **increased sensitivity**

Sensitivity = 5 (max)



Sensitivity = 0 (off)

Relative vs Absolute

There are two options to map functions to plugin parameters.

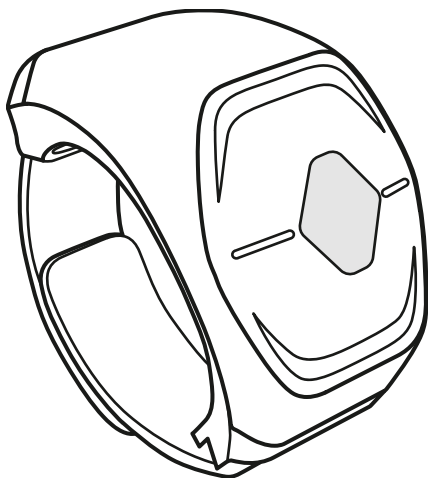
You can decide if Wave uses Relative (RE) or Absolute (AB) movements.
The default state for Wave is Relative.

Relative mode behaves in a way that when you deactivate Wave, no matter how you move your hand in between, when you reactivate it Wave will start tracking from the last position before deactivating.

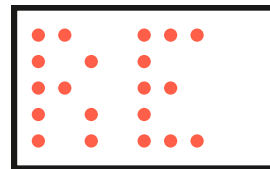
The Absolute mode does the opposite. It keeps tracking your movements even if you've deactivated Wave, and "jumps" to the current value when you reactivate it.

Absolute is stuck in space, Relative moves with you.

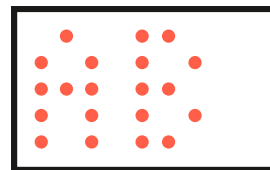
To change the state of Wave press the middle button to cycle between Relative and Absolute.



Click middle
button to
change
modes



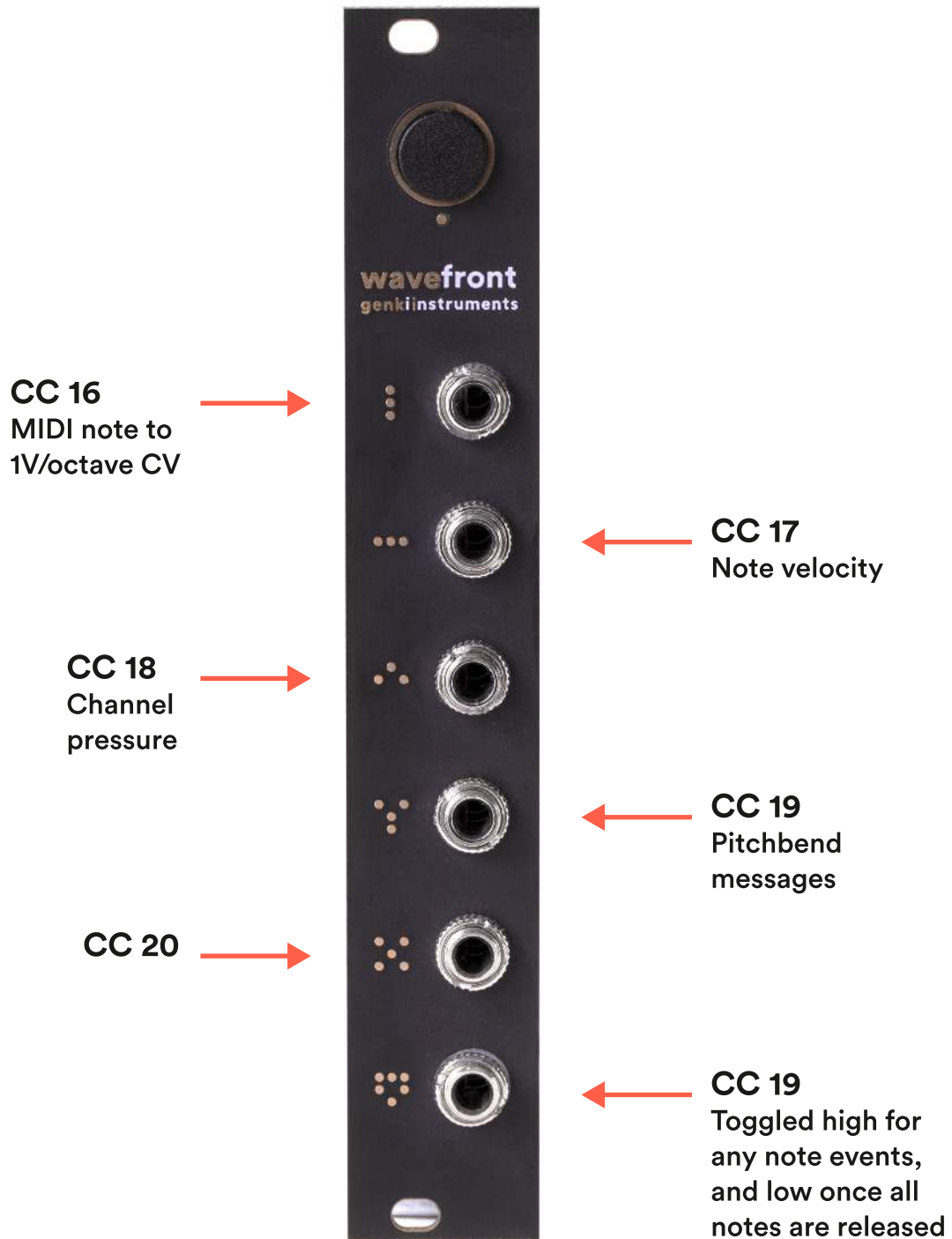
Relative movements



Absolute movements

MIDI configuration

Wavefront is configured to route fixed MIDI messages to each output.



Wavefront is capable of receiving 14-bit MIDI CC values. The controller numbers are fixed at 16-21.

When sending 14-bit messages, the MSB is sent as usual and the LSB should follow in a message where the controller number offset by 32.

Standard 7-bit MIDI messages work just as well.

Outputs

The first four outputs (16-19) are connected to a 16-bit DAC and have a range of +/- 5V.

The last two outputs (20 and 21) can only be toggled high/low. CC messages with a value of 64 and higher will set the output to 5V.

In addition to these fixed controller values, Wavefront also listens to note on/off messages, pitchbend and channel pressure.

Gate

The Gate output is toggled high for any note on events, and low once all notes are released.

MIDI Note

MIDI note numbers are translated to 1V/octave CV and routed to the Tilt output, and the note velocity is routed to Pan.

Channel Pressure

Channel pressure messages are routed to the Roll output.

Pitchbend

Pitchbend messages get routed to the Vibrato output.

How to update Wavefront

Follow this step by step guide to update the firmware on your Wavefront.

- 1 Power down your rack.
- 2 Hold down the button on Wavefront and power the rack on again.
- 3 Wavefront's LED should be flashing rapidly. Wavefront is now in "update mode."
- 4 Make sure Bluetooth is enabled on your computer and that you have the latest version of Softwave ([Learn about Softwave here](#)).
- 5 Start Softwave, it should automatically detect Wavefront and prompt for an update.
- 6 After the update is complete, Wavefront will restart and the LED will start be fading in and out slowly again.
- 7 Now you can connect your Bluetooth MIDI device to Wavefront.