

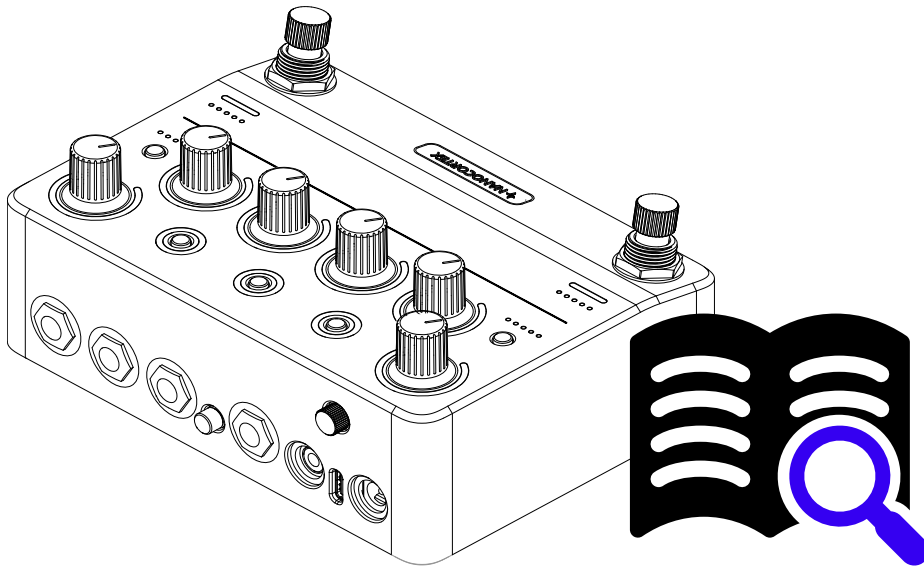
Nano Cortex® User Manual 1.1.0

Search 🔍

# 01

# Welcome to Nano Cortex

Neural DSP® Nano Cortex® User Manual [[NanOS 1.1.0](#)]



# Global Features

Neural Capture, one of the hallmark features of Neural DSP's hardware, is integrated into Nano Cortex. This proprietary technology can learn and replicate the sonic characteristics of any physical amplifier, cabinet, or overdrive pedal with unprecedented accuracy.

Build Presets by adding a Neural Capture, an IR Loader, and effects to your signal chain. Deeper Preset customization and additional features are available via the Cortex Cloud app.

- Neural Capture
- 64 Preset slots
- 25 Capture slots organized in 5 banks
- 5 IR slots
- 5 Effect slots that can be used separately or combined
- MIDI support and Bluetooth connectivity
- Access to thousands of Neural Captures on the Cortex Cloud app

## Cortex Cloud

Discover Users and Neural Captures using the Cortex Cloud app.

## Contact Information

Neural DSP Technologies is happy to provide professional technical support via email to all registered users, absolutely free of charge. Before contacting us, we recommend searching our [knowledge base](#) to see if the answer to your question has already been published.

If you cannot find a solution to your problem, please contact [support@neuraldsp.com](mailto:support@neuraldsp.com) so we can help you further.

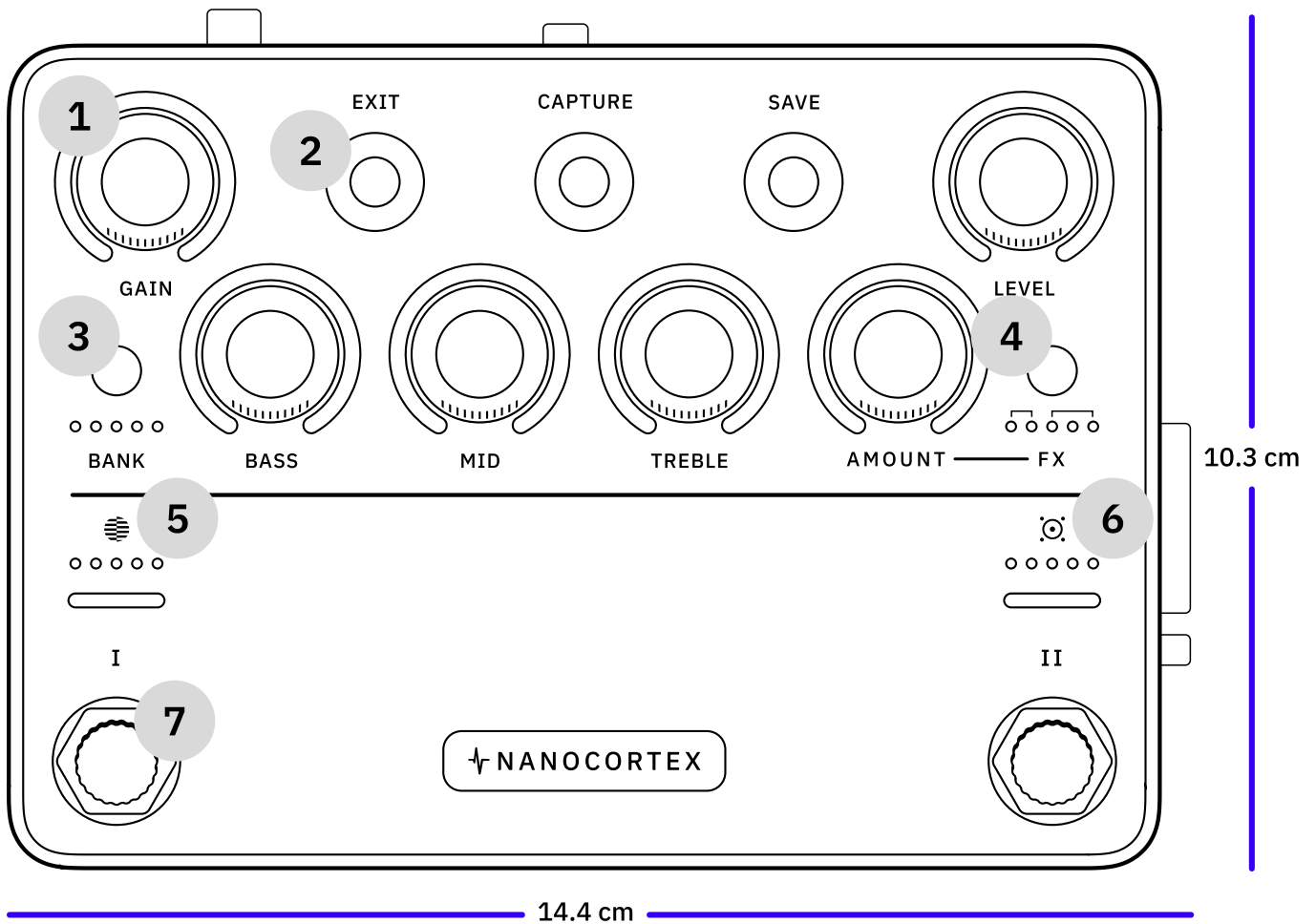
# 02

## Overview

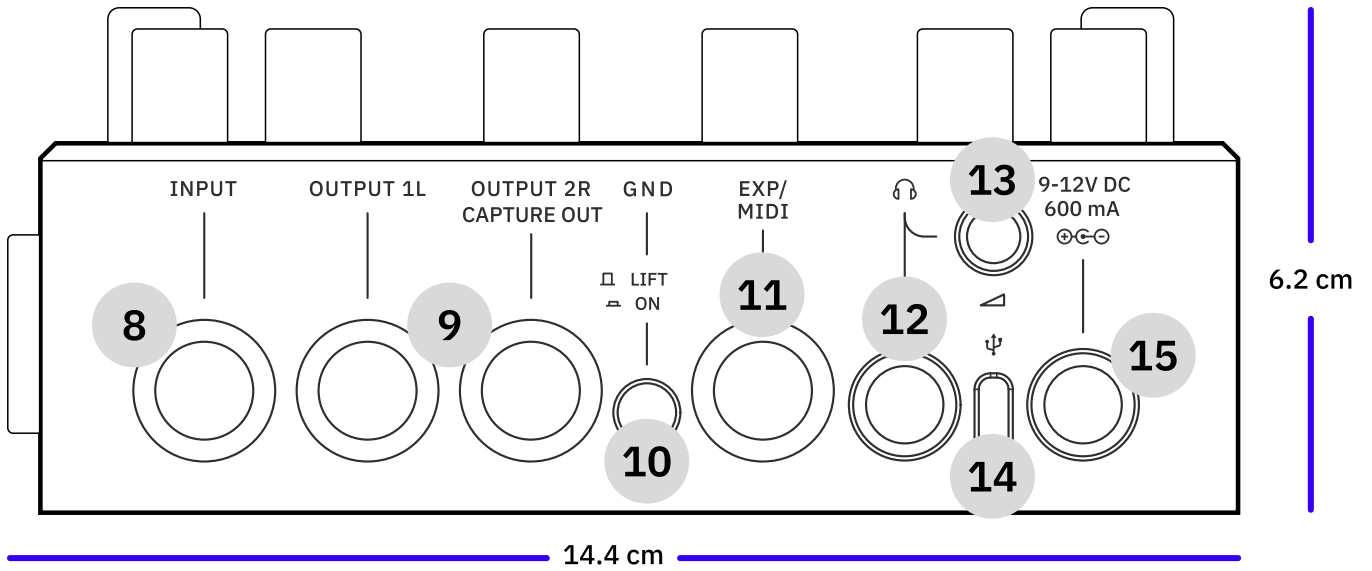
Nano Cortex weighs **620 g / 1.36 lbs** and its dimensions are **14.4 x 10.3 x 6.2 cm / 5.6 x 4.0 x 2.4"**.

# Nano Cortex Dimensions

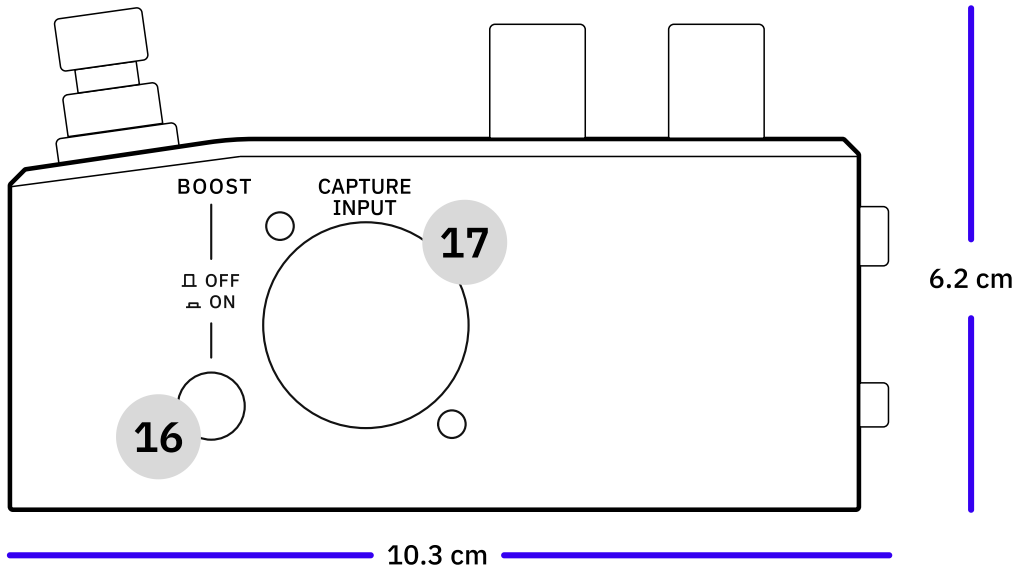
## Top View



## Rear View

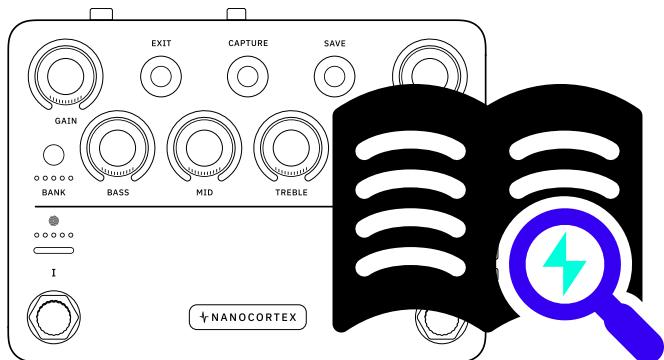


### Side View



# 03

## Quick Start Guide

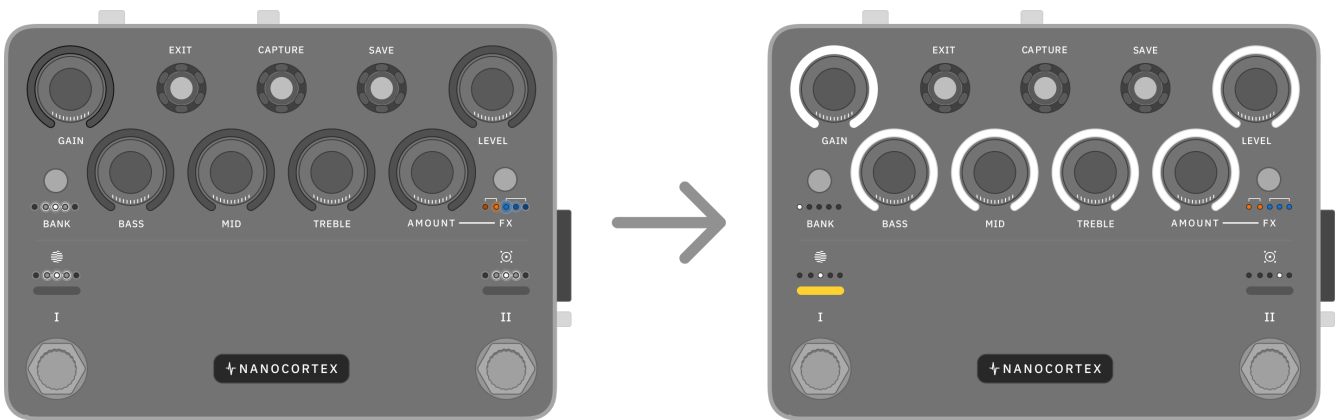


# Turning on your Nano Cortex

Connect your Nano Cortex to the power source.



After a few seconds, the **BANK**, **CAPTURE**, **FX**, and **IR** LEDs will light up indicating that Nano Cortex is powering on.



Once the booting sequence completes, Nano Cortex will enter Performance Mode.

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## POWER SOURCES

Nano Cortex can be powered by two different sources:

- **EXTERNAL POWER SUPPLY:** Nano Cortex requires a center-negative power supply that provides 9-12V DC and at least 600mA, using a standard 2.1/5.5mm DC connector.
- **USB-C:** Nano Cortex can also be powered via USB-C (5V-1.5A). Connect the unit to your computer or another USB-C compliant power source with the included USB-C cable.

### Quad Cortex Power Supply Compatibility

You can also power your Nano Cortex with the Quad Cortex power supply.





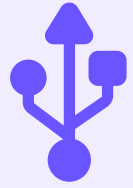
## USB-C Compliant Power Sources

To ensure optimal performance and safety, please use a USB-C power source that complies with the following specifications:

**5V - 1.5A.**

While connecting Nano Cortex to USB-A ports will allow for data transmission, these ports will not provide sufficient power to fully operate the device.

Using USB-A ports or non-compliant USB hubs may result in improper functionality. Always verify that the USB-C source meets these requirements to maintain the longevity and reliability of your device.

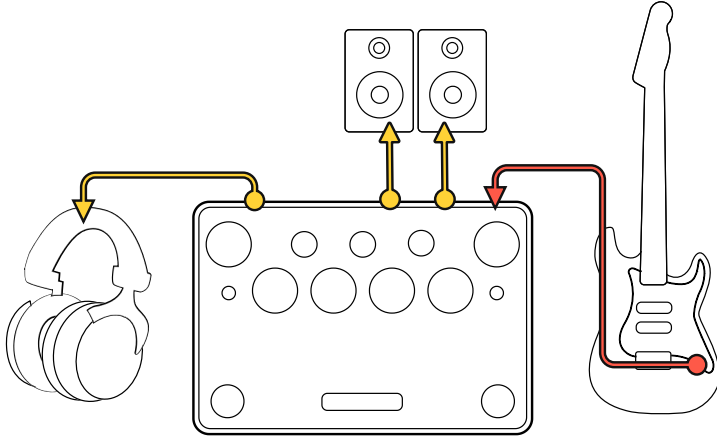


## Turning off your Nano Cortex



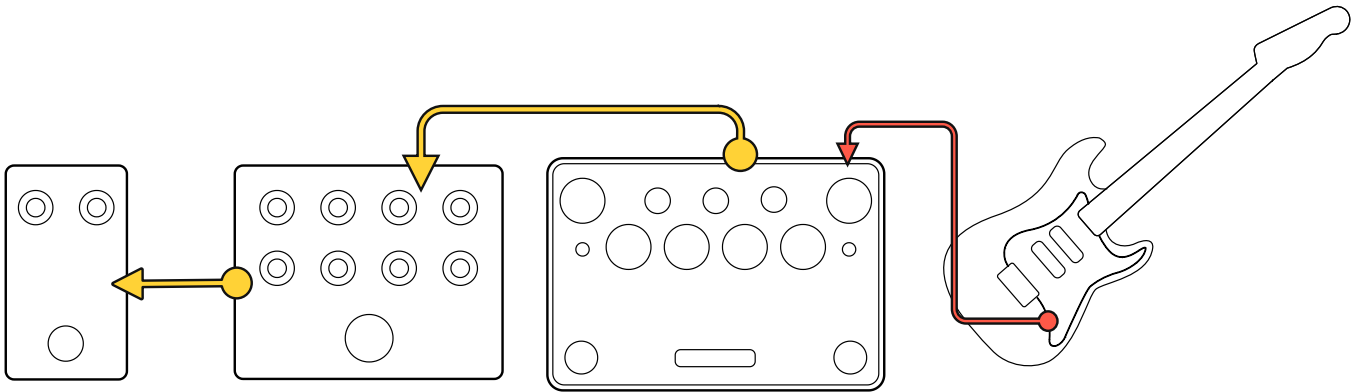
Disconnect the Nano Cortex from the power source to power off the device.

## Connecting your Gear



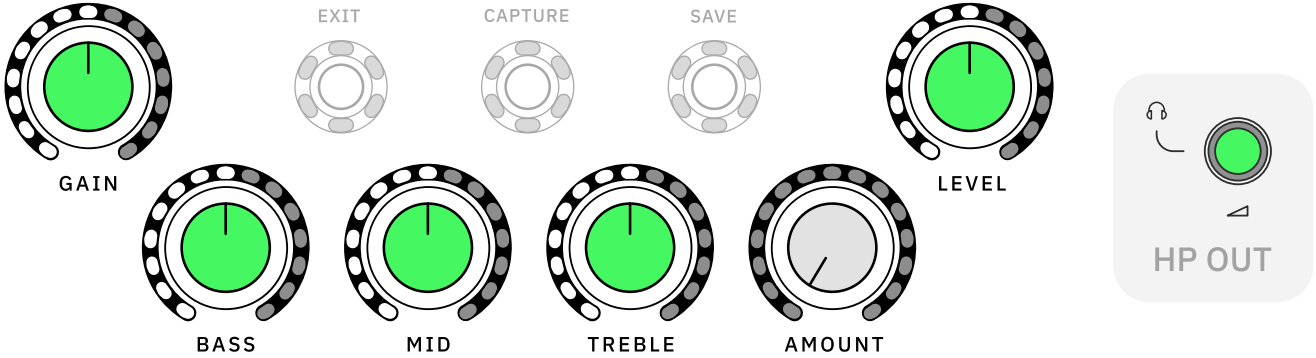
Connect your instrument to **INPUT**.

Connect your studio monitors, PA, or FRFR cabinet to **OUTPUT 1L** and **2R**. Additionally, you can connect your Headphones to **HP OUTPUT**.



If your Nano Cortex is part of a bigger pedalboard setup, use **INPUT** and **OUTPUTS 1L/2R** to place it wherever you need it in the audio chain.

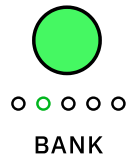
# Global Controls



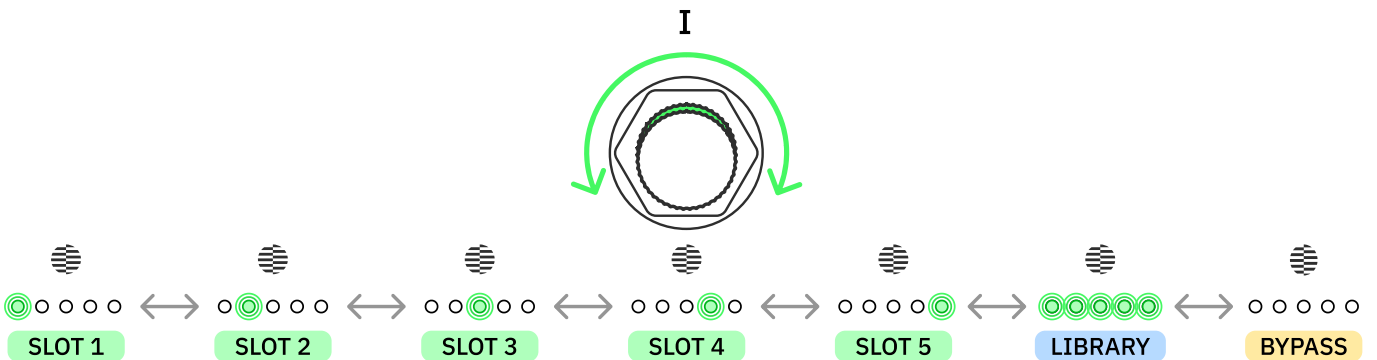
Turn **GAIN**, **BASS**, **MID**, and **TREBLE** knobs clockwise and counterclockwise to control the Capture parameters.

Turn **LEVEL** to control the master output volume (OUTPUT 1L and 2R).

Use the **HP OUT** knob on the back to control the headphones output volume.



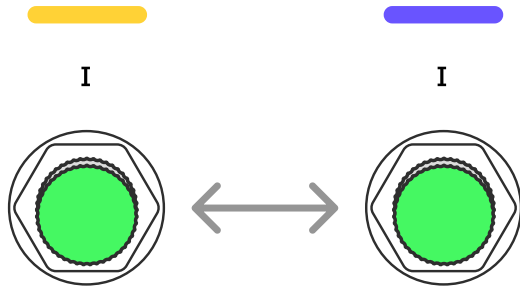
Press **BANK** to cycle through Capture banks.



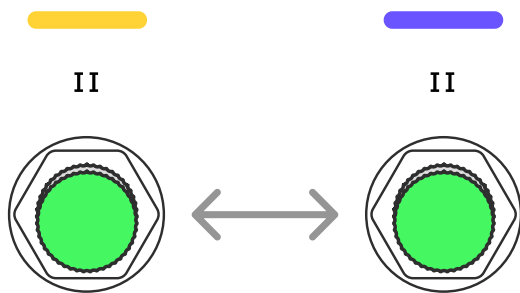
Turn **Footswitch I** clockwise or counterclockwise to navigate Capture slots.

All the LEDs will turn on when using a Neural Capture from the library that is not currently assigned to any slot.

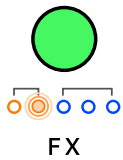
Navigate to the last position, where the LEDs are not lit, to bypass the Neural Capture.



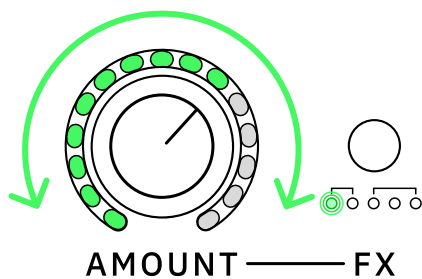
Press **Footswitch I** to toggle between Presets **IA** and **IB**. Different Presets can be assigned on the Cortex Cloud app.



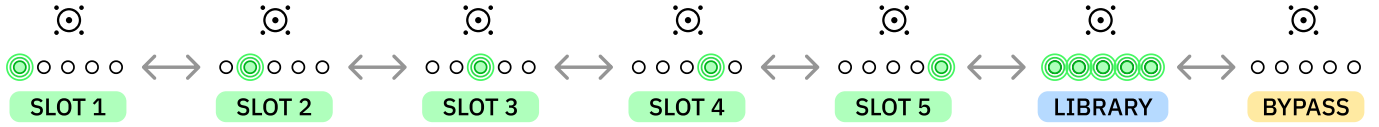
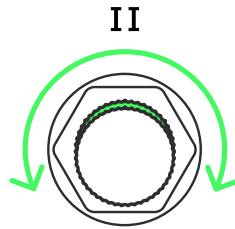
Press **Footswitch II** to toggle between Presets **IIA** and **IIB**. Different Presets can be assigned on the Cortex Cloud app.



Press **FX** to cycle through effect slots. Press-and-hold **FX** to bypass/enable the currently selected effect.



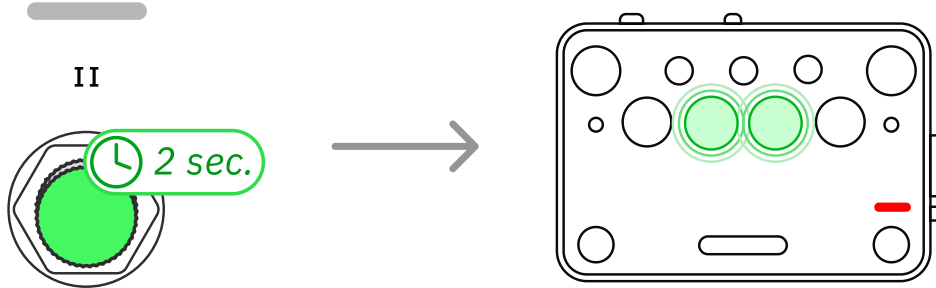
Turn the **AMOUNT** knob clockwise or counterclockwise to change how much of the selected effect is applied.



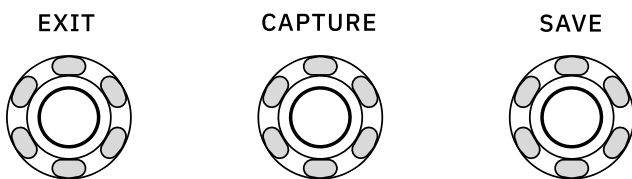
Turn **Footswitch II** clockwise or counterclockwise to navigate IR slots.

All the LEDs will turn on when using an IR from the library that is not currently assigned to any slot.

Navigate to the last position, where the LEDs are not lit, to bypass the IR Loader.

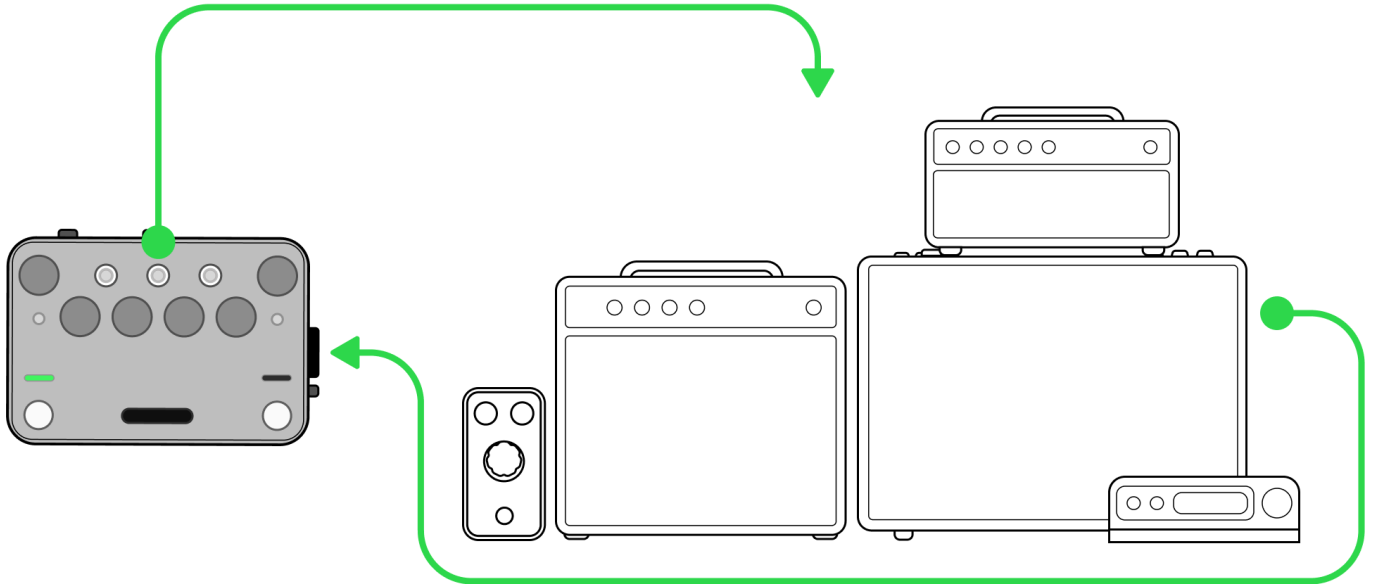


Press-and-hold **Footswitch II** for 2 seconds to access the Tuner. Press **Footswitch II** to exit the Tuner.



**EXIT**, **CAPTURE**, and **SAVE** buttons are reserved for the Neural Capture process, Preset saving, and Bluetooth pairing.

# Neural Capture Quick Guide



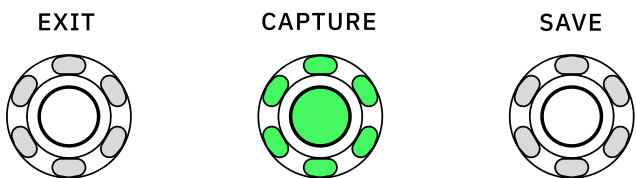
Neural Capture is a powerful tool that can learn and replicate the sonic characteristics of any amplifier, cabinet, or overdrive pedal with unprecedented accuracy and realism.

To create a Neural Capture, connect Nano Cortex to an overdrive pedal, a mic'd up cabinet, or an amplifier via a reactive load box.

**Neural Capture Full Guide** [Click to access a deeper overview of the Neural Capture process.](#)

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## Quick Connection Diagram



Press **CAPTURE** to access Capture Mode. In this mode, the CAPTURE LED ring will stay on.

### 01 REFERENCE INSTRUMENT

Connect your instrument to **INPUT**.

## 02 MONITORING DEVICES

Connect your headphones to **HP OUTPUT** or your Monitor Speaker to **OUTPUT 1L**.

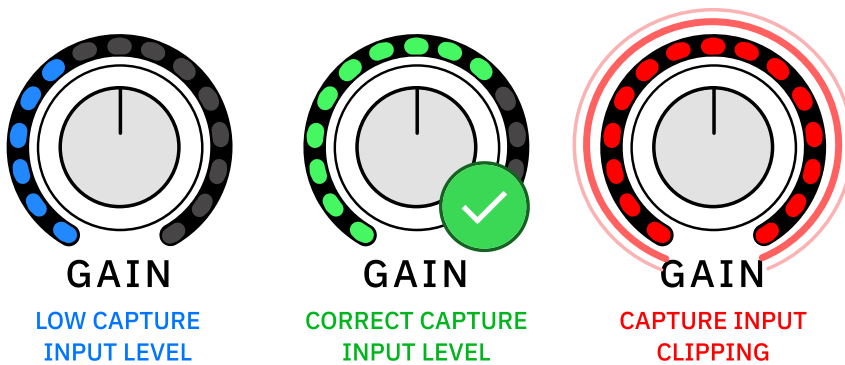
## 03 TARGET DEVICE

Connect the Nano Cortex's **OUTPUT 2R (CAPTURE OUT)** to the target device's input.

## 04 RETURN TO NANO CORTEX

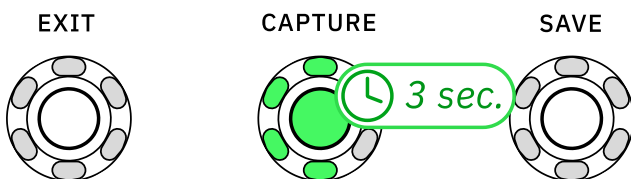
Connect the target device's output to the Nano Cortex's **CAPTURE INPUT**.

## 05 CAPTURE INPUT GAIN

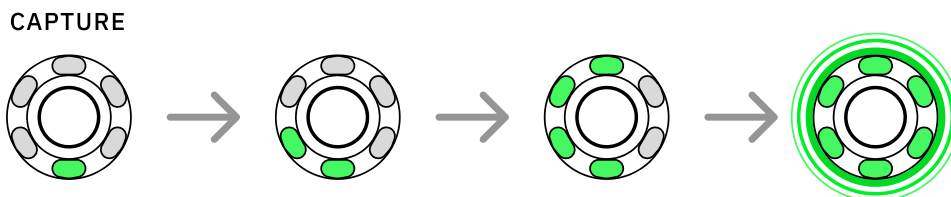


Set the CAPTURE INPUT level by adjusting the GAIN knob.

## 06 CAPTURE



Press-and-hold **CAPTURE** for 3 seconds to begin the Capture process.

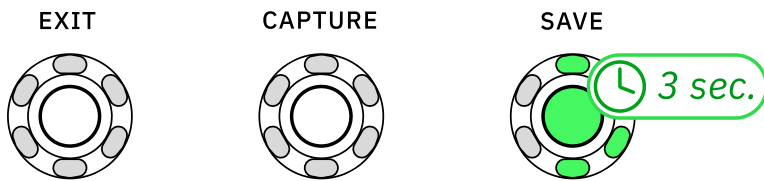


The CAPTURE LED ring will light up progressively as soon as the process begins.

## 07 TEST & SAVE



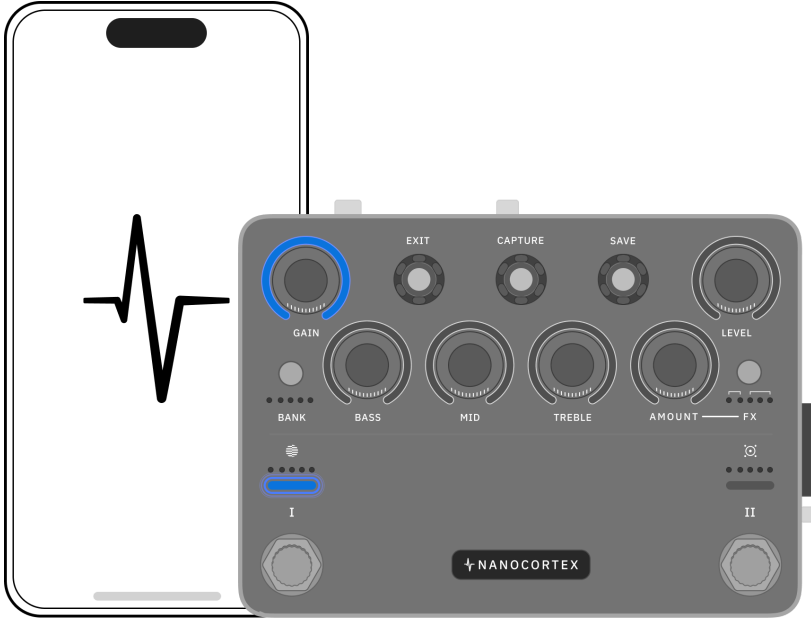
Press **Footswitch I** to toggle between the **Neural Capture** and the **Target Device**.



Press **SAVE** to store the recently created Capture. Choose a BANK, a Capture Slot, and press-and-hold **SAVE** for 3 seconds to store your Neural Capture.



# Cortex Cloud App Pairing



Deeper Preset customization and additional features are available via the **Cortex Cloud app**.

## Cortex Cloud App

Click to access a deeper overview of the Bluetooth Pairing process.

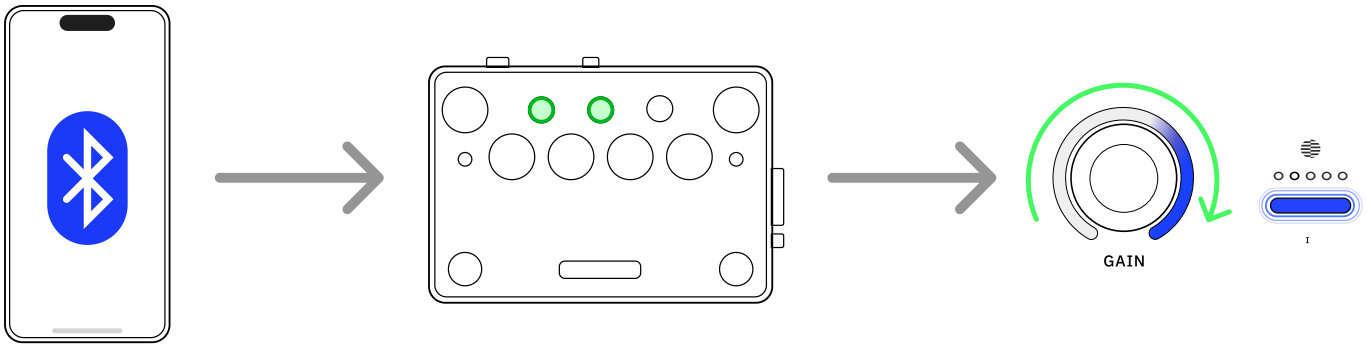


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## BLUETOOTH PAIRING



Open the Cortex Cloud app on your smartphone, access the **Devices** menu, and tap **Add New**. Your smartphone will start searching for nearby Nano Cortex units.

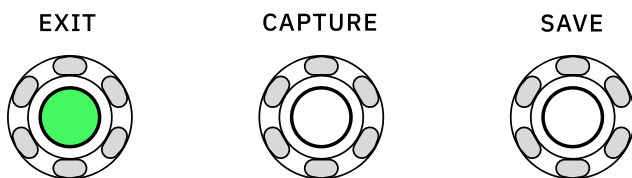


Press-and-hold **EXIT** and **CAPTURE** for 1 second to put your Nano Cortex into Pairing Mode.

The GAIN LED ring will illuminate clockwise and the Footswitch I's LED will blink slowly, indicating that Nano Cortex is in pairing mode.



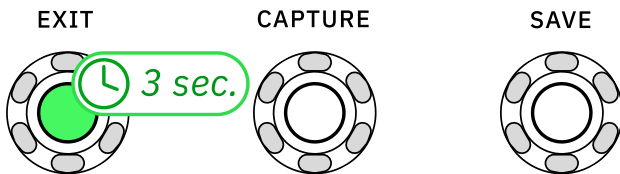
Once paired, the app will show the current Nano Cortex configuration.



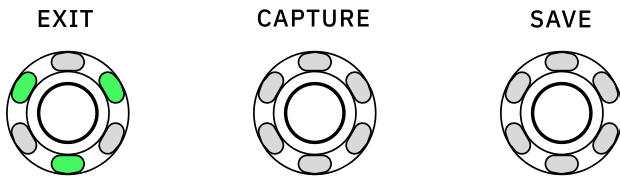
During Pairing Mode, press **EXIT** to return to Performance Mode.

# Parameter Lock

It's possible to temporarily disable the rotary functionality of knobs and footswitches to avoid unwanted parameter switching when performing.



Press-and-hold **EXIT** for 3 seconds to toggle the Parameter Lock.



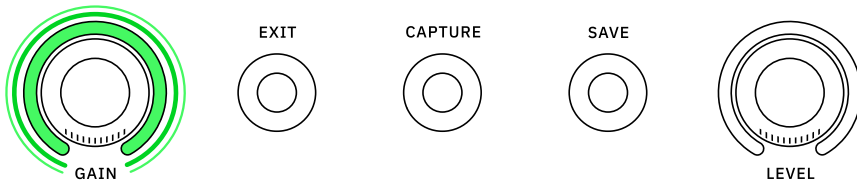
The **EXIT** LED ring will indicate when the Parameter Lock is enabled.

# I/O Clipping Alert

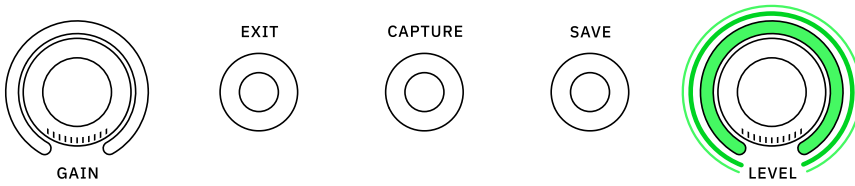
The **GAIN** and **LEVEL** knobs will indicate whenever inputs or outputs are clipping.

...

## PERFORMANCE MODE

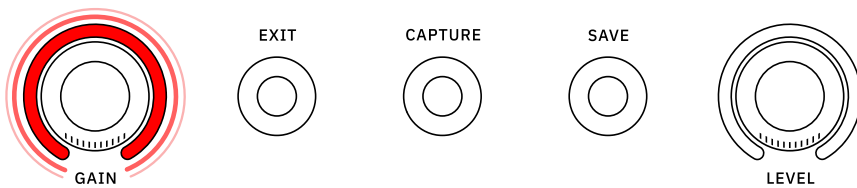


The **GAIN** Knob will blink 3 times whenever **INPUT** detects signal clipping.

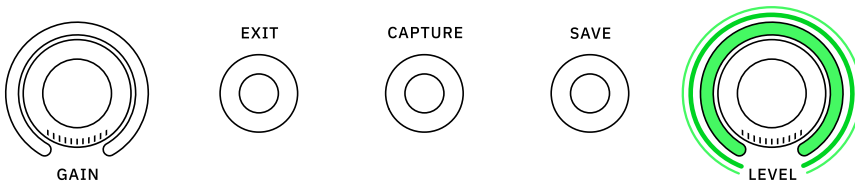


The **LEVEL** Knob will blink 3 times whenever **OUTPUTS 1L/2R** detect signal clipping.

## CAPTURE MODE



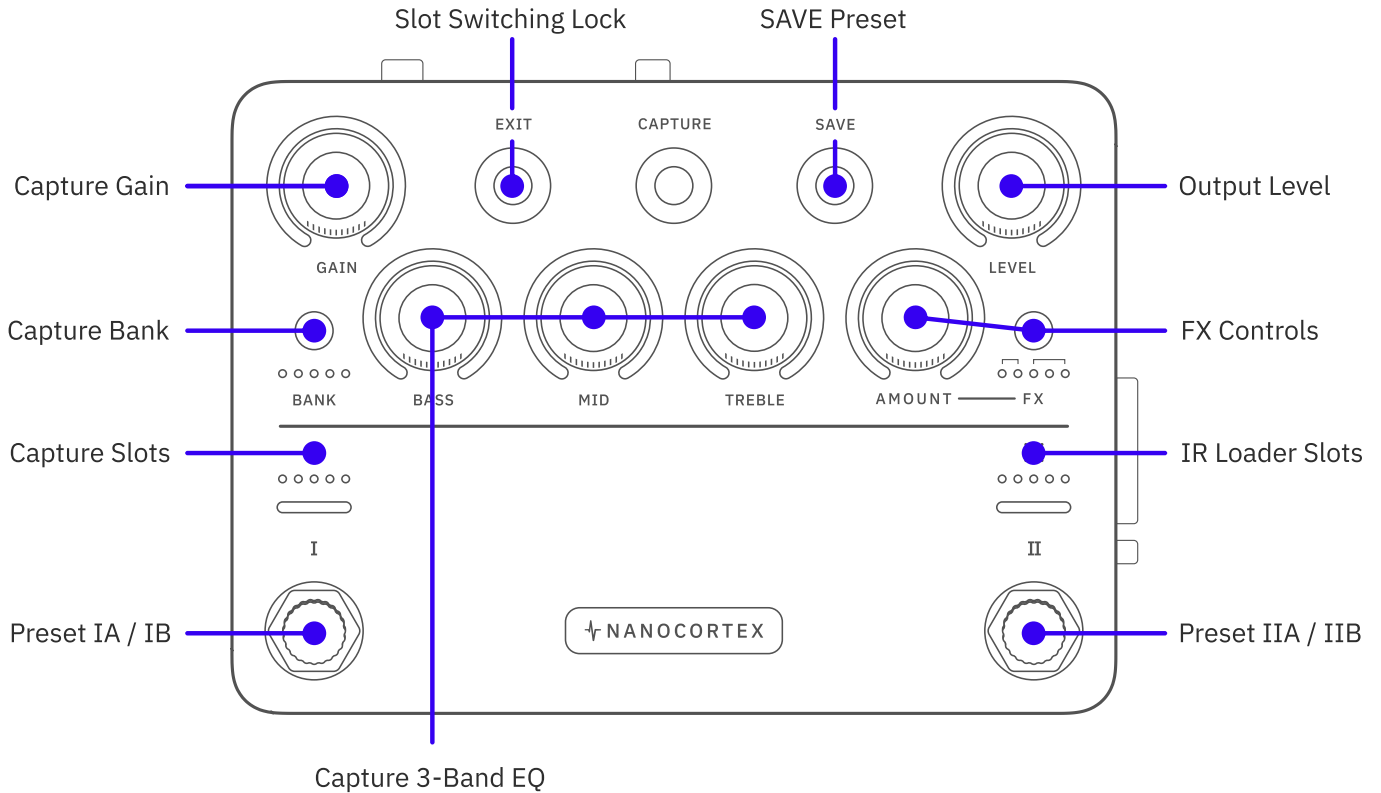
The **GAIN** Knob will turn red whenever **CAPTURE INPUT** detects signal clipping.



The **LEVEL** Knob will blink 3 times whenever **OUTPUTS 1L/2R** detect signal clipping.

# 04

## Performance Mode



## Performance Mode Access

Performance Mode allows you to play with your instrument and process your signal. Nano Cortex will access Performance Mode automatically after booting up.

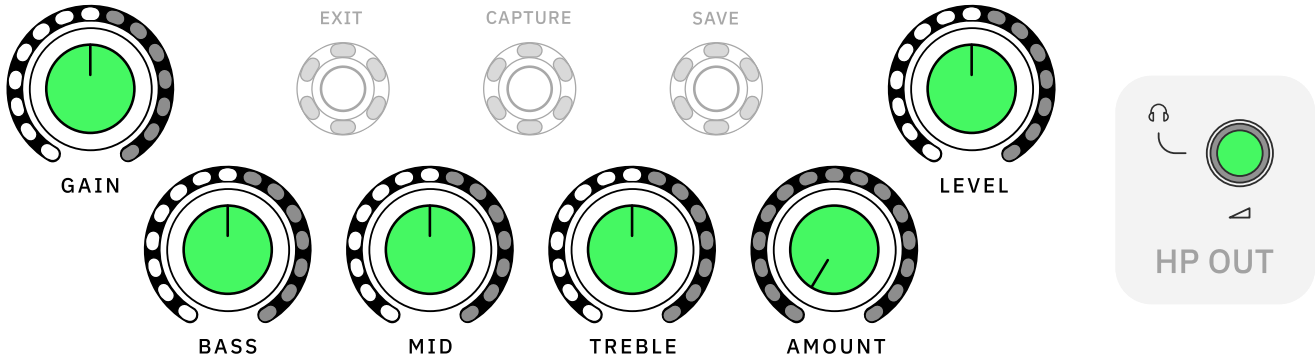
# Signal Path

Nano Cortex processes your signal through a fixed audio chain consisting of different slots that can be used separately or combined.

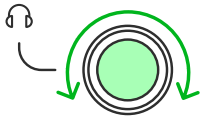


- 2 Pre-effect slots
- 1 Neural Capture slot
- 1 IR Loader slot
- 3 Post-effect slots

## Performance Mode Controls



- **GAIN:** Sets the amount of gain for the current Neural Capture.
- **BASS:** Sets the amount of bass frequencies for the current Neural Capture.
- **MID:** Sets the amount of middle frequencies for the current Neural Capture.
- **TREBLE:** Sets the amount of high frequencies for the current Neural Capture.
- **AMOUNT:** Controls the amount of the active effect that is added to the direct signal.
- **LEVEL:** Controls the master output volume (OUTPUTS 1L and 2R).

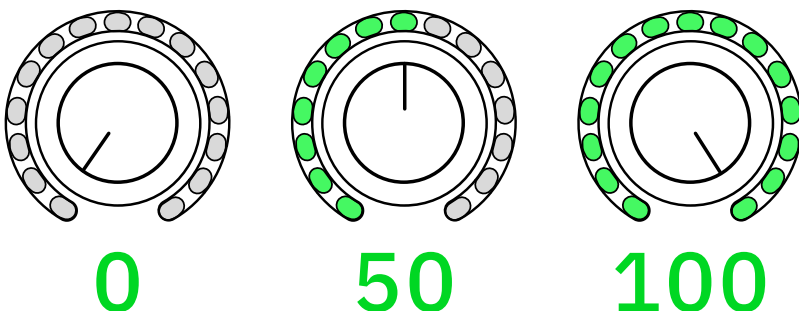


- **HP OUT:** Headphones output volume control.

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### KNOB OPERATION MODES

Turn the knobs clockwise or counterclockwise to change their values.



Nano Cortex's knobs are surrounded by LED rings, indicating their actual values regardless of the knobs' current positions.

By default, the Nano Cortex knobs adjust parameters immediately when turned. If the '**Catching Knobs Instantly**' setting is disabled on the Cortex Cloud app, Nano Cortex will operate in **Latching Mode**, where the knobs' position must match the values indicated by the LED rings before they start adjusting parameters.

## Knob Operation Modes

Change the knobs behavior in the Cortex Cloud settings.



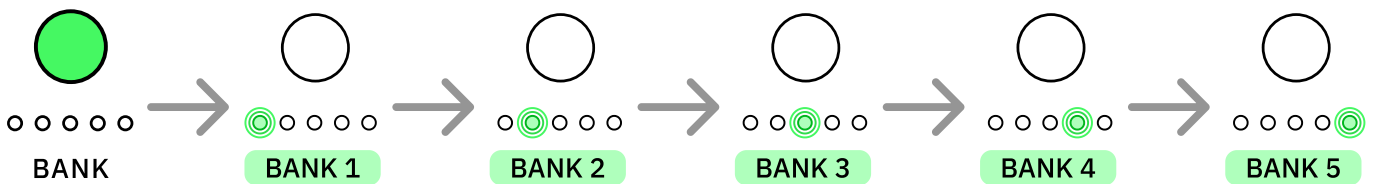


# Capture Library

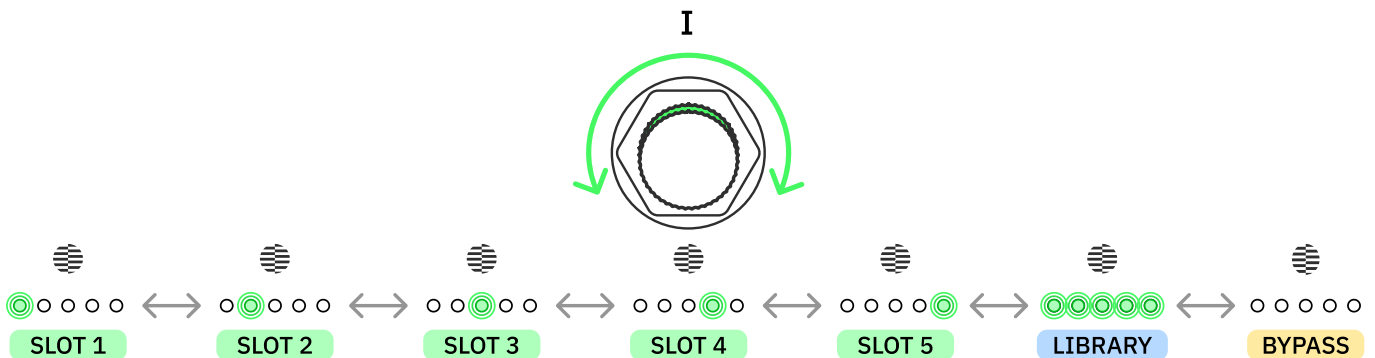
Nano Cortex includes **25 Factory Neural Captures** organized in 5 banks. Each bank can store up to 5 Neural Captures.

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## BANK/SLOT NAVIGATION



Press **BANK** to cycle Capture Banks. The LEDs will light up according to the bank selected.



Turn **Footswitch I** clockwise or counterclockwise to navigate Capture slots. The LEDs will light up according to the slot selected.

All the LEDs will turn on when using a Neural Capture from the library that is not currently assigned to any slot.

Navigate to the last position, where the LEDs are not lit, to bypass the Neural Capture.

## CORTEX CLOUD LIBRARY

In addition to the 25 Factory Neural Captures, Nano Cortex can store up to **256 User Neural Captures** that can be managed via the Cortex Cloud app.



## Downloading Content

Download Neural Captures and IR files via Cortex Cloud.

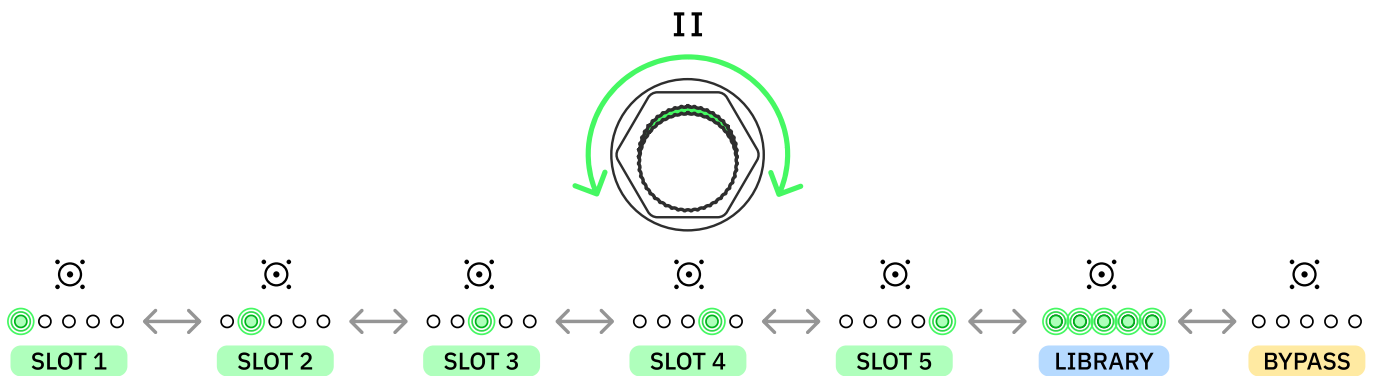


# IR Loader

Nano Cortex includes Factory Impulse Responses available via the 5 IR Loader slots.

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## IR NAVIGATION



Turn **Footswitch II** clockwise or counterclockwise to navigate IR Slots. The LEDs will light up according to the slot selected.

All the LEDs will turn on when using an IR from the library that is not currently assigned to any slot.

Navigate to the last position, where the LEDs are not lit, to bypass the IR Loader.

## CORTEX CLOUD LIBRARY

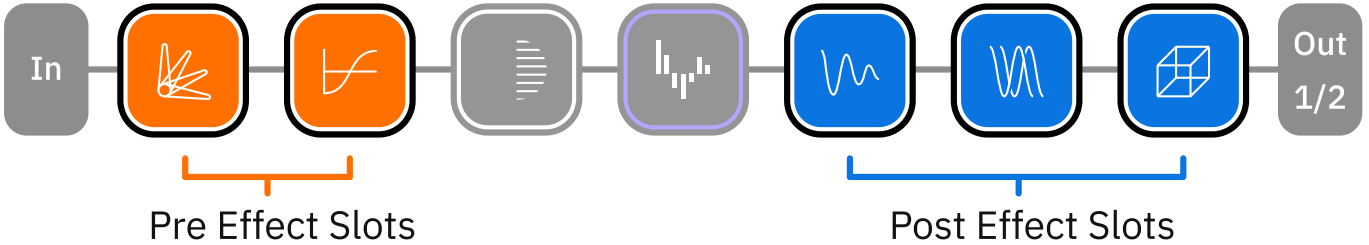
In addition to the 10 Factory Impulse Responses, Nano Cortex can store up to **256 User Impulse Responses** that can be added via the Cortex Cloud website. Uploaded IR files will be stored in the "*User Impulse Responses*" folder.

### Downloading Content

Download Neural Captures and IR files via Cortex Cloud.



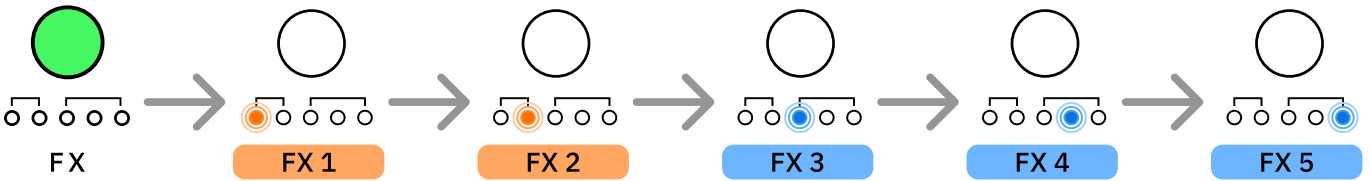
# Effects



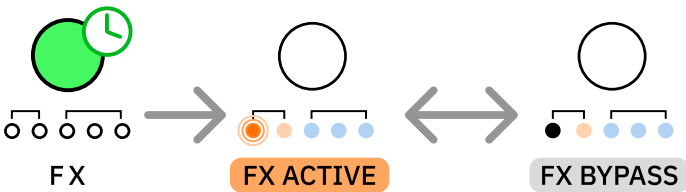
Nano Cortex includes **5 effect slots** that can be used separately or combined.

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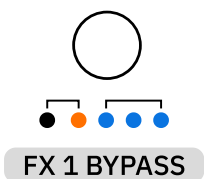
## EFFECT SLOTS NAVIGATION



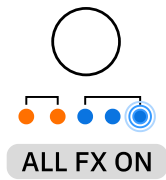
Press **FX** to cycle through effects slots. LEDs will blink indicating the slot that is currently selected.



Press-and-hold **FX** to bypass/engage the currently selected effect slot. The LEDs will turn on/off reflecting their current state:

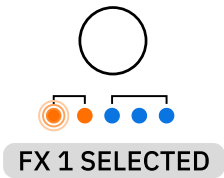


**Bypassed effect slots** will be turned off.



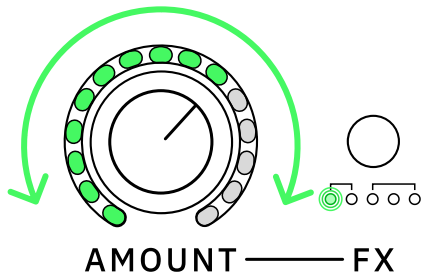
**Engaged effect slots** will be turned on.

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The **currently selected effect slot** will blink.

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Turn the **AMOUNT** knob clockwise or counterclockwise to change how much of the selected effect is applied.

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## AMOUNT KNOB BEHAVIOR

Depending on the effect slot selected, the AMOUNT knob will control different parameter values:

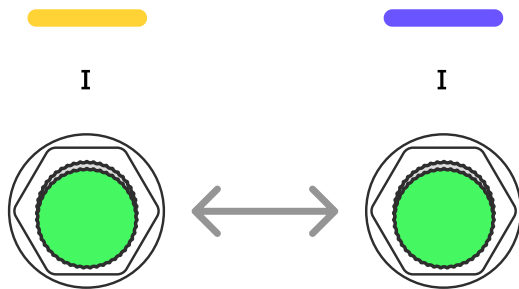
- **EFFECT 1:** Noise Gate. The AMOUNT knob will control the NOISE REDUCTION value.
- **EFFECT 2:** Transpose. The AMOUNT knob will control the SEMITONE value.
- **EFFECT 3:** Modulation. The AMOUNT knob will control the MIX value.
- **EFFECT 4:** Delay. The AMOUNT knob will control the MIX value.
- **EFFECT 5:** Reverb. The AMOUNT knob will control the MIX value.

# Switching & Saving Presets

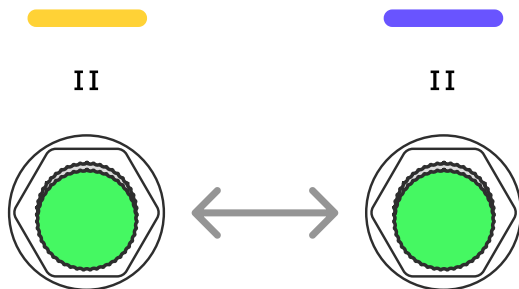
By default, Nano Cortex offers quick access to four Presets that can be customized without using the Cortex Cloud app.

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## SWITCHING PRESETS



Press **Footswitch I** to toggle between Presets **IA** and **IB**.



Press **Footswitch II** to toggle between Presets **IIA** and **IIB**.

Neural Capture, IR Loader, and Effect slots will update their values accordingly. Different Presets can be configured on the Cortex Cloud app.

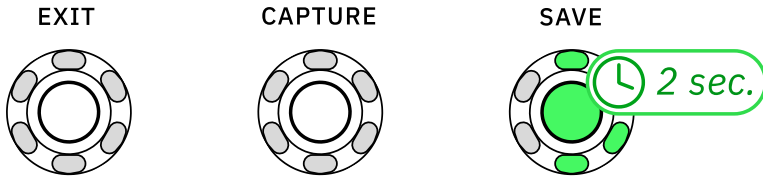
### Footswitches Behavior

Presets on Nano Cortex are recalled when the footswitches are released, not when pressed.

This behavior enhances flexibility and control by allowing each footswitch to have multiple functions based on the duration of the press. For instance, a simple press-and-release recalls a Preset, while holding a footswitch triggers a secondary function, such as opening the Tuner.

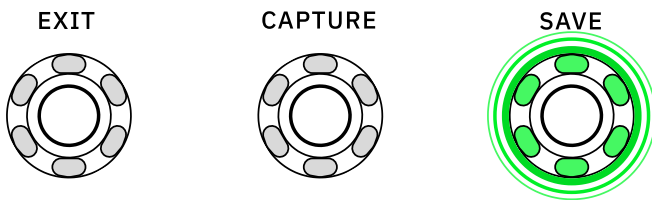


## SAVING PRESETS

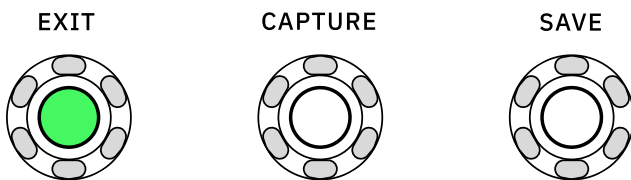


Press-and-hold **SAVE** for 2 seconds to overwrite the current Preset settings.

## UNSAVED CHANGES



The **SAVE** LED ring will blink slowly whenever the current active Preset has unsaved changes.



Press **EXIT** to undo unsaved changes.

### Footswitch Assignments

Customize and assign Presets on the Cortex Cloud app.

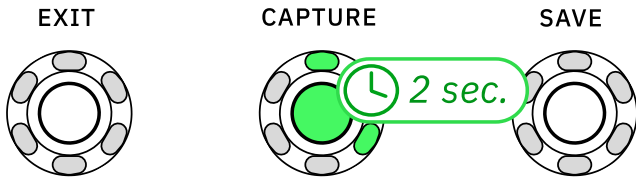


### Preset Operation Modes

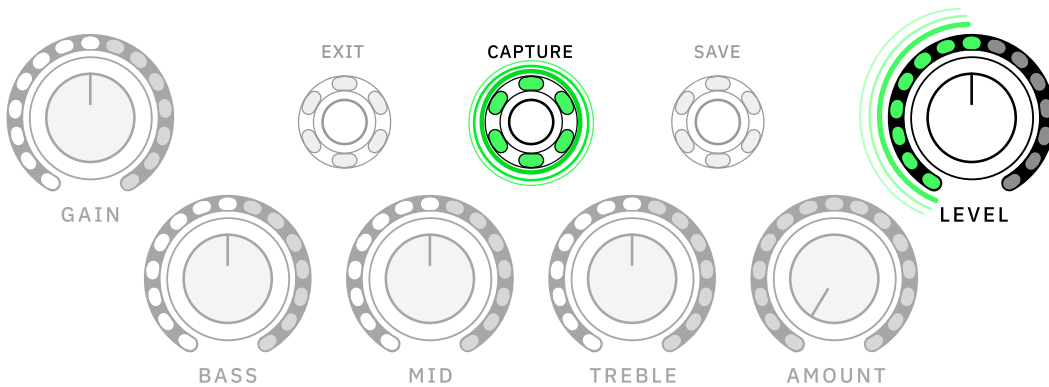
Switch between 4-Preset and 2-Preset modes via Cortex Cloud.



# Capture Volume

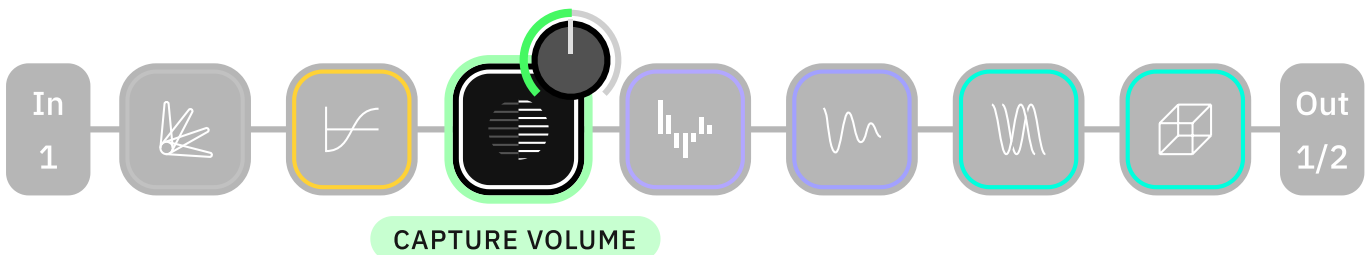


Press-and-hold **CAPTURE** for 2 seconds to enter Capture Volume Mode.



In this mode, the **CAPTURE** and **LEVEL** LED rings blink slowly.

## LEVEL KNOB BEHAVIOR



Turn the **LEVEL** knob to control the output volume of the Capture in the signal chain from -24dB to +12dB (0.0dB by default).

The **LEVEL** knob will operate in **Latching Mode**. Its position must match the value indicated by its LED ring before it starts adjusting the volume.

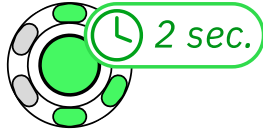
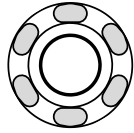
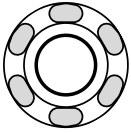




EXIT

CAPTURE

SAVE



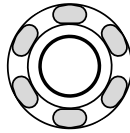
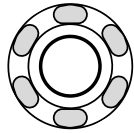
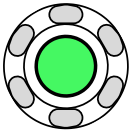
Press-and-hold **SAVE** for 2 seconds to overwrite the current Preset settings.

---

EXIT

CAPTURE

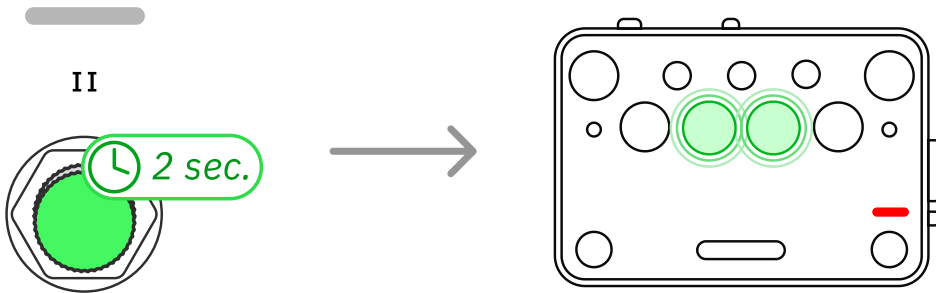
SAVE



Press **EXIT** to deactivate Capture Volume Mode.

# Tuner

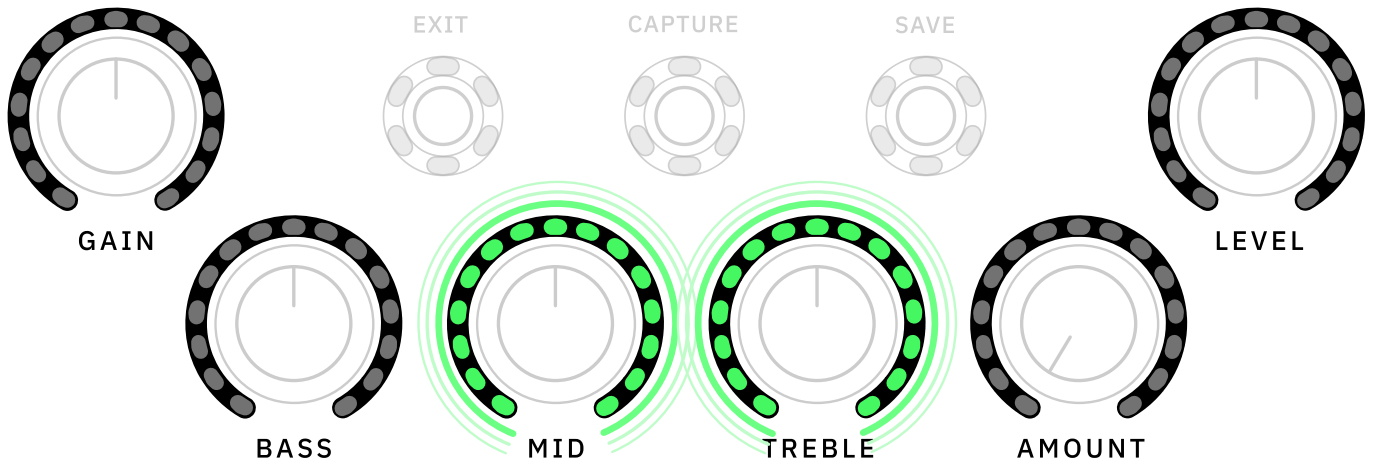
Nano Cortex features a chromatic tuner. It works by detecting the note being played and then displaying its pitch deviation on the LED rings.



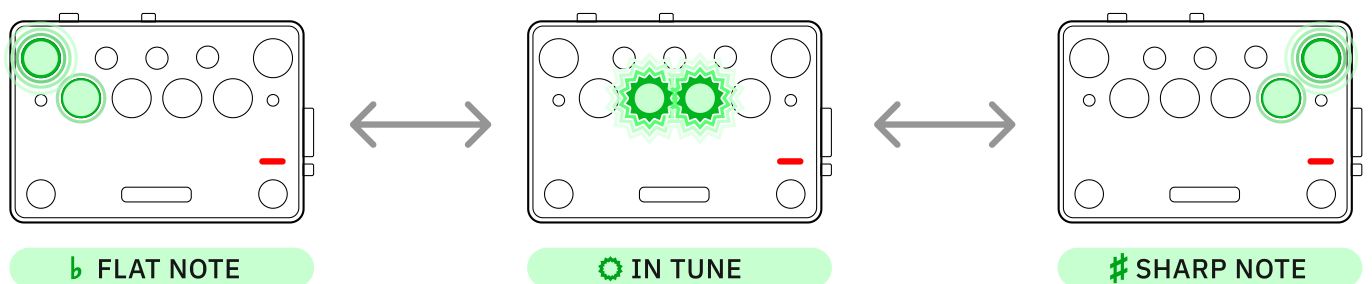
While in Performance Mode, press-and-hold **Footswitch II** to access the Tuner.

...

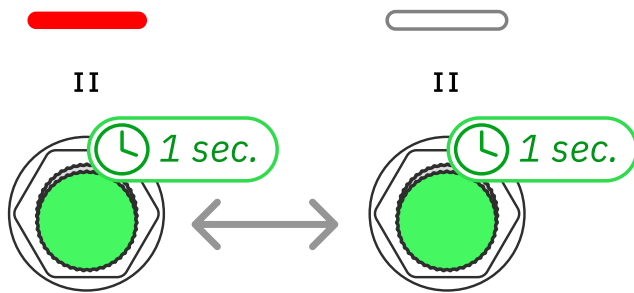
## TUNING DISPLAY



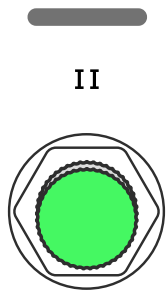
The **GAIN, BASS, MID, TREBLE, AMOUNT**, and **LEVEL** LED rings will illuminate when a note is played, creating a crossfade animation that reflects the current pitch of the note (-/+ 50 cents).



The crossfade moves towards the left when the note is flat and to the right when it is sharp. When the note is in tune, **MID** and **TREBLE** will blink quickly.



Press-and-hold **Footswitch II** for 1 second to **mute/unmute** the input signal when the Tuner is engaged.



Press **Footswitch II** to exit the Tuner.

### Tuner Synchronization

When the Tuner is engaged on the Nano Cortex, it will automatically display on the Cortex Cloud app. Similarly, opening the Tuner on the Cortex Cloud app will activate it on the Nano Cortex.

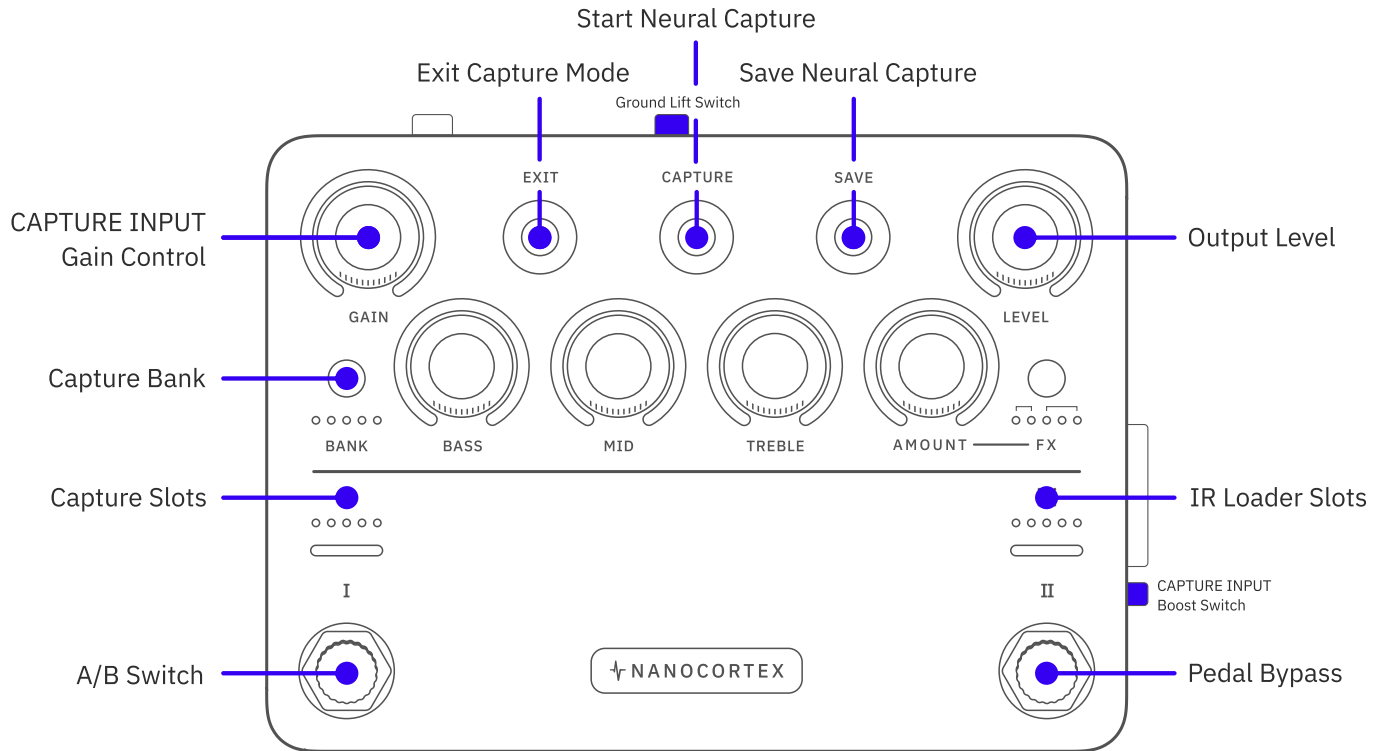


### Tuner Display on the Cortex Cloud App

Click to check how the Tuner works on the Cortex Cloud app.

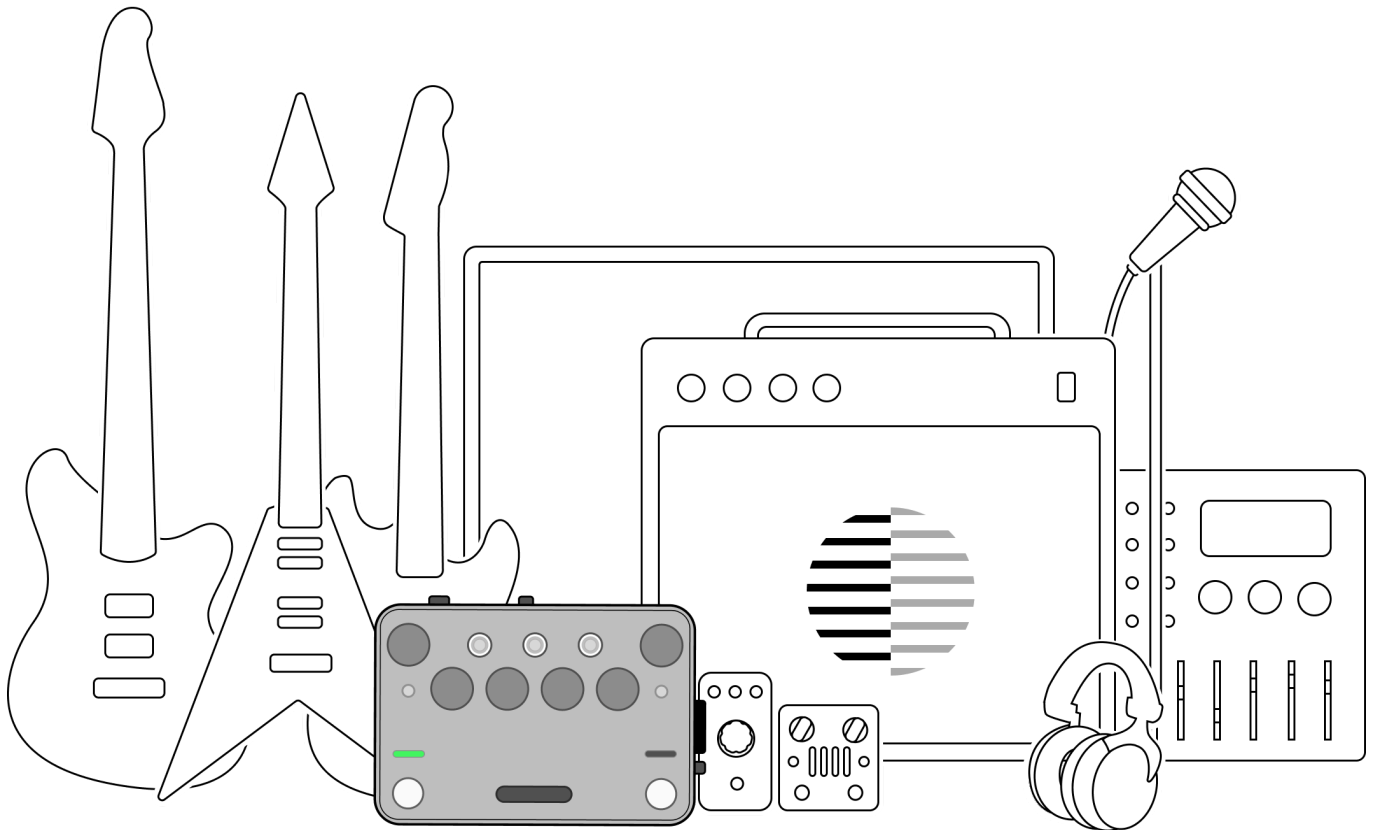


# 05 Capture Mode



# What is Neural Capture?

Neural Capture is a powerful tool that can learn and replicate the sonic characteristics of any amplifier, cabinet, or overdrive pedal with unprecedented accuracy and realism.



Creating a new Neural Capture is a procedure that can be completed on Nano Cortex without using the Cortex Cloud app.

To create a Neural Capture, you need to be able to connect an overdrive pedal, mic up a cabinet, or connect an amplifier via a reactive load box.

Neural Capture is a snapshot of a real device setup including the microphone, therefore the placement of the microphone with respect to the cabinet is also something you need to consider.

Nano Cortex's CAPTURE INPUT supports **dynamic microphones**. Condenser microphones will need an external preamp to be powered.

## TUBE AMPLIFIER WARNING

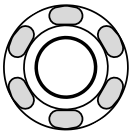
Connecting the speaker output of a tube amplifier straight to Nano Cortex could **damage** both devices. Ensure you either use:

- A **D. I. Out** and your amplifier is still connected to a cabinet.
- A **Reactive Load Box** between the target device and Nano Cortex.

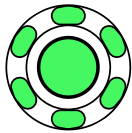


## Capture Mode Access

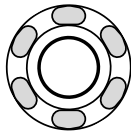
EXIT



CAPTURE

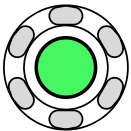


SAVE

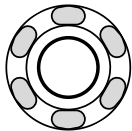


Press **CAPTURE** to access Capture Mode. In this mode, the CAPTURE LED ring will stay on.

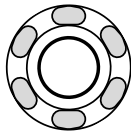
EXIT



CAPTURE



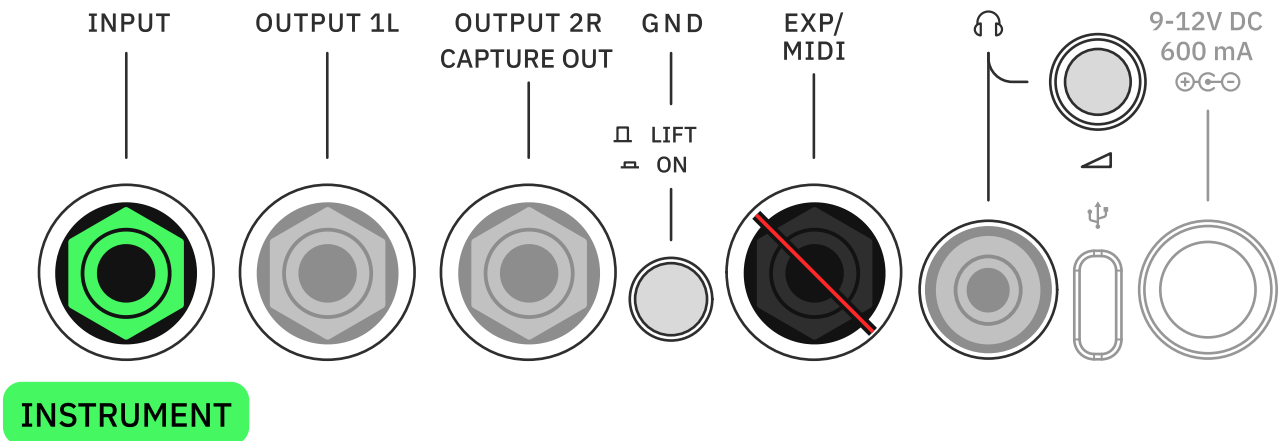
SAVE



Press **EXIT** to return to Performance Mode.

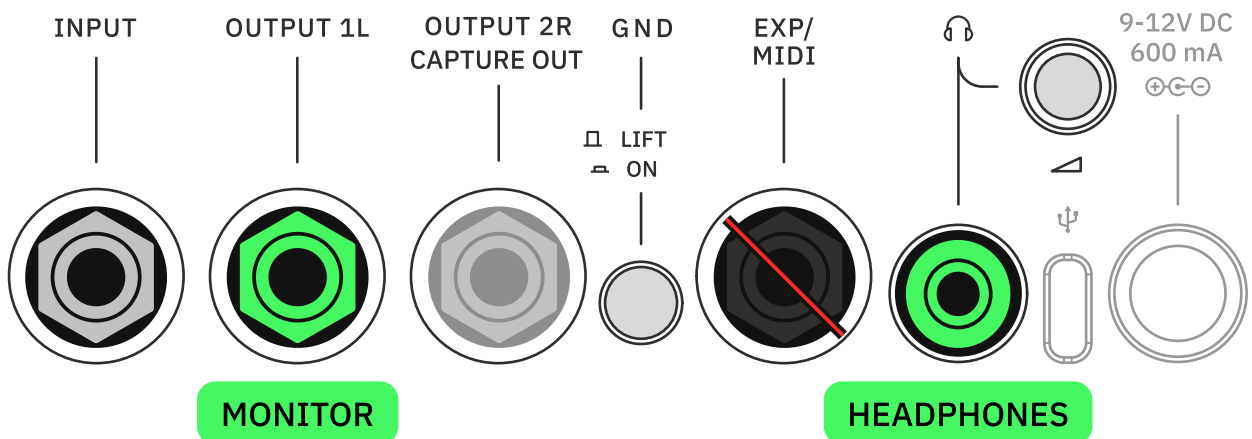
# Connection Diagram

## 01 REFERENCE INSTRUMENT



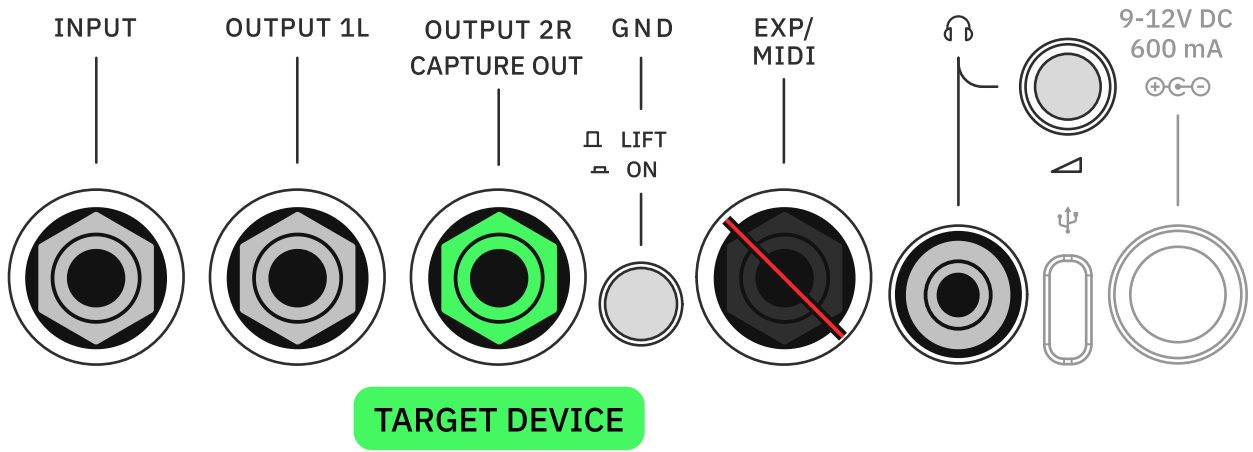
Connect your instrument to **INPUT 1**.

## 02 MONITORING DEVICES



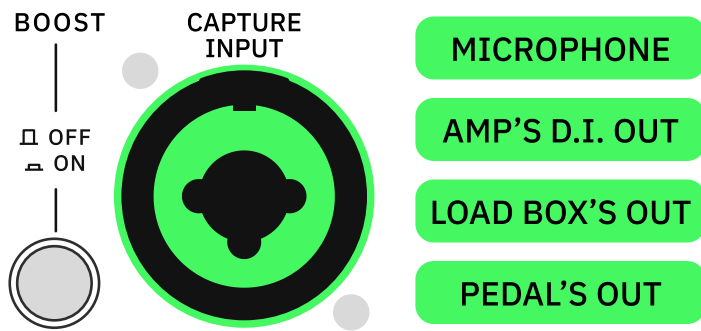
Connect your headphones to **HP OUTPUT** or your Monitor Speaker to **OUTPUT 1L**.

## 03 TARGET DEVICE

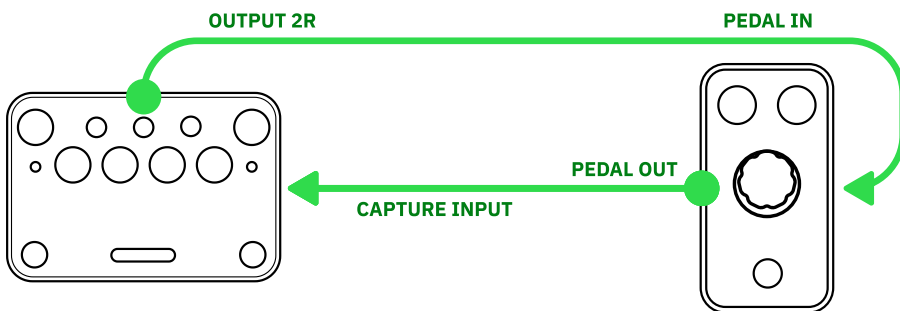


Connect the Nano Cortex's **CAPTURE OUT (OUTPUT 2R)** to the target device's input.

#### 04 RETURN TO NANO CORTEX



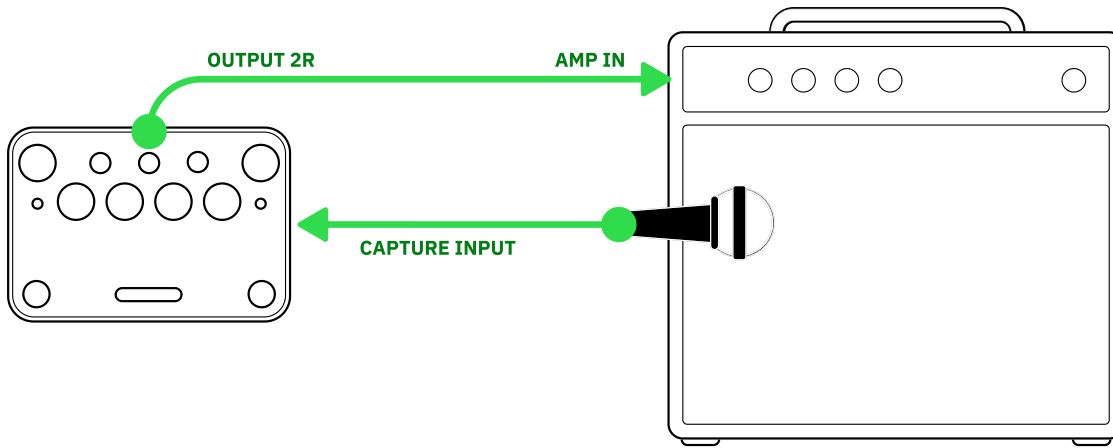
#### OVERDRIVE PEDAL



If you are capturing an overdrive pedal, connect its output directly to the Nano Cortex's **CAPTURE INPUT**.

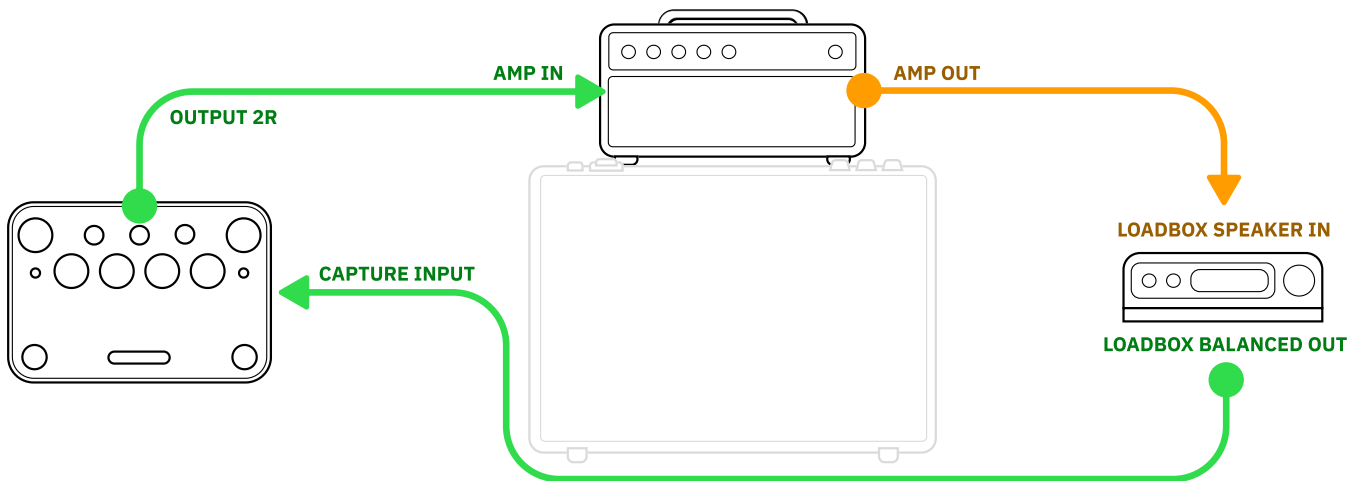
#### AMP+CAB / COMBO AMP





Position a microphone in front of the speaker cabinet and connect it to Nano Cortex's CAPTURE INPUT. Nano Cortex's **CAPTURE INPUT** supports dynamic microphones. Condenser microphones need an external preamp to be powered.

### AMP HEAD (NO SPEAKER)



If you are capturing an amplifier without built-in speakers or just an amp head, connect the amp's 'Speaker Output' to a **Reactive Load Box**. Then, connect the Load Box's balanced output to the Nano Cortex's **CAPTURE INPUT**.

## 05 SETUP REVIEW

Once everything is connected correctly, you can proceed with the calibration settings.

# Neural Capture Calibration Settings

Capture Mode will give you access to the calibration settings.

Ensure the microphone position (if you are using a microphone in front of a speaker cabinet) and the target device's settings are set as desired, and the **GAIN** knob on the Nano Cortex is at the minimum position (0%).

...

## MAIN CONTROLS

- **GAIN**: Turn it clockwise to increase the CAPTURE INPUT gain up to +24dB. Its LED ring is a meter that measures the CAPTURE INPUT
- **LEVEL**: Controls the overall output volume of the Nano Cortex (OUTPUT 1L and 2R).
- **FOOTSWITCH II**: Turn it clockwise or counterclockwise to navigate IR slots. The LEDs will light up according to the slot selected. Navigate to the last position, where the LEDs are not lit, to bypass the IR Loader.
- **CAPTURE**: Press-and-hold for 3 seconds to begin the Capture process.

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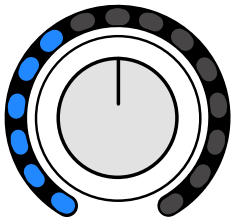
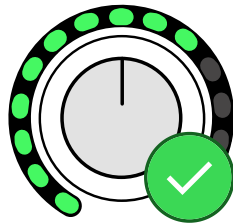
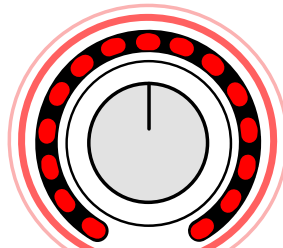
## ADDITIONAL CONTROLS

- **HP LEVEL**: Headphones output volume control.
- **GND SWITCH**: Toggles ON/OFF the ground lift on OUTPUTS 1L and 2R. This feature helps to reduce unwanted noise by interrupting the ground loops coming from external sources.
- **BOOST SWITCH**: Toggles ON/OFF the analog boost circuit. When enabled, it boosts the CAPTURE INPUT +26dB.

...

## GAIN KNOB BEHAVIOR

In Capture Mode, the GAIN LED ring is a meter that measures the CAPTURE INPUT.

**GAIN**LOW CAPTURE  
INPUT LEVEL**GAIN**CORRECT CAPTURE  
INPUT LEVEL**GAIN**CAPTURE INPUT  
CLIPPING

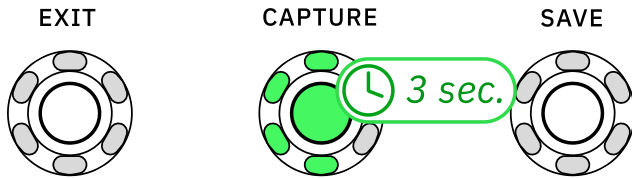
- The GAIN LED ring will turn **green** when the CAPTURE INPUT level is healthy.
- The GAIN LED ring will turn **blue** when the CAPTURE INPUT level is too low. Increase the GAIN or turn on the BOOST switch to compensate for the low level.
- The GAIN LED ring will turn **red** and blink when the CAPTURE INPUT level is clipping. Turn off the BOOST switch or reduce the output level of the target device until the signal level is correct (Green LEDs).

### ANALOG BOOST WARNING

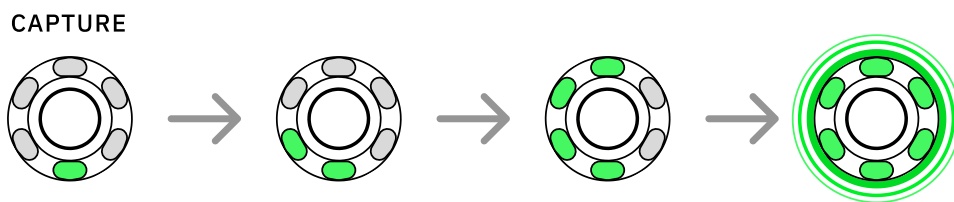
Ensure the **GAIN** knob is set to its **minimum position (0%)** before engaging the BOOST switch.



# Capture Process



Press-and-hold **CAPTURE** for 3 seconds to begin the Capture process. Alternatively, press **EXIT** to return to Performance Mode.



The CAPTURE LED ring will light up progressively as soon as the process begins. The Capture process takes around **5 minutes**.

The Nano Cortex will measure the latency of the target device and deliver recorded signals that will be used for modeling. After the sanity check, Nano Cortex will train a neural network to emulate the tone and dynamic response of the target device.

Once the training process is complete, you will be able to test and save your Neural Capture.

# Testing & Saving a Neural Capture

Once the Capture is completed, you can A/B compare the Capture and the target device.

## Neural Capture Metadata

Add metadata to your Neural Captures on the Cortex Cloud app.



...

## Neural Capture Testing



### A/B SWITCHING

Press **Footswitch I** to toggle between the **Neural Capture** and the **Target Device**.

Footswitch I's LED bar turns green indicating that you are playing through the recently created Neural Capture. Footswitch I's LED bar turns off indicating that you are playing through the target device.

### IR LOADER

When auditioning a recently created Neural Capture, turn **Footswitch II** clockwise or counterclockwise to navigate IR slots. The LEDs will light up according to the slot selected.

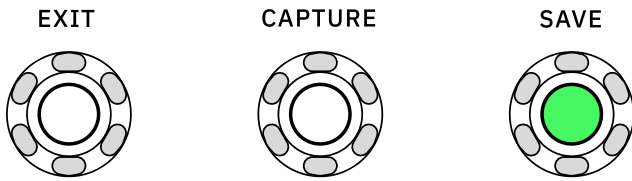
Navigate to the last position, where the LEDs are not lit, to bypass the IR Loader (*Recommended when auditioning a Capture that includes a speaker cabinet*).

### PEDAL BYPASS

Press **Footswitch II** to bypass the Nano Cortex.

...

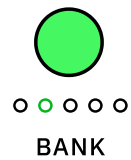
## Saving a Neural Capture



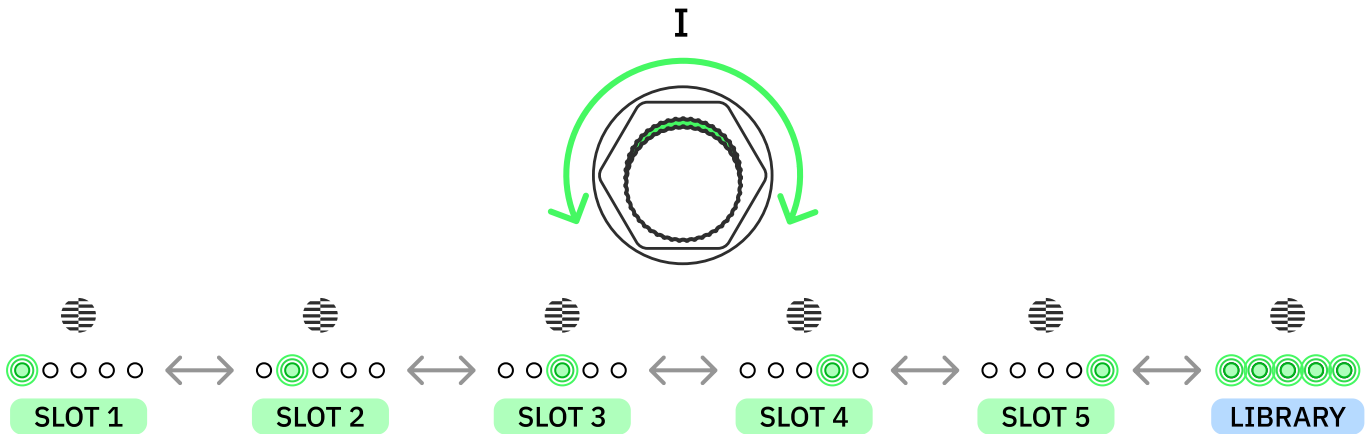
Press **SAVE** to store the recently created Capture.

## SAVING DESTINATION

The **BANK** and **Capture Slots** LEDs will blink indicating that you can select a slot to store your recently created Capture.

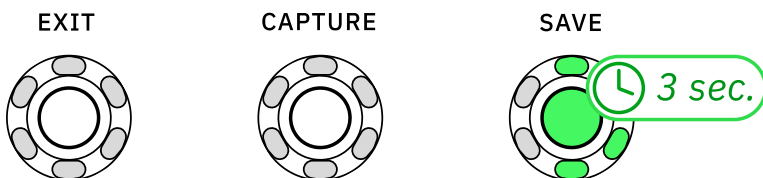


Press **BANK** to cycle Capture banks.



Turn **Footswitch I** clockwise or counterclockwise to navigate Capture slots.

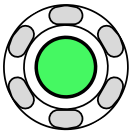
The position where all LEDs are lit corresponds to the **User Library**. Choose this location to save the recently created Neural Capture without assigning it to any slot.



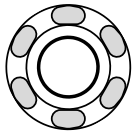
Press-and-hold **SAVE** for 3 seconds to store your Neural Capture in the selected slot.

## RETURN TO CALIBRATION SETTINGS

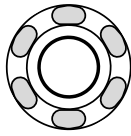
EXIT



CAPTURE



SAVE

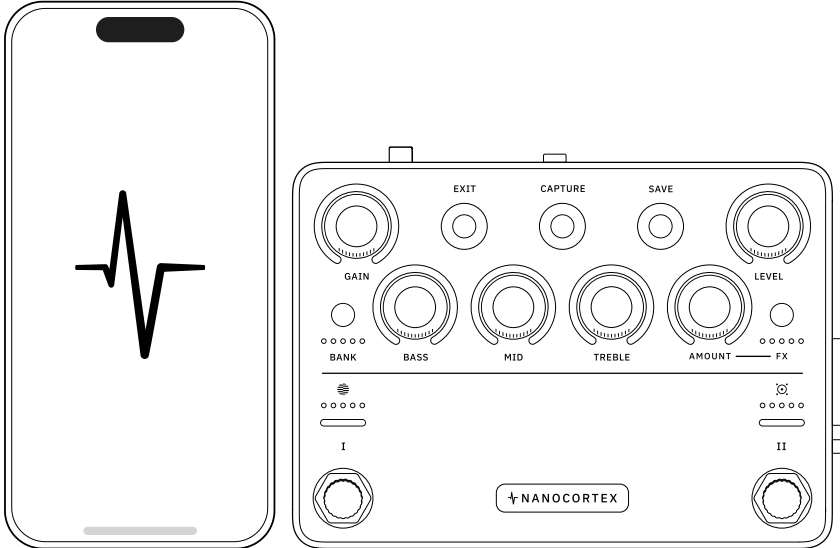


Press **EXIT** to return to the calibration settings and start a new Capture process.

Press **EXIT** again to return to Performance Mode.

# 06

## Cortex Cloud App



## Cortex Cloud Features

Deeper Preset customization and additional features are available via the Cortex Cloud app:

- Deeper Preset customization
- Additional Preset slots
- Additional IR Loader settings
- Impulse Responses Library
- Neural Capture metadata
- Thousands of Neural Captures from the community



# Bluetooth Pairing

## BLUETOOTH ACCESS

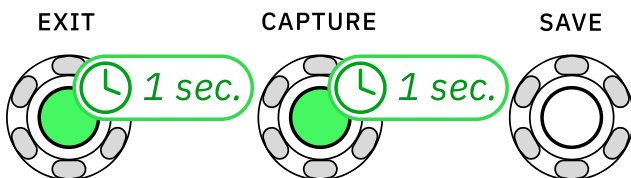
Cortex Cloud uses Bluetooth to pair with your Nano Cortex. First, allow Bluetooth access for the Cortex Cloud app in your smartphone's settings.

...

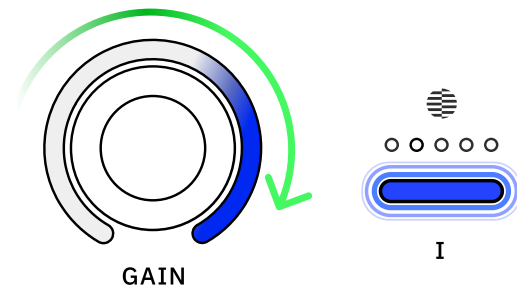
## PAIRING DEVICES



Open the Cortex Cloud app on your smartphone, access the **Devices** menu, and tap **Add New**. Your smartphone will start searching for nearby Nano Cortex units.



Press-and-hold **EXIT** and **CAPTURE** for 1 second to put your Nano Cortex into Pairing Mode.



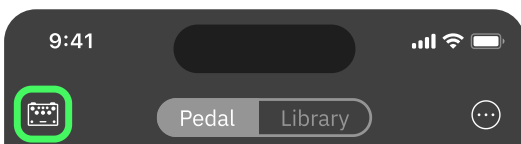
The GAIN LED ring will illuminate clockwise and Footswitch I's LED will blink slowly, indicating that Nano Cortex is in Pairing Mode.



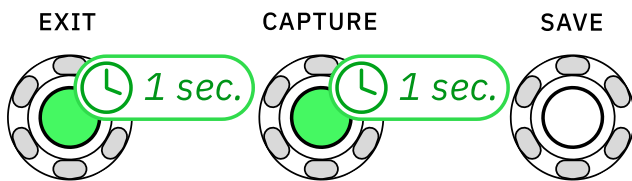
Once paired, the app will show the current Nano Cortex configuration.

...

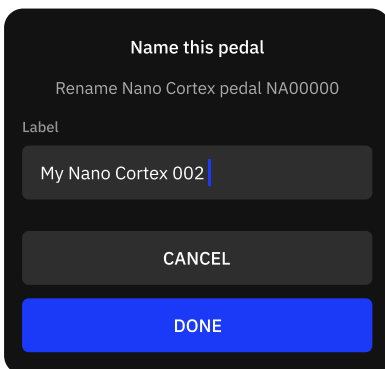
## PAIRING A SECOND NANO CORTEX



Go to the **Devices** menu and tap **Add New**. Your smartphone will start searching for nearby Nano Cortex units.



Press-and-hold **EXIT** and **CAPTURE** for 1 second to put your Nano Cortex in Pairing Mode.

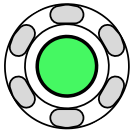


Once paired, you can **rename** your Nano Cortex unit for future reference.

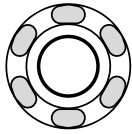


After that, the app will show the current Nano Cortex configuration.

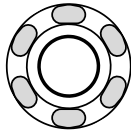
EXIT



CAPTURE

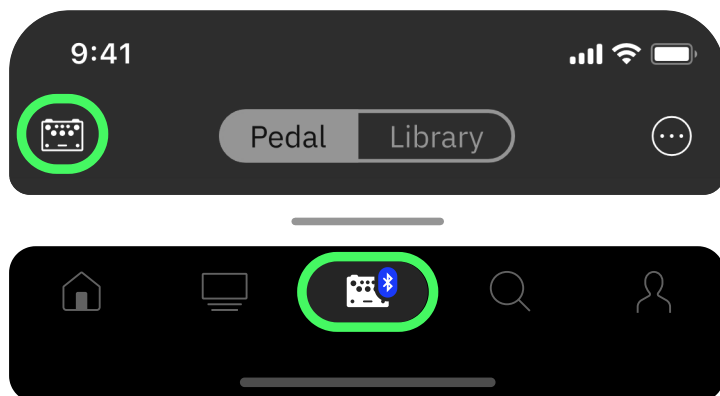


SAVE



During Pairing Mode, press **EXIT** to return to Performance Mode if you no longer want to pair your device.

## Devices Screen



Select the Neural DSP device you are currently using. Cortex Cloud will show only content compatible with your selection:

- **QUAD CORTEX:** Cortex Cloud will show Quad Cortex-compatible content, such as Presets, Neural Captures, and Users.
- **NANO CORTEX:** Cortex Cloud will show Nano Cortex-compatible content, such as Neural Captures and Users.

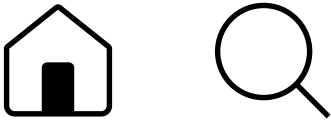
# Downloading Content



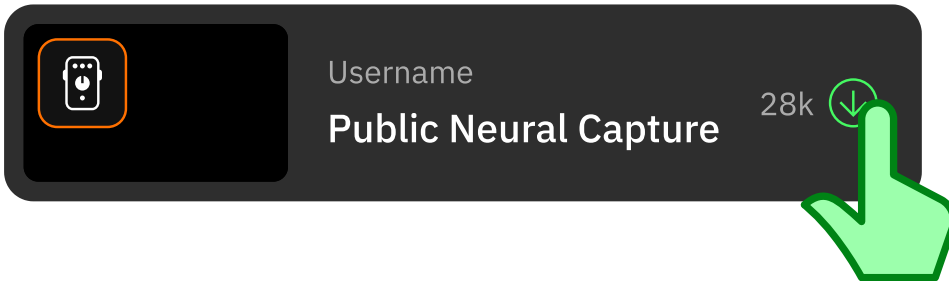
Ensure you have selected **Nano Cortex** in the Devices screen.

...

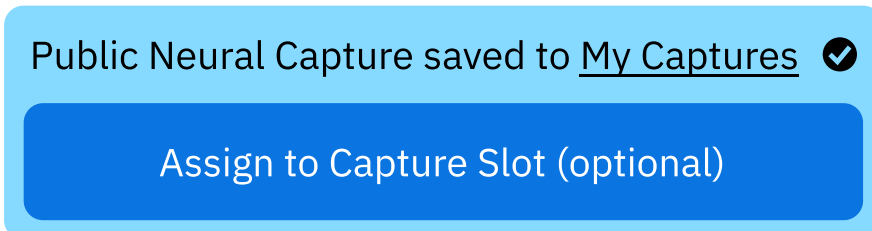
## NEURAL CAPTURES



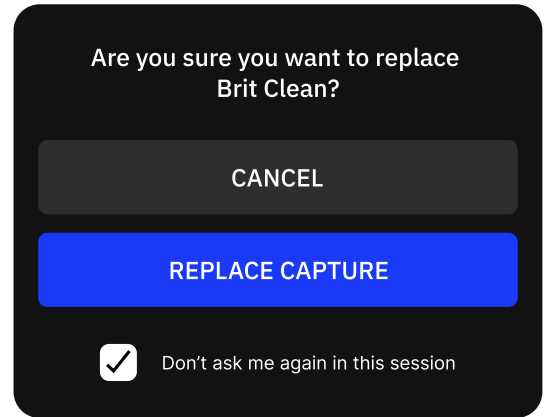
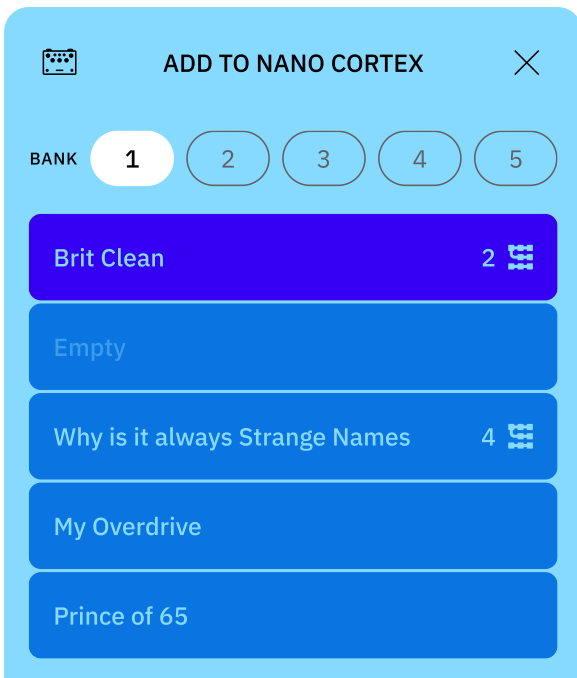
Search for Neural Captures via Cortex Cloud.



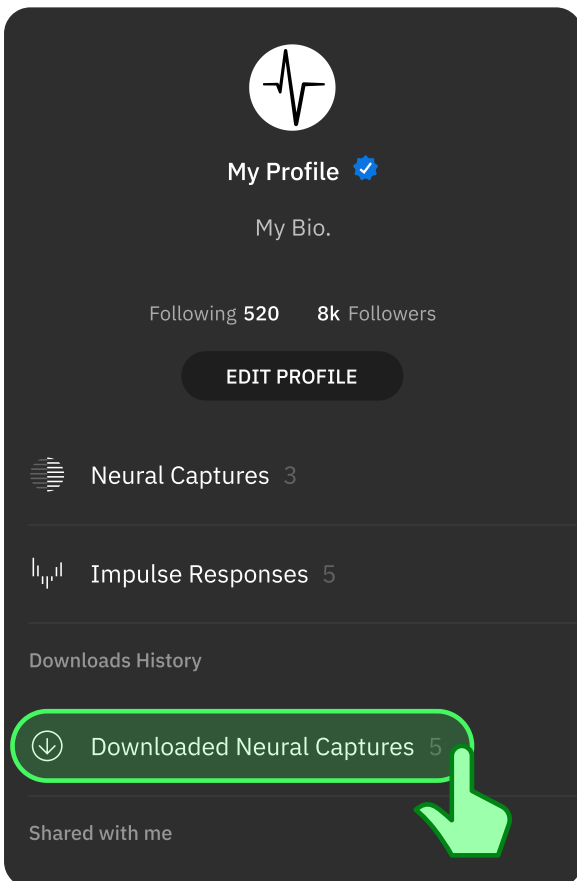
Tap the download button next to the Neural Capture.



The Neural Capture will then be downloaded to the Library. Alternatively, you can assign it to a bank and slot.



Assigning a Neural Capture to an occupied slot will replace the currently assigned Neural Capture.



Neural Captures downloaded while Nano Cortex is offline will be stored in the **Downloads History** under your Profile.

...

## UPLOADING IMPULSE RESPONSES

Impulse Responses can be added to your Profile via the Cortex Cloud Website.

- 1 Go to <https://cloud.neuraldsp.com/cloud>
- 2 Access your Profile on Cortex Cloud.
- 3 Go to the **IMPULSE RESPONSES** section.
- 4 Drag-and-drop IR files from your computer to the upload area. Alternatively, click **BROWSE** to search for custom locations.

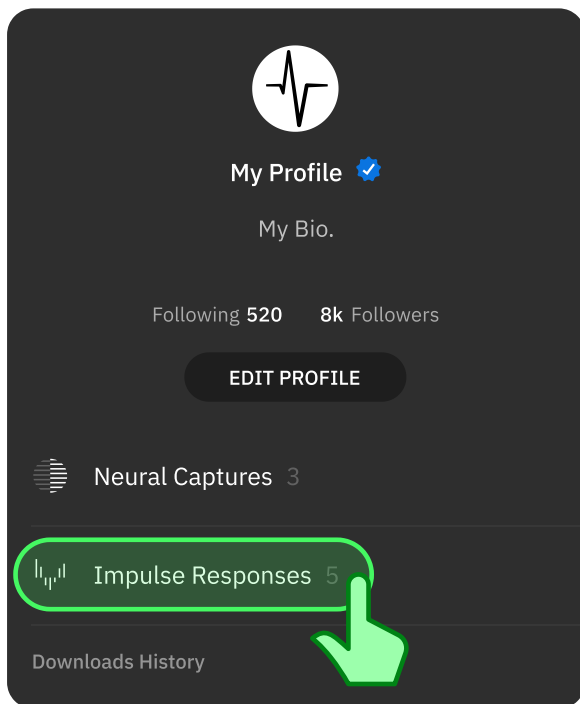
### Impulse Response Compatibility

Any compatible WAV file can be uploaded to the Cloud no matter its length. Files will be resized to **1024 samples** after being uploaded (~21 milliseconds).

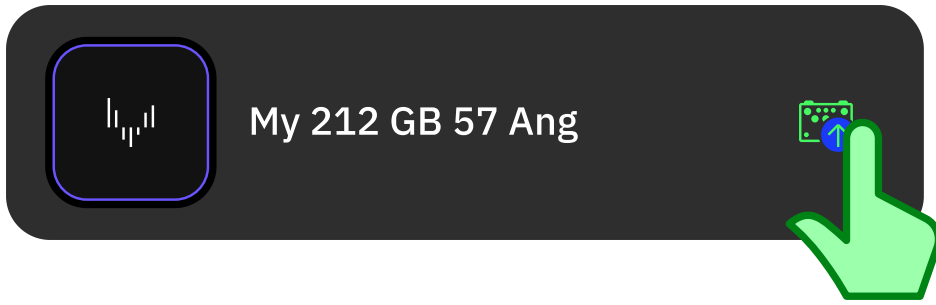


...

## ADDING IMPULSE RESPONSES



Access your Profile and tap **Impulse Responses**.



Tap the button next to the IR files to download them to your Nano Cortex.



# Presets Library

Nano Cortex can store up to 64 Presets that can be assigned to **Footswitch I** and **II** or triggered via MIDI.

FOOTSWITCH ASSIGNMENTS

IA Brit 2203 ⋮

IB Lead Chorus

IIA Drop D

IIB My Combo Amp

SHOW ALL PRESETS

ALL PRESETS

IA Brit 2203 1 ⋮

IB Lead Chorus 2 ⋮

IIA Drop D 3 ⋮

IIB My Combo Amp 4 ⋮

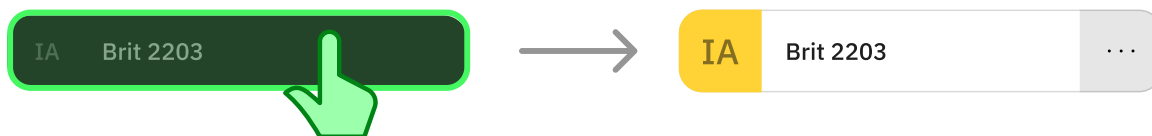
↶ Clean Amp 5 ⋮

Empty

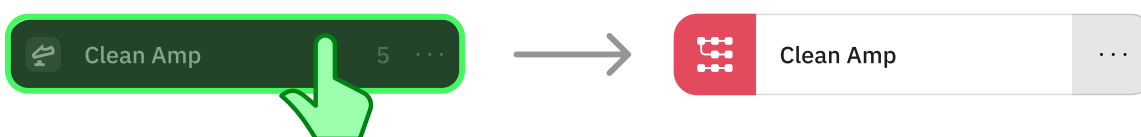
**SHOW ALL PRESETS** will display all the Preset slots on a single screen.

...

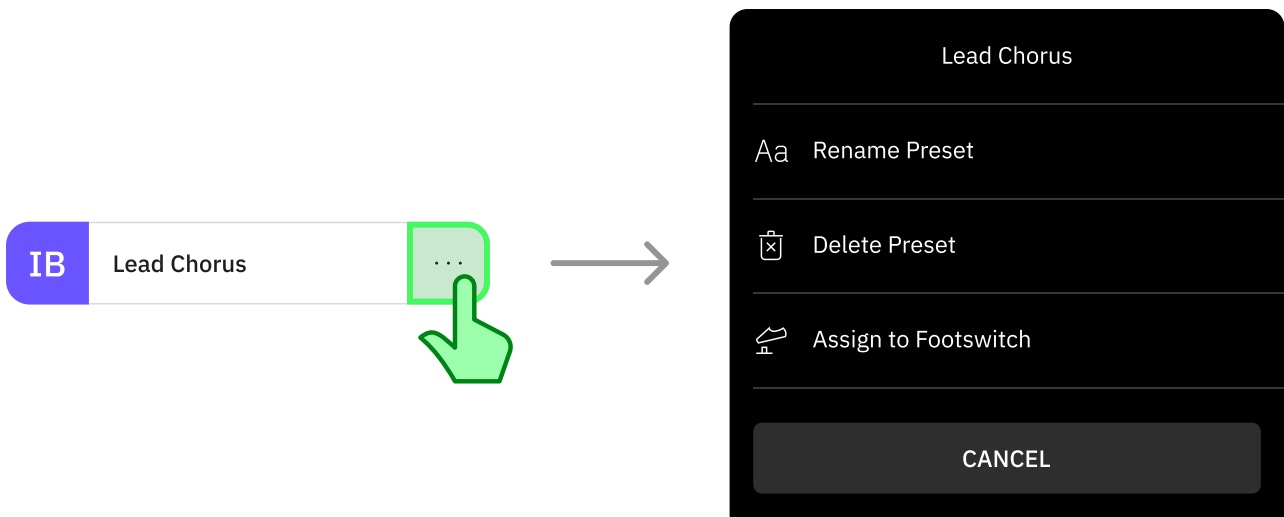
## PRESETS WORKFLOW



Tap a Footswitch-assigned Preset to load it.



Tap an unassigned Preset to load it. **Footswitch I** will turn red indicating the current Preset is not assigned to any Footswitch.

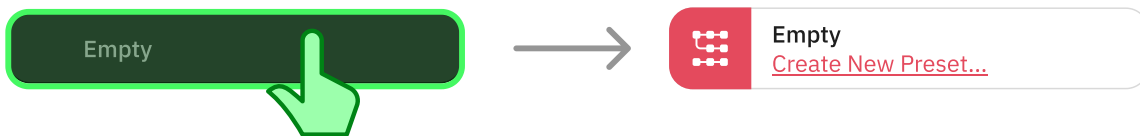


Tap the **button** to the right of any Preset to access its contextual menu:

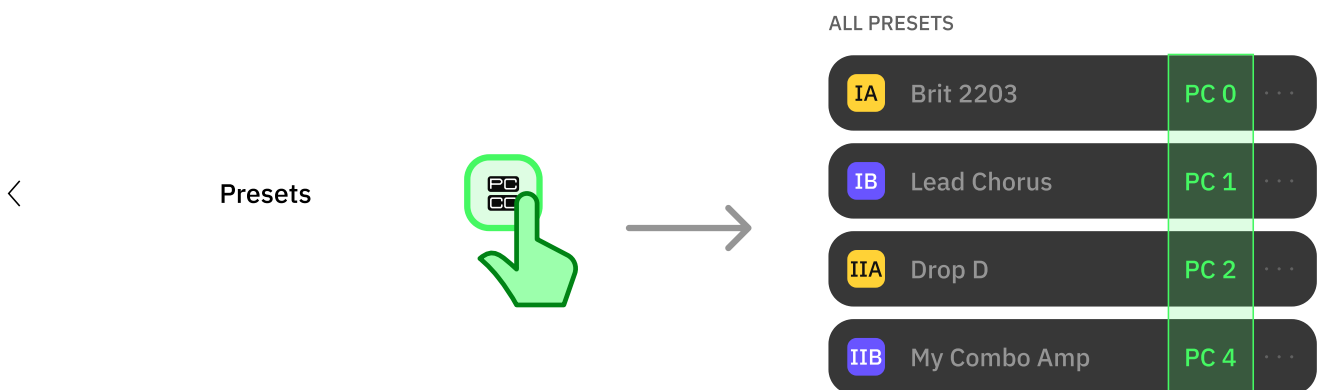
- **RENAME PRESET:** Tap to rename the selected Preset.
- **DELETE PRESET:** Tap to delete the selected Preset.
- **ASSIGN TO FOOTSWITCH:** Tap to assign or reassign the selected Preset to any Footswitch.



You can assign a single Preset to multiple footswitches simultaneously.



Tap an empty Preset to load it. Alternatively, tap **Create New Preset...** to create a new Preset from scratch. Select at least one device and tap **SAVE**.

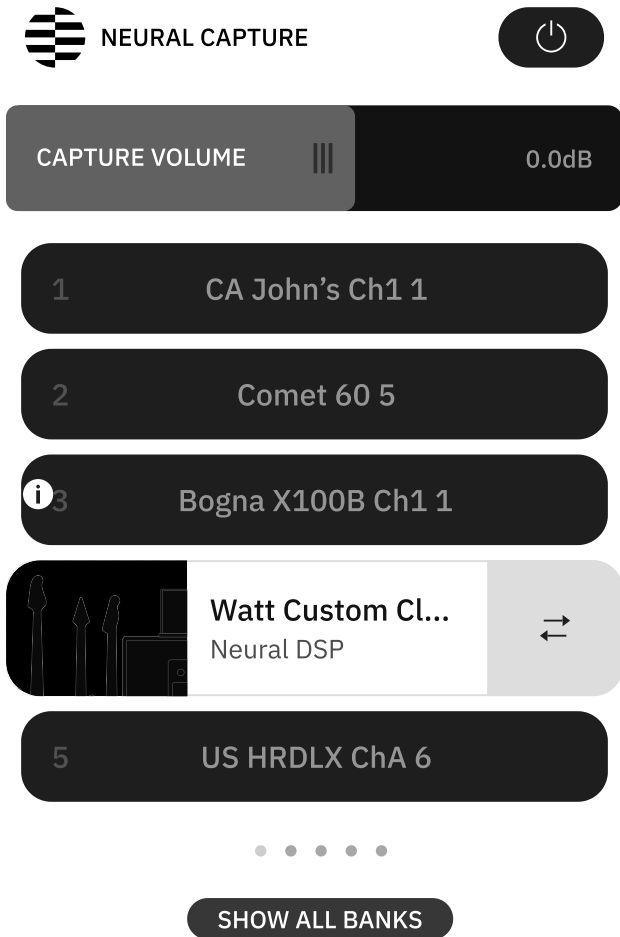


Tap the **PC/CC** button at the top-right corner to toggle the PC messages view in the Presets list.



# Neural Capture Library

Nano Cortex includes 25 Factory Neural Captures organized in 5 banks. Each bank can store up to 5 Neural Captures.



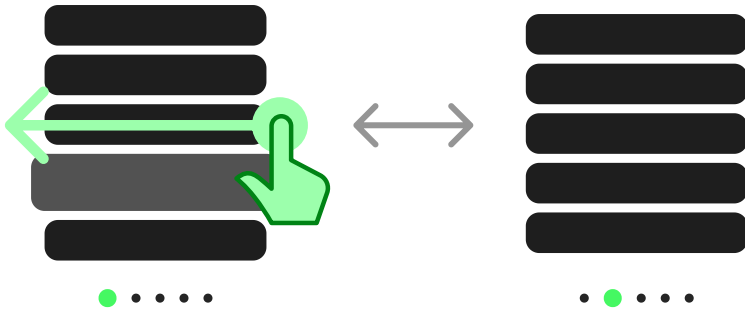
**SHOW ALL BANKS** will expand all the Capture banks on a single screen.

...

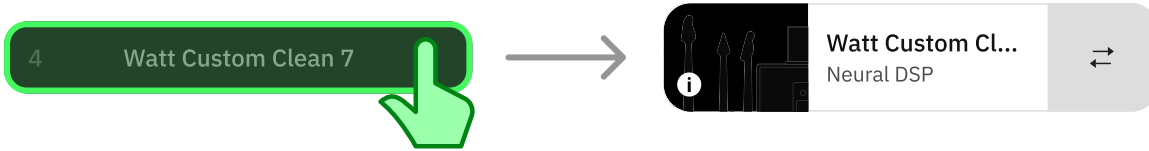
## NEURAL CAPTURE LIBRARY WORKFLOW



Drag the **CAPTURE VOLUME** slider to control the output volume of the currently active capture slot (-24dB to +12dB).



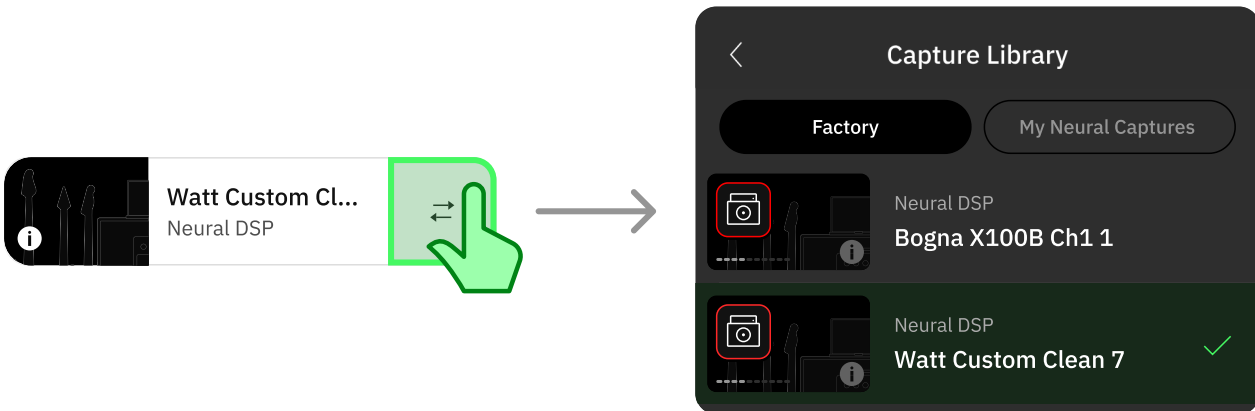
Swipe horizontally to navigate Capture banks.



Tap an inactive **Capture slot** to activate it.



Tap an **active Capture slot** to access its details screen.



Tap the **swap button** to the right of an active Capture slot to access the Capture Library and replace the currently loaded Neural Capture.



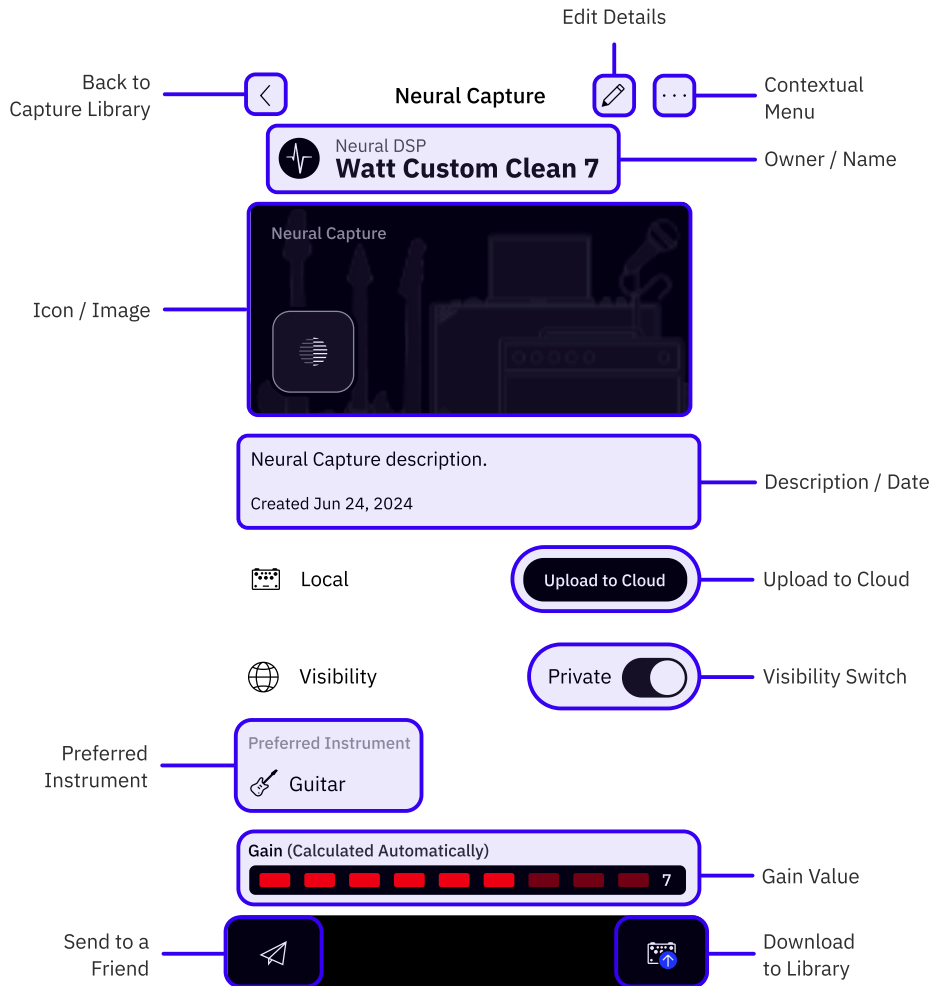
Tap a Neural Capture to audition it. Tap **USE** to load it in the current slot.



Tap the **Bypass** button to bypass the Neural Capture module.

...

### NEURAL CAPTURE DETAILS SCREEN



- **EXIT:** Tap to return to the Capture Library.
- **EDIT:** Tap to edit the details of the current Neural Capture. Not available when checking Neural Captures from other users.
- **CONTEXTUAL MENU:** Tap to DELETE or SHARE the current Neural Capture.
- **OWNER/NAME:** Tap to access the Neural Capture owner's profile.
- **ICON/COVER:** Neural Capture's icon and custom cover photo are shown here.
- **DESCRIPTION FIELD:** Neural Capture description and creation date.
- **UPLOAD TO CLOUD:** Tap to upload the current Neural Capture to the Cloud. Not available when checking Neural Captures from other users.

- **VISIBILITY:** Tap to toggle the current Neural Capture visibility (Private/Public). Not available when checking Neural Captures from other users.
- **PREFERRED INSTRUMENT:** The preferred instrument is displayed here.
- **GAIN:** The gain value is automatically calculated after creating a Neural Capture. Based on how saturated the Neural Capture is, it is given a gain value of **1-10**; 1 being a clean 10 and 10 being the most saturated distortion.
- **SEND TO A FRIEND:** Tap to send the selected Neural Capture to a friend.
- **DOWNLOAD:** Tap to download the current Neural Capture to the Nano Cortex Library.

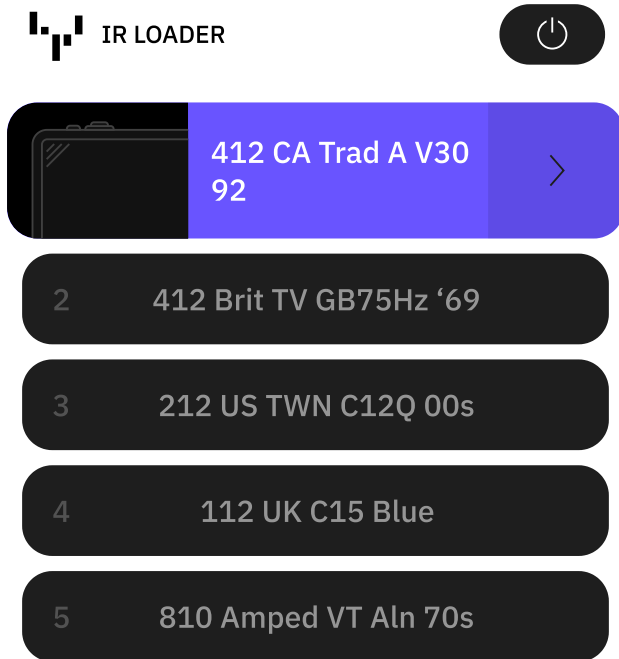
## Downloading Content

Download Neural Captures and IR files via Cortex Cloud.



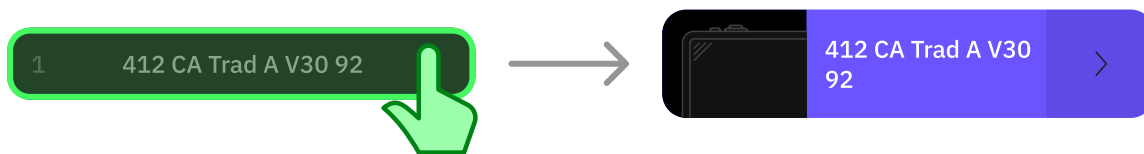
# IR Loader Library

Nano Cortex includes Factory Impulse Responses available via the 5 IR Loader slots.

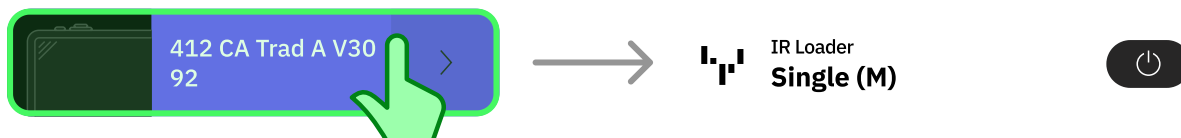


...

## IR LOADER WORKFLOW

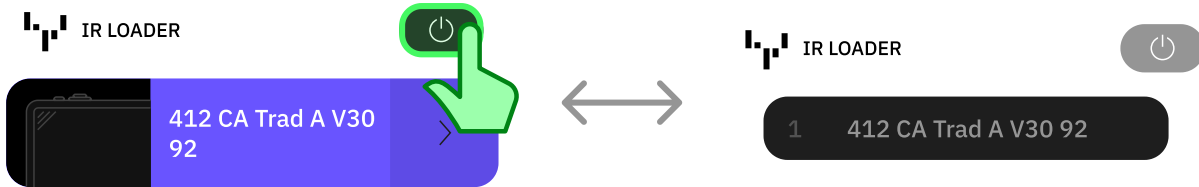


Tap a **disabled IR slot** to activate it.



Tap an **active IR slot** to enter its parameter screen.

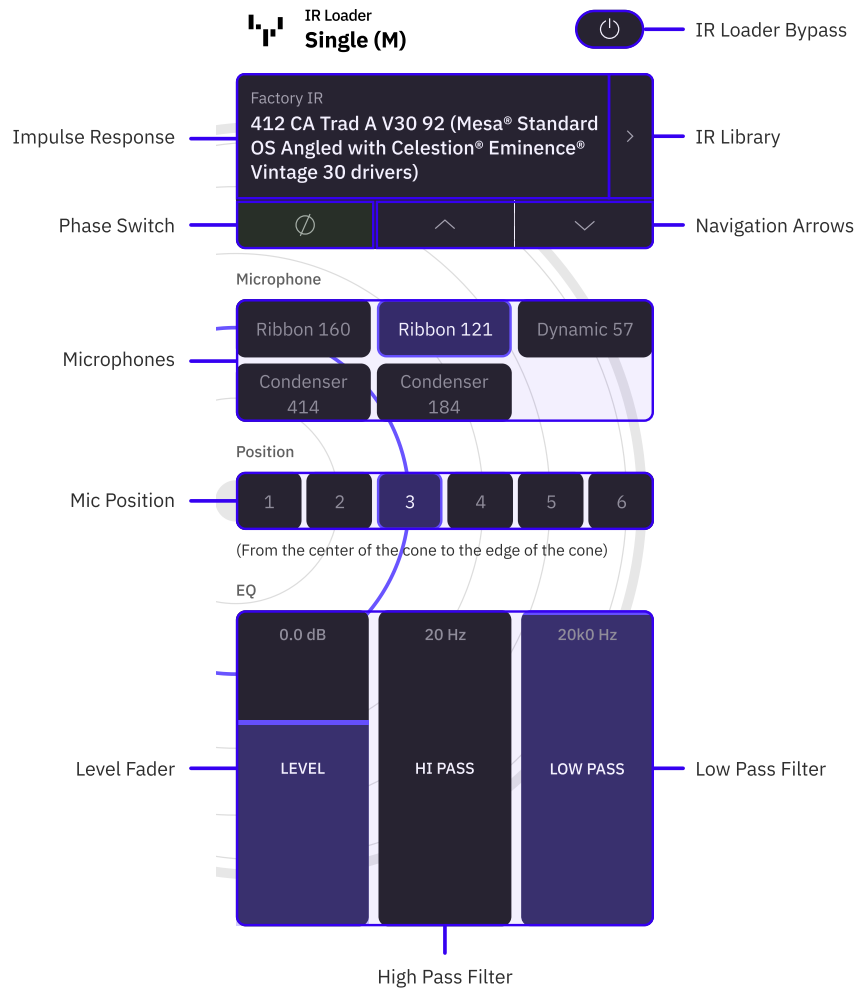




Tap the **Bypass** button to bypass the IR Loader.

...

## IR LOADER PARAMETER SCREEN



**Microphones** and **Mic Position** modules will not be available in the IR Loader parameter screen layout when using User Impulse Responses.

- **BYPASS**: Tap to bypass/enable the IR Loader.
- **IMPULSE RESPONSE**: Displays the currently loaded Impulse Response.
- **IR LIBRARY**: Tap to access Factory and User Impulse Responses.
- **PHASE**: Tap to invert the phase of the current IR.
- **UP/DOWN**: Tap to navigate Impulse Responses.

- **MICROPHONES:** Factory microphones list. Tap to select a microphone. This module will not be available in the parameter screen layout when using User Impulse Responses.
- **MIC POSITION:** Six fixed positions for the currently selected microphone. Tap to select a position. This module will not be available in the parameter screen layout when using User Impulse Responses.
- **LEVEL FADER:** Drag to increase/decrease the Impulse Response output volume.
- **HI PASS FADER:** Increase to remove low frequencies from the Impulse Response signal.
- **LOW PASS FADER:** Decrease to remove high frequencies from the Impulse Response signal.

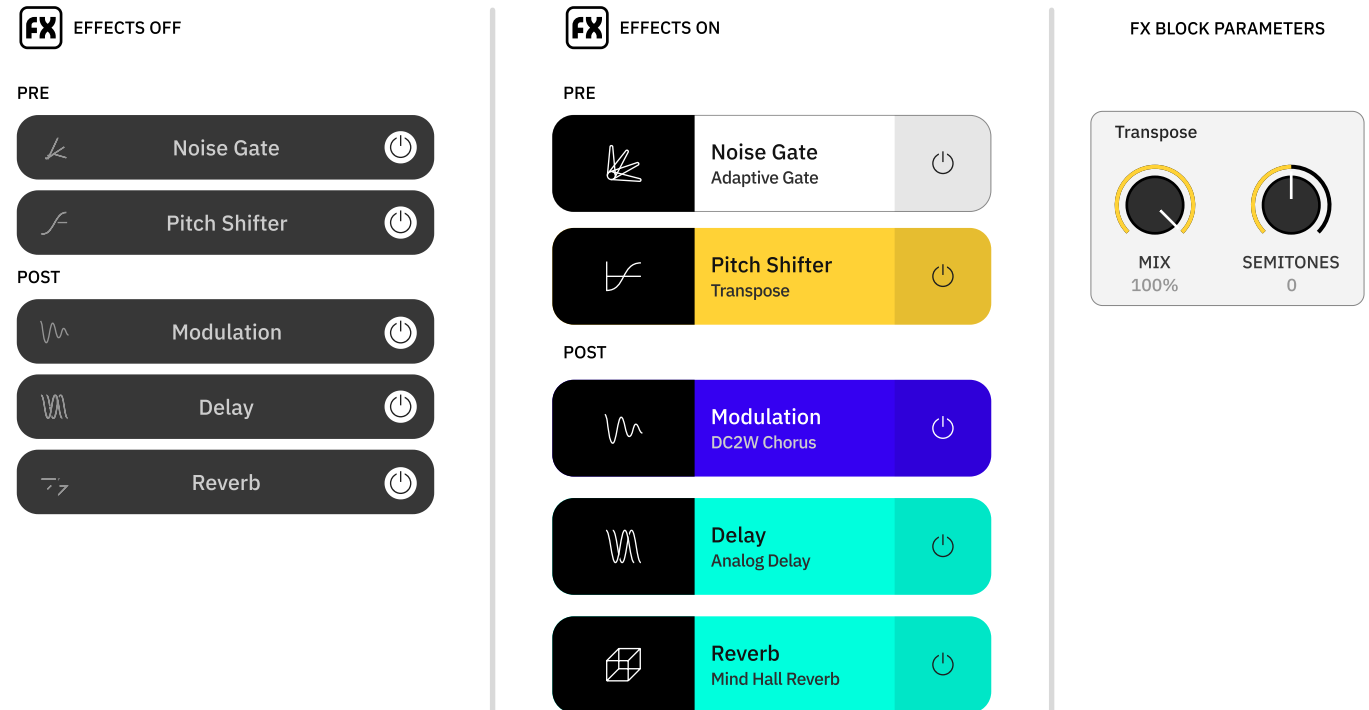
## Downloading Content

Download Neural Captures and IR files via Cortex Cloud.



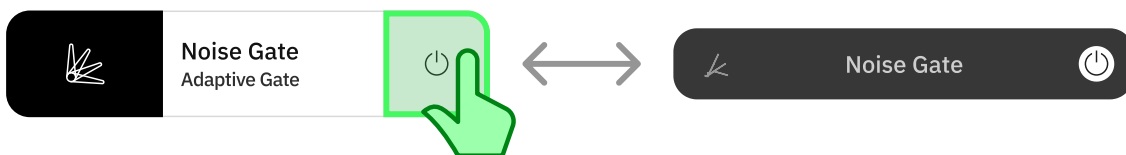
# Effects Library

Nano Cortex includes **5 effects** that can be used separately or combined.

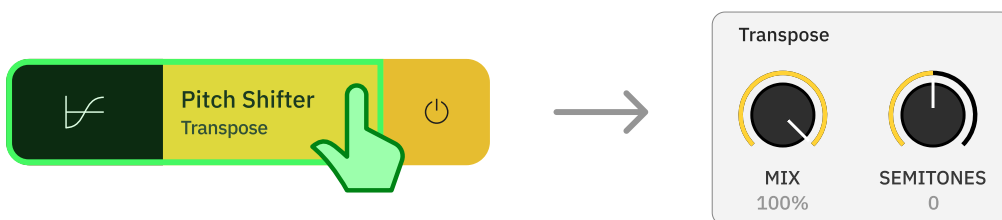


...

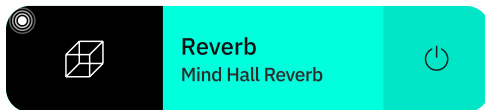
## EFFECTS LIBRARY WORKFLOW



Tap the **Bypass** button to bypass/engage the current effect.

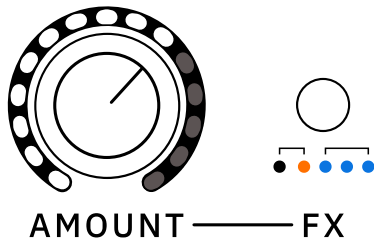


Tap an **effect slot** to access its parameters screen.



A white dot will appear at the top-left corner of an effect slot whenever there are **unsaved changes** in its parameter screen.

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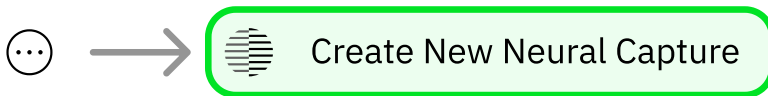


Nano Cortex's **AMOUNT** and **FX** LEDs will update their values reflecting changes made on the Cortex Cloud app in real time.

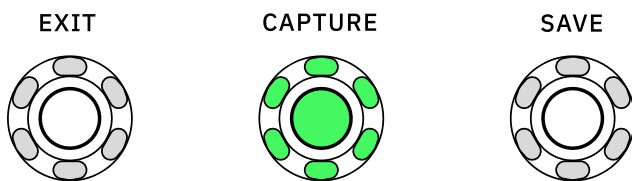
# Create New Neural Capture

While you can create a Neural Capture without using the Cortex Cloud app, using the app offers a better, guided experience from start to end.

To create a Neural Capture, you need to be able to connect an overdrive pedal, mic up a cabinet, or connect an amplifier via a reactive load box.



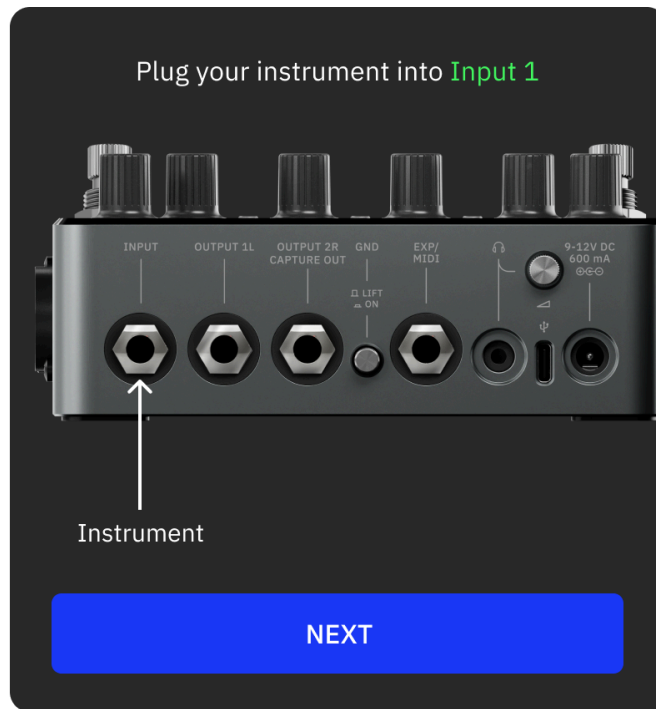
Tap the contextual menu button at the app's top-right corner, and select **Create New Neural Capture** to access the 'Connection Diagram' screen.



Alternatively, press the **CAPTURE** button on your Nano Cortex while the Cortex Cloud app is open. The app will automatically skip the 'Connection Diagram' and enter the 'Calibration Settings' screen.

...

## CONNECTION DIAGRAM SCREEN



Follow the instructions on the screen. Tap **NEXT** to navigate through the connection steps.

Alternatively, tap **SKIP** to access the 'Calibration Settings' screen.

### Neural Capture Connection Diagram

Click to access a deeper overview of the connection diagram.



### TUBE AMPLIFIER WARNING

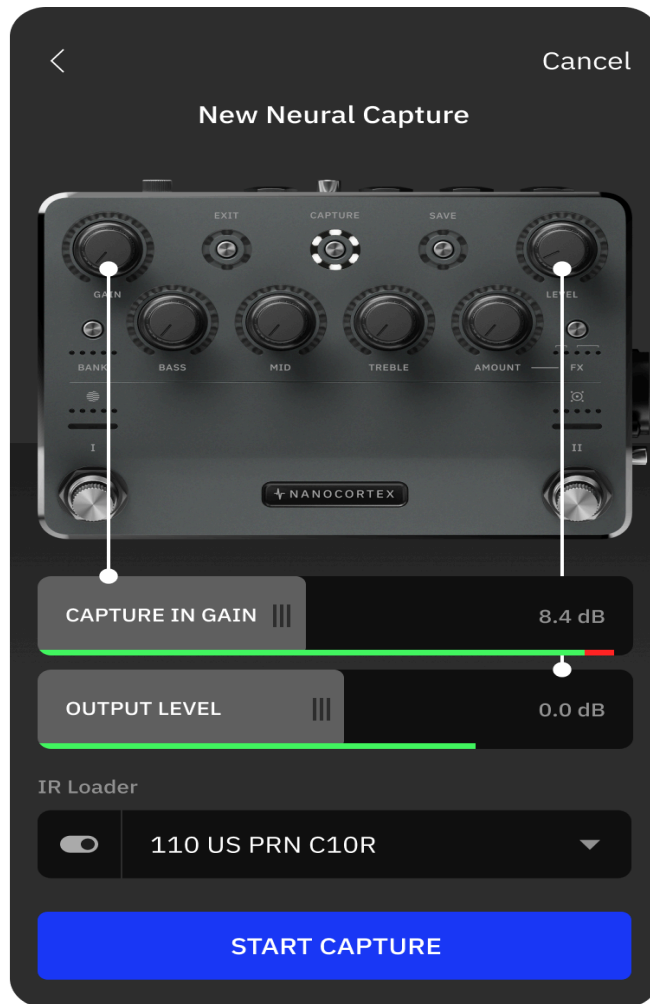
Connecting the speaker output of a tube amplifier straight to Nano Cortex could **damage** both devices. Ensure you either use:

- A **D. I. Out** and your amplifier is still connected to a cabinet.
- A **Reactive Load Box** between the target device and Nano Cortex.



...

## CALIBRATION SETTINGS SCREEN



Ensure the target device's settings are set to your liking and the Nano Cortex's GAIN knob is at the minimum position.

- **CAPTURE GAIN:** Drag the slider to increase the CAPTURE INPUT gain up to a maximum of +24dB.
- **OUTPUT LEVEL:** Drag to control the overall output volume of the Nano Cortex (OUTPUT 1L and Headphones).
- **IR LOADER:** Tap to toggle the IR Loader bypass state.
- **IR SLOT:** Tap to select the IR slot.
- **START CAPTURE:** Tap to begin the Capture process.

...

## CAPTURE PROCESS & METADATA



Neural Capture in Progress ...

ADD NAME + METADATA



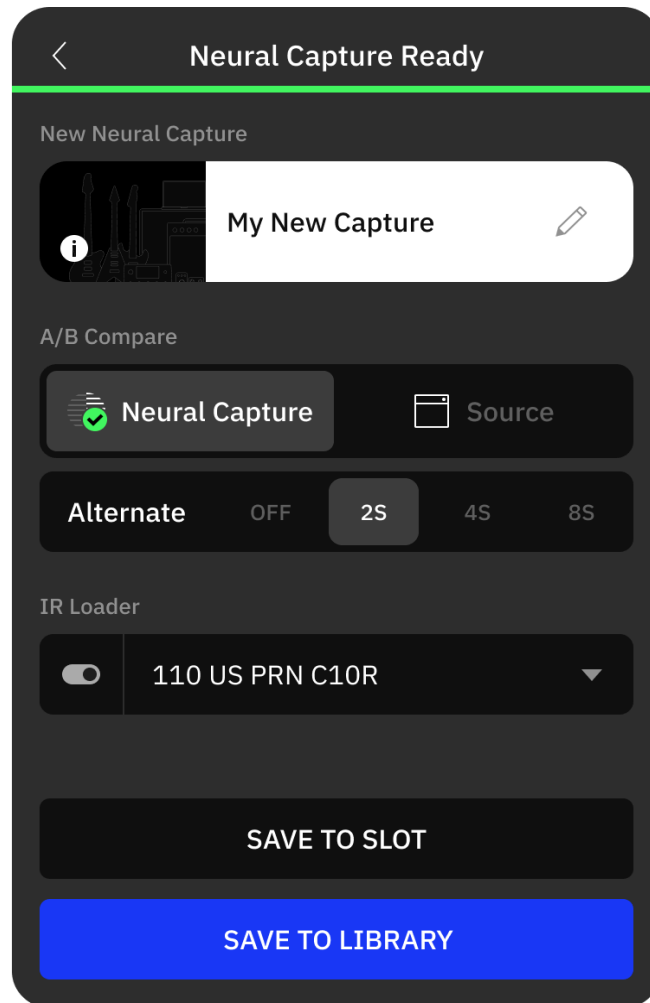
The Nano Cortex will measure the latency of the target device and deliver recorded signals that will be used for modeling.

While the Capture is in progress, you can add metadata to your Neural Capture such as *Name*, *Type*, *Description*, and *Preferred Instrument*.

Tap **NEXT** to access the 'Testing' screen.

...

## TESTING SCREEN



- **NEW NEURAL CAPTURE:** Tap to edit the Neural Capture metadata.
- **A/B COMPARE:** Monitoring switch. Tap to toggle between the target device signal and the recently created Neural Capture. Additionally, you can set it to switch automatically every 2, 4, or 6 seconds.
- **IR LOADER:** Tap to toggle the IR Loader bypass state.
- **IR SLOT:** Tap to select the IR slot.
- **SAVE TO SLOT:** Tap to save the recently created Neural Capture to a Capture slot.
- **SAVE TO LIBRARY:** Tap to save the recently created Neural Capture in your Library.

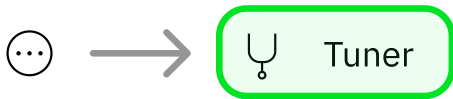


Once your Neural Capture is saved, tap **DONE** to exit Capture Mode.

Alternatively, tap **CREATE ANOTHER CAPTURE** to return to the 'Calibration Settings' screen.

# Tuner (App)

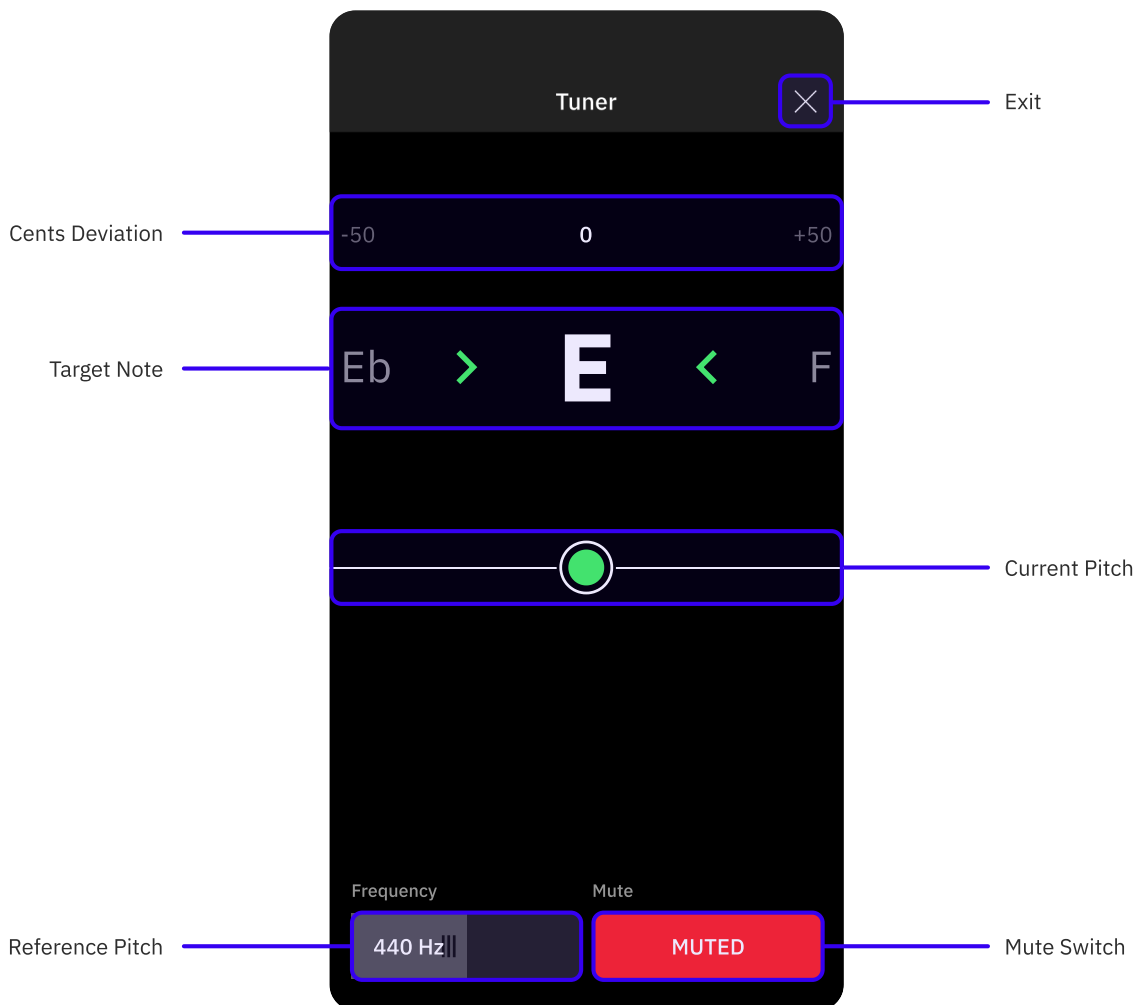
The Nano Cortex is equipped with a chromatic tuner that provides seamless integration with the Cortex Cloud app.



Tap the contextual menu button at the app's upper-right corner, and select **Tuner**.

...

## TUNER LAYOUT



The chromatic tuner works by detecting the pitch of the note being played and then displaying it on the Nano Cortex LED rings and on the Cortex Cloud App.

- **EXIT:** Tap to exit the Tuner.

- **TUNING DISPLAY**: Displays the note being played and its current pitch.
- **FREQUENCY**: Adjust the reference pitch from 400 to 480Hz (440Hz by default).
- **MUTE**: Tap to **mute/unmute** the input signal when the Tuner is opened.

### Tuner Synchronization

When the Tuner is engaged on the Nano Cortex, it will automatically display on the Cortex Cloud app. Similarly, opening the Tuner on the Cortex Cloud app will activate it on the Nano Cortex.



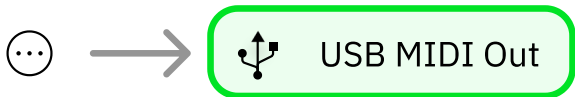
### Tuner Display on Nano Cortex

Click to check how the Tuner works on Nano Cortex.



# USB MIDI Out

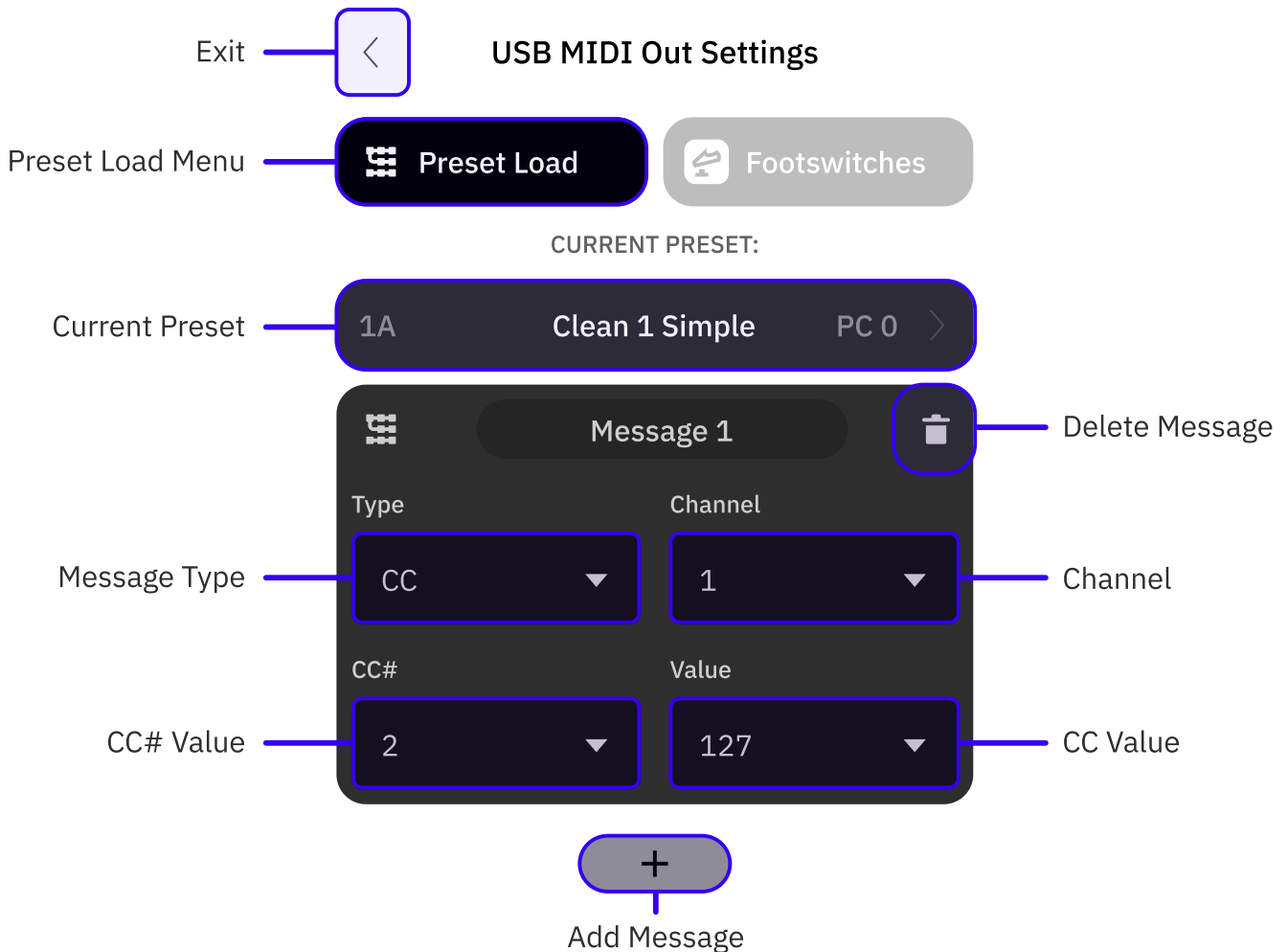
Nano Cortex can send MIDI messages to external devices via USB-C when pressing footswitches or upon Preset load.



Tap the contextual menu button at the app's upper-right corner, and select **USB MIDI Out** to access the settings.

...

## PRESET LOAD

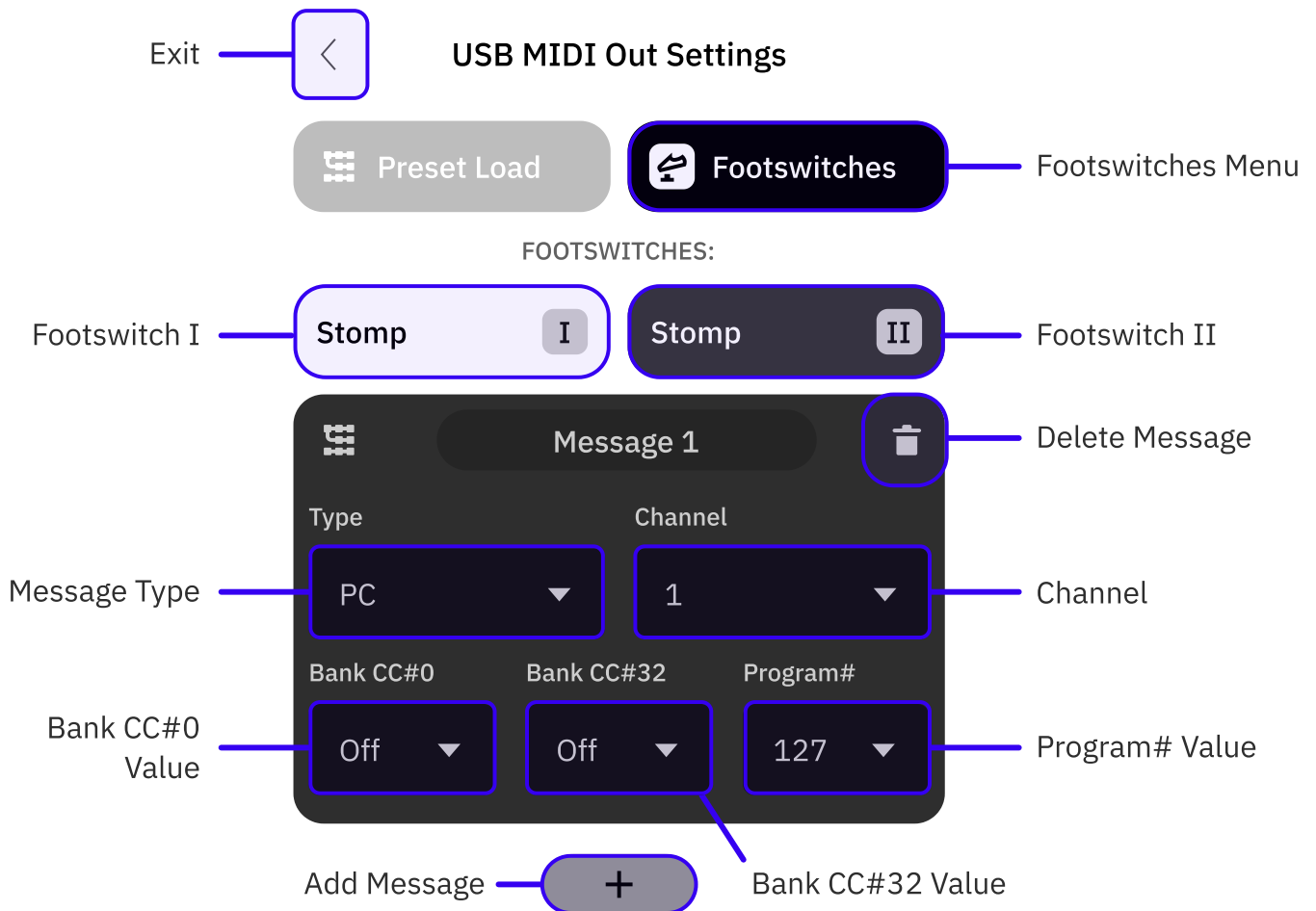


You can assign up to **12 MIDI messages per Preset** that will be sent via USB simultaneously once a designated Preset is loaded.

- **EXIT:** Tap to exit the USB MIDI Settings screen.
- **CURRENT PRESET:** Tap to access the Preset List. Choose a Preset to assign MIDI messages to it. You can assign MIDI messages to multiple Presets.
- **ADD (+):** Tap to create a MIDI message.
- **DELETE:** Tap to delete a MIDI message.
- **TYPE:** MIDI message type (CC or PC).
- **CHANNEL:** MIDI message Channel (1 to 16).
- **MIDI MESSAGE COMPONENTS:**
  - CC:** CC# and Value.
  - PC:** Bank CC#0, Bank CC#32, and Program.

...

### FOOTSWITCHES



You can assign up to **12 MIDI messages per footswitch** that will be sent via USB simultaneously upon pressing a designated footswitch.

- **EXIT:** Tap to exit the USB MIDI Settings screen.

- **FOOTSWITCH:** Tap to select a footswitch. The MIDI messages assigned to the selected footswitch will be displayed on the screen.
- **ADD (+):** Tap to create a MIDI message.
- **DELETE:** Tap to delete a MIDI message.
- **TYPE:** MIDI message type (CC or PC).
- **CHANNEL:** MIDI message Channel (1 to 16).
- **MIDI MESSAGE COMPONENTS:**
  - CC:** CC# and Value.
  - PC:** Bank CC#0, Bank CC#32, and Program.

# Incoming MIDI Support

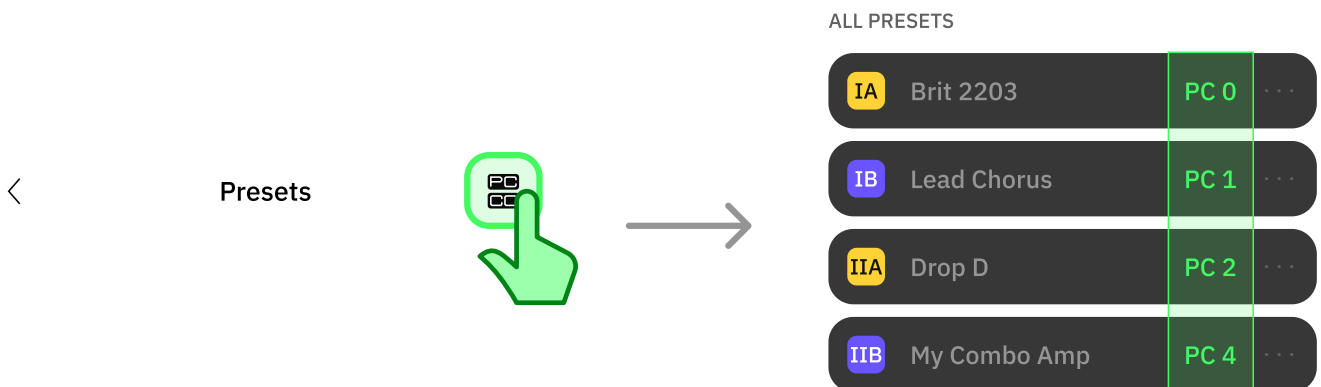
Nano Cortex can receive MIDI messages from external devices via **USB-C** and **TRS MIDI Type-A**.



To enable incoming MIDI over TRS, tap the contextual menu button at the app's upper-right corner, go to 'Settings', and ensure the EXP/MIDI operation mode is set to **MIDI**.

...

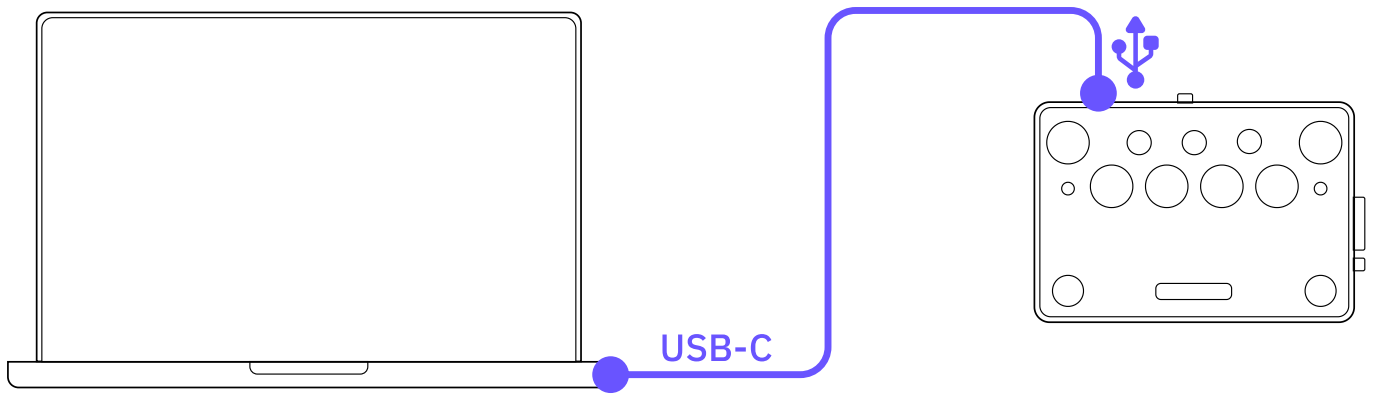
## PROGRAM CHANGE PRESET RECALL



The Preset slots organized below 'ALL PRESETS' are automatically assigned to PC messages from Program 0 to 63. Tap the **PC/CC** button at the top-right corner to toggle the PC messages view.

...

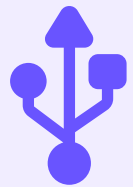
## USB MIDI ROUTING



- 1 Connect your Nano Cortex to a computer via **USB-C**.
- 2 Open your DAW and ensure Nano Cortex is recognized as a MIDI device.
- 3 Create a MIDI Track, route its output to Nano Cortex, and place Program Change messages in a MIDI clip.
- 4 Nano Cortex will recall Presets from the Preset Library accordingly upon playback.

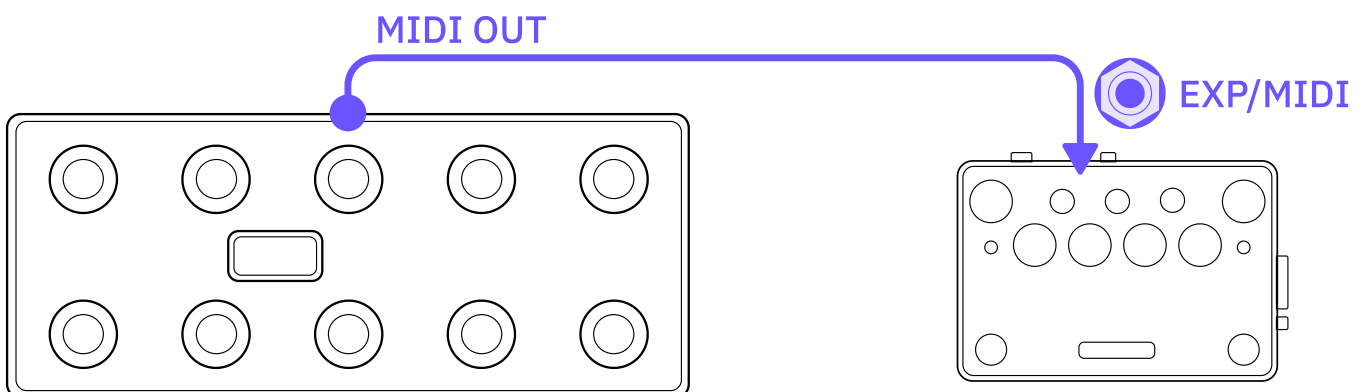
### Windows® ASIO Driver

For USB MIDI on Windows® computers, it is necessary to download and install the Nano Cortex ASIO® driver from our website. There is no driver installation necessary for Mac® computers.



...

### TRS MIDI TYPE-A ROUTING

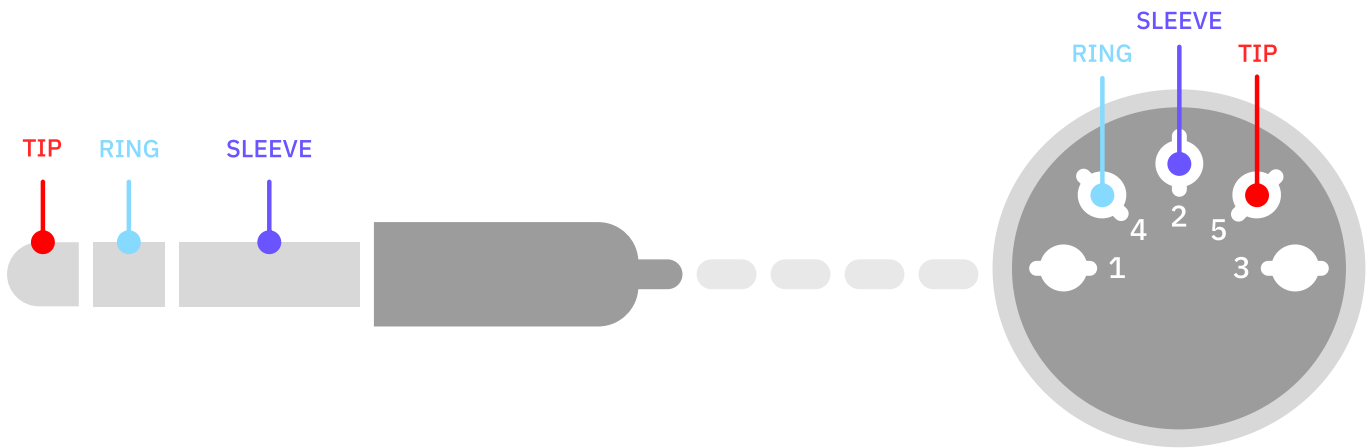


- 1 Ensure the EXP/MIDI operation mode is set as **MIDI** in the 'Nano Cortex Settings' screen.
- 2 Connect the external MIDI device's MIDI OUT to Nano Cortex's EXP/MIDI input by using a **TRS MIDI Type-A** cable.
- 3 Set the external MIDI device to send Program Change messages (Program 0 to 63).
- 4 Nano Cortex will recall Presets from the Preset Library accordingly.



...

## TRS MIDI TYPE-A SUPPORT



The **TRS MIDI Type-A** connection is the official standard adopted by the *MIDI Association*. Nano Cortex's **EXP/MIDI** input will be compatible with any TRS MIDI cable that meets the following requirements:

- **TIP**: Data line (MIDI Din Pin 5).
- **RING**: Voltage reference line (MIDI Din Pin 4).
- **SLEEVE**: Shield line (MIDI Din Pin 2).

# Expression Pedal Configuration

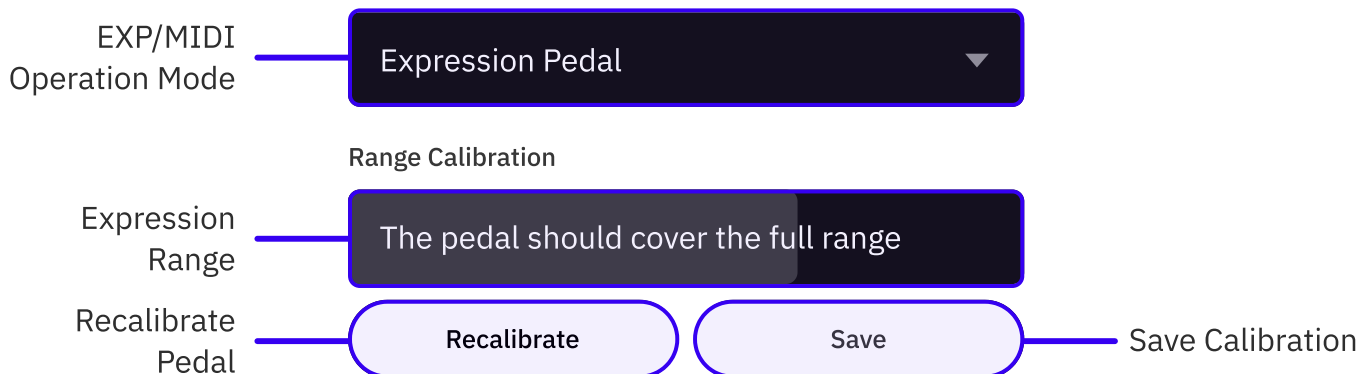
Many of Nano Cortex's parameters can be controlled externally via any compatible expression pedal.



To enable expression pedal support, tap the contextual menu button at the app's upper-right corner, go to 'Settings', and ensure the EXP/MIDI operation mode is set as **EXPRESSION PEDAL**.

...

## EXPRESSION PEDAL CALIBRATION



To ensure Nano Cortex responds to your expression pedal's full sweep range, it may be necessary to calibrate it during the first use via the **Settings** screen.

- 1 Place the expression pedal on the surface where it will be used and connect it to the Nano Cortex's EXP/MIDI input using a **TRS cable**.
- 2 Tap **RECALIBRATE**.
- 3 Rock the expression pedal back to its heel position and all the way down to its toe position.



- 4 Tap **SAVE**.

Expression pedal calibration settings remain active until a new calibration is performed.

...

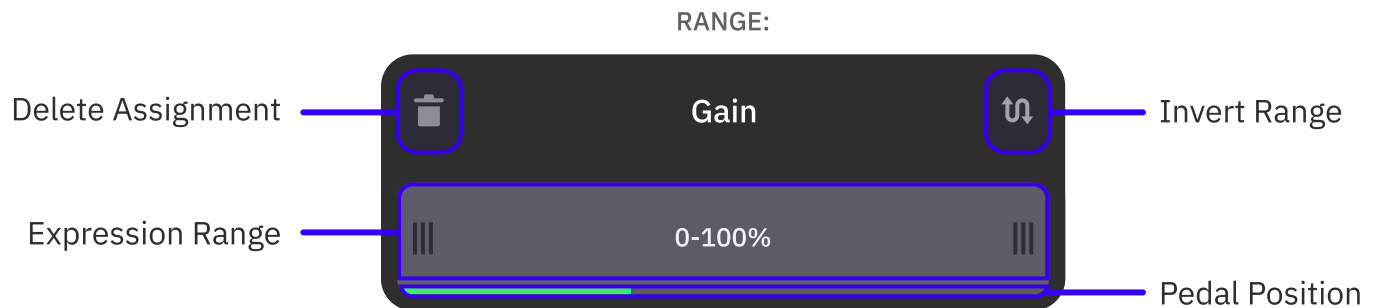
## EXPRESSION PEDAL ASSIGNMENTS



Tap the contextual menu button at the app's upper-right corner and tap **Expression Pedal**.

You can assign an expression pedal to control the range and bypass state of multiple parameters.

### • PARAMETER RANGE

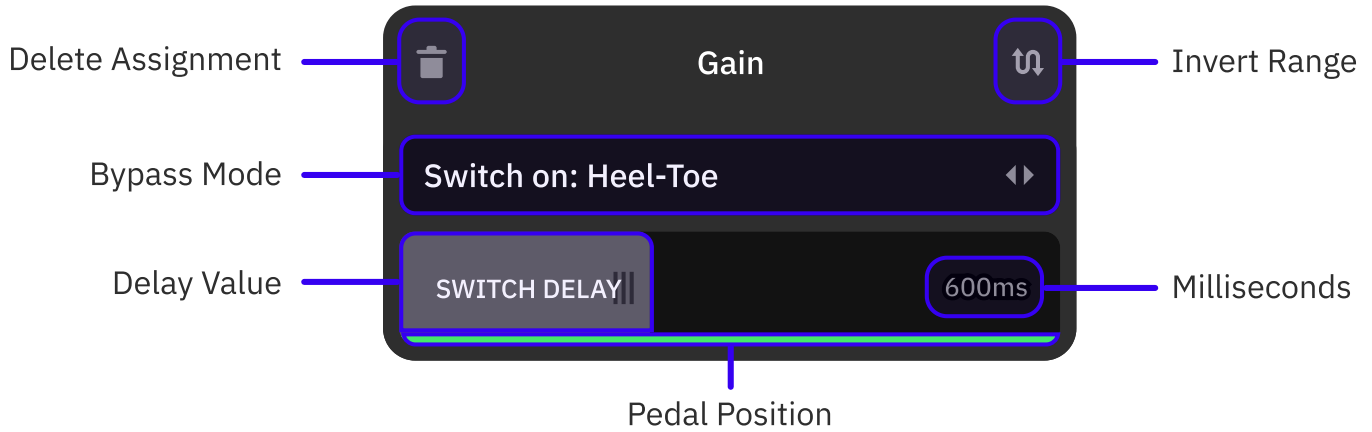


**GAIN, BASS, MID, TREBLE, AMOUNT,** and **LEVEL** knobs.

- 1 Tap the parameters you want to control via the expression pedal. Multiple parameters can be assigned at the same time.
- 2 By default, the expression will range from **0** to **100%**. Drag the edges of the bar to limit its range.
- 3 Tap the top-right button to **reverse** the expression behavior, swapping the heel and toe positions.
- 4 Alternatively, tap the top-left button to **delete** the assignment.

### • SLOT BYPASS

## BYPASS:

**CAPTURE, IR LOADER, and EFFECTS** slots.

- 1 Tap the parameters you want to bypass via the expression pedal. Multiple parameters can be assigned at the same time.
- 2 Tap the '**Switch on**' field to navigate through bypass modes.

**SWITCH:** Pressing the expression pedal toe switch will bypass/engage the slot. Activate the **Latch Emulation** feature to modify the behavior of momentary toe switches emulating a latching response.

**STOP:** Keeping the expression pedal still will bypass the slot. Drag the **SWITCH DELAY** bar to set the time it takes for the slot to be bypassed.

**HEEL-TOE:** The slot will be bypassed when the expression pedal is at heel position. Drag the **SWITCH DELAY** bar to set the time it takes for the slot to be bypassed (up to 2000ms).

- 3 Tap the top-right button to **reverse** the expression behavior, swapping the heel and toe positions.
- 4 Alternatively, tap the top-left button to **delete** the assignment.

...

**EXPRESSION PEDAL SUPPORT**

Nano Cortex is compatible with any expression pedal that meets the following requirements:

- **TRS CONNECTOR:** Single TRS expression output. Wah or Volume outputs are not supported.
- **CURVE:** Pedals with linear and logarithmic curves will work properly after being calibrated during the first use.

- **TOE-SWITCHES:** Optional feature. Latching and Momentary switches are supported. Momentary switches will work only when the Nano Cortex Latching Emulation feature is active.
- **ADDITIONAL CONTROLS:** Optional feature. Range control knobs and polarity switches are also supported.

# Firmware Updates

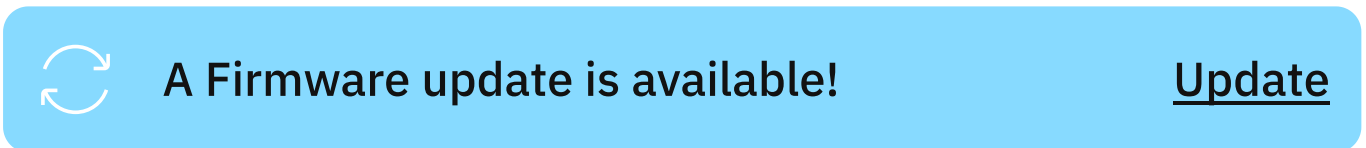
Nano Cortex's operating system is called **NanOS**. Keeping NanOS up to date improves the functionality, security, and overall user experience of your Nano Cortex.



Ensure that the Nano Cortex is properly paired with your smartphone and that your Internet connection is stable.

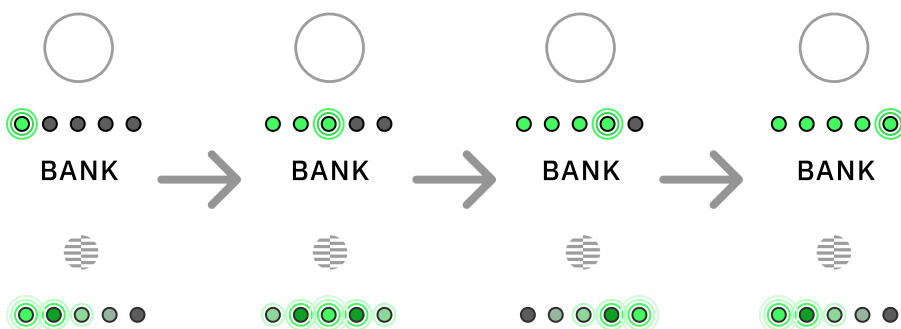
...

## UPDATE PROCESS



A banner will appear at the top of the app screen whenever a NanOS update is available.

- 1 Tap **Update** at the right side of the banner.
- 2 Follow the instructions on screen. Tap **UPDATE** to start the download process.



Nano Cortex's **BANK** and **CAPTURE** LEDs will reflect the download progress. Once the download completes, please wait a few minutes for your Nano Cortex to finish the installation.

After the setup, Nano Cortex will reboot and automatically reconnect to your smartphone.

## FIRMWARE UPDATE PRECAUTIONS

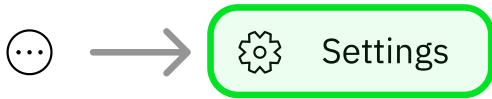
The update may take a few minutes to complete.

Ensure your Nano Cortex is close to your smartphone during this process. To prevent installation issues, avoid locking your smartphone, disabling Bluetooth, minimizing or closing the Cortex Cloud app during the update.



# Device Settings

The Settings screen allows you to control most aspects of your Nano Cortex.



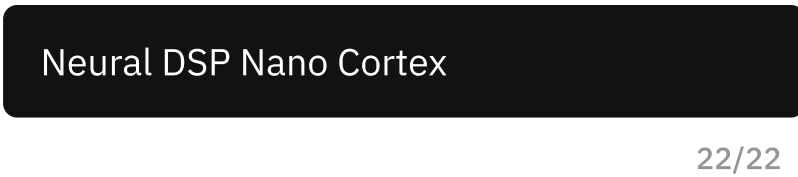
Tap the contextual menu button at the app's upper-right corner and tap **'Settings'** to access the Nano Cortex Settings screen.

...

## NANO CORTEX SETTINGS SCREEN

- **DEVICE NAME**

Device Name



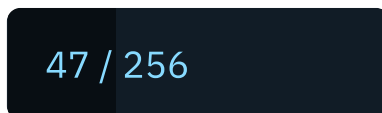
Assign a custom name for your Nano Cortex (up to 22 characters).

- **STORAGE**

User Neural Captures

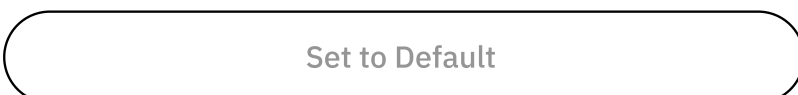


User Impulse Responses



Available storage on your Nano Cortex.

- **LED BRIGHTNESS**

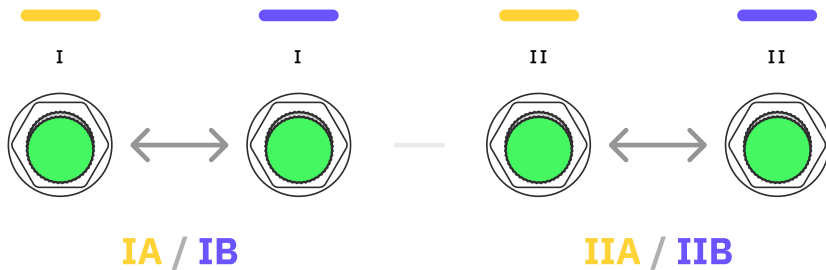




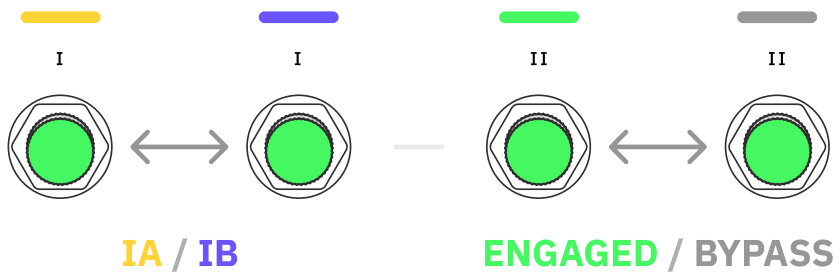
Drag the slider to set the LED brightness of your Nano Cortex (60% by default).

• **PRESET OPERATION MODE**

4-PRESET MODE



2-PRESET MODE



Enable **4-Preset Mode** to assign Presets to both Footswitches I and II (IA, IB, IIA, and IIB).

If this setting is disabled, Nano Cortex will operate in **2-Preset Mode**, allowing only Footswitch I to recall Presets (A and B) while Footswitch II will function as a global bypass switch.

• **KNOB OPERATION MODE**

Catch Knobs Instantly



By default, the Nano Cortex knobs adjust parameters immediately when turned. If this setting is disabled, Nano Cortex will operate in **Latching Mode**, where the knobs' position must match the values indicated by the LED rings before they start adjusting parameters.

• **EXP/MIDI INPUT BEHAVIOR**

MIDI ▼

Expression Pedal ▼

Tap to toggle the EXP/MIDI Input functionality between **MIDI** and **Expression Pedal**.

---

- **ABOUT**

**NanOS version:** 1.1.0

**Serial Number:** NA00AA000 

Current NanOS version and device serial number. The Nano Cortex serial number is also engraved on the bottom of the device.

---

- **FACTORY RESET**

Factory Reset

Performing a factory reset will remove all user content from the device.

**WARNING**

Performing a factory reset will remove all user data including Neural Captures, Presets, and Impulse Responses from the device.

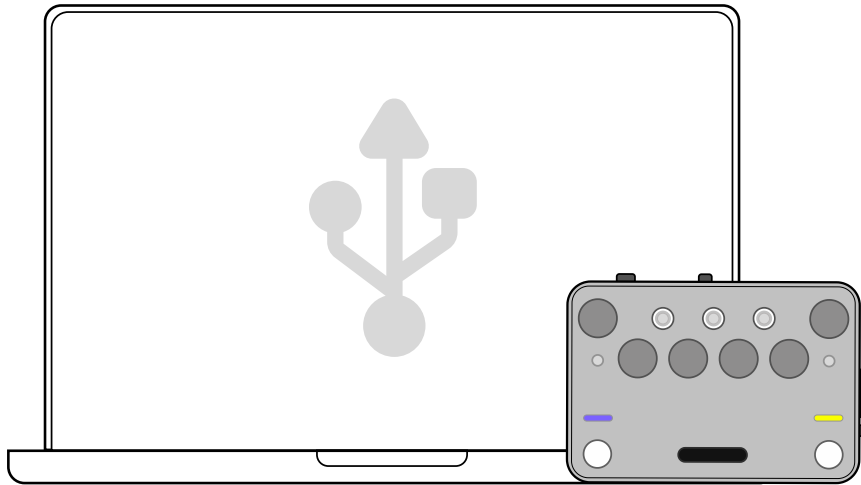
**This action cannot be undone.**



# 07

## Computer Integration

Nano Cortex can function as an audio interface by connecting it to your computer via USB.



# USB Audio Setup

Nano Cortex can be utilized as a USB 2.0, 24-bit, 48kHz (Fixed), low-latency audio interface for Windows® and Mac® computers.

Connect your Nano Cortex to your computer via the **USB-C** cable included in the box.

## Power Sources

Click to access a deeper overview of the USB-C specifications.



...

## MACOS® SETUP

- 1 Connect your Nano Cortex to your computer.
- 2 Go to 'System Preferences', 'Sound', and set Nano Cortex as the main Input and Output device of your computer.
- 3 Set the monitoring volume via the computer audio controls.

---

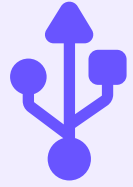
## WINDOWS® SETUP

- 1 Download the driver installer from our website ([Downloads](#)).
- 2 Run the installer. Reboot your computer after the setup.
- 3 Connect your Nano Cortex to your computer.
- 4 Go to 'Control Panel', 'Hardware and Sound', 'Sound', and ensure your Nano Cortex is set as the default Playback and Recording device of your computer.
- 5 Set the monitoring volume via the computer audio controls.

The Nano Cortex driver will be installed in the following path location: **C:\Program Files\NeuralDSP\Nano Cortex Driver**









## Windows® ASIO Driver

For USB audio on Windows® computers, it is necessary to download and install the Nano Cortex ASIO® driver from our website. There is no driver installation necessary for Mac® computers.



## USB Channels

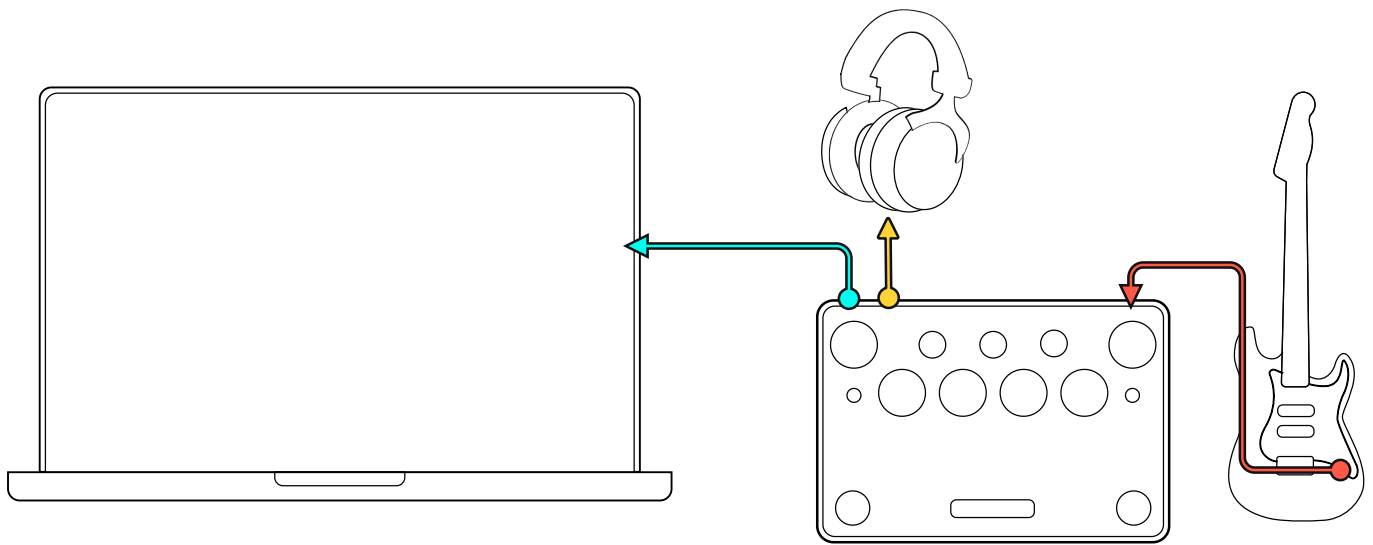
Nano Cortex features 7 USB Channels (4IN/3OUT).

 USB CHANNEL	DESCRIPTION	NANO CORTEX
INPUT 1	Dry Input (D.I.) signal from analog INPUT and CAPTURE INPUT to host.	 From INPUT
INPUT 2	Select INPUTS 1/2 on your DAW to record D.I. signal.	 From CAPTURE INPUT
INPUT 3	Processed signal from analog OUTPUT 1L and 2R to host.	 From OUTPUT 1L
INPUT 4	Select INPUTS 3/4 on your DAW to record processed audio signal.	 From OUTPUT 2R
OUTPUT 1	Playback from the host through OUTPUTS 1L and 2R.	 To OUTPUT 1L
OUTPUT 2	Select OUTPUTS 1/2 on your host to hear playback through Nano Cortex's OUTPUTS 1L, 2R, and HP OUT.	 To OUTPUT 2R
OUTPUT 3	Manual route from the host to Nano Cortex's INPUT. Select OUTPUT 3 on your DAW to reamp audio tracks through Nano Cortex.	 To INPUT

# Host Monitoring

## D.I. and processed signal recording

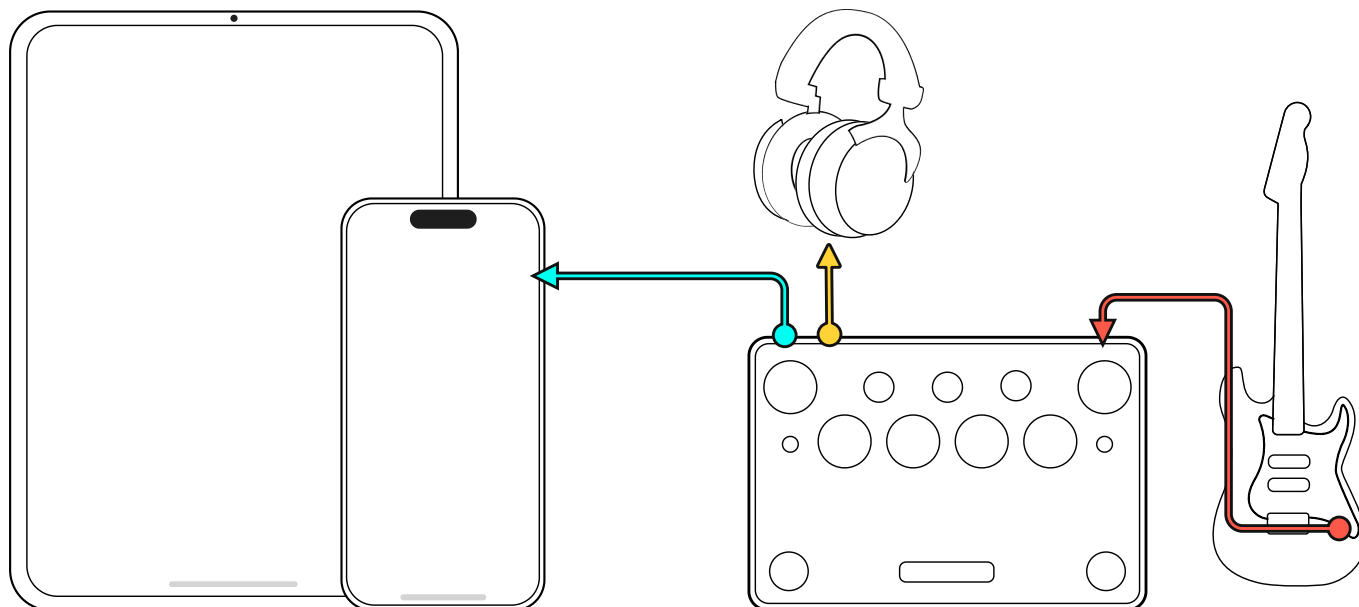
Nano Cortex allows you to record dry and processed signals simultaneously. Connect your instrument to **INPUT** and ensure Nano Cortex is selected as the default audio interface on your computer.



- 1 Open your DAW, create a mono audio track, and set its input as **Input 1** (Dry input signal).
- 2 Create a stereo audio track and set its input as **Input 3/4** (Processed signal from analog OUTPUT 1L and 2R).
- 3 Arm both tracks for recording.
- 4 To reamp a recorded D.I. track, set its output as **Output 3** (To Nano Cortex's INPUT), create a new stereo track (Input 3/4), and arm it for recording.

---

## Connecting Nano Cortex to an iPhone® or iPad®



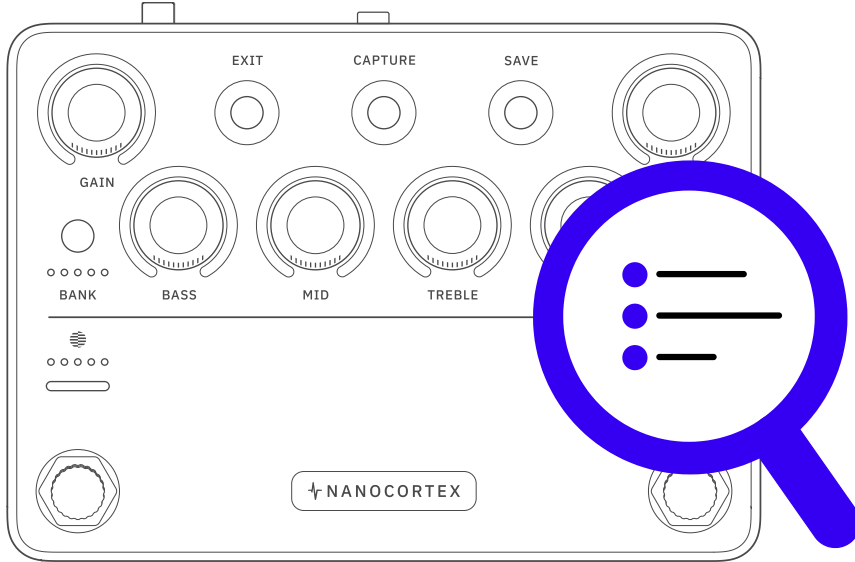
You can use any class-compliant USB audio device with an iPhone® or iPad®. Nano Cortex can be connected to those devices via a USB-C cable (iPhone 15 or later).

iPhone 14 and older generations will need the **Apple® Lightning to USB-C Camera Adapter** to recognize Nano Cortex as an external microphone device.

This feature allows you to use Nano Cortex with audio apps like GarageBand® for recording purposes.

# 08

## Hardware Specifications





# Factory Content

...

## NEURAL CAPTURES

### BANK 1 (Clean):

- 1 CA John's Ch1 1 (Mesa Boogie® JP2C® Ch1)
  - 2 Comet 60 5 (Komet® 60)
  - 3 Bogna X100B Ch1 1 (Bogner® Ecstasy 100B® Ch1)
  - 4 Watt Custom Clean 7 (Hermansson Hiwatt® Custom PA100® Clean)
  - 5 US HRDLX ChA 6 (Fender® Hot Rod Deluxe® Channel A)
- 

### BANK 2 (Edge):

- 1 Comet 60 6 (Komet® 60)
  - 2 NoMatch Chief 1 (Matchless® Chieftain®)
  - 3 US Prince 65 4 (Fender® Princeton® 65)
  - 4 Watt Custom VH 1 (Hermansson Hiwatt® Custom PA100® VH)
  - 5 D-Cell H4 Ch2 1 (Diezel® VH4® Ch2)
- 

### BANK 3 (Crunch):

- 1 Bogna Fish+290 5 (Bogner® Fish®) + (Mesa® Boogie® Stereo Simul-Class™ 2: Ninety™)
- 2 Brit 2555 Rhy 12 (Marshall® Silver Jubilee® 2555 Rhythm)
- 3 Custom 3SE+290 2 (Custom Audio Amplifier® 3+SE®) + (Mesa® Boogie® Stereo Simul-Class™ 2: Ninety™)

- 4 D-Cell H4 Ch3 3 (Diezel® VH4® Ch3)
  - 5 ENG Energy 3 (ENGL® Powerball® Mark I)
- 

### **BANK 4 (High Gain):**

- 1 Bogna X100B Ch3 Lead 18 (Bogner® Ecstasy 100B® Preamp Ch3 Lead)
  - 2 CA Studio+290 2 (Mesa® Boogie® Studio Preamp®) + (Mesa® Boogie® Stereo Simul-Class™2:Ninety™)
  - 3 CA John's Ch3 7 (Mesa Boogie® JP2C® Ch3)
  - 4 PV 505Sig 7 (Peavey® 5150® Signature)
  - 5 Brit 2555 Lead 1 (Marshall® Silver Jubilee® 2555 Lead)
- 

### **BANK 5 (Bass):**

- 1 Aggi 751 31 (Aguilar® DB751®)
- 2 Amped SV Classic 3 (Ampeg® SVT Classic®)
- 3 Rodent+SV 3 (ProCo® Rat®) + (Ampeg® SVT Classic®)
- 4 CA MixBass 3 Amp2 (Mesa® Boogie® M6 Carbine®) + (Big Block 750®)
- 5 Anima Fuzz 8 (Human Gear® Animato®)

...

## **IMPULSE RESPONSES**

- 1 110 US PRN C10R (Fender® Princeton® with Jensen® C10R drivers)
- 2 112 UK C15 Blue (Vox® AC15® with Celestion® Alnico Blue drivers)
- 3 115 Amped Modern (Ampeg® SVT® 115HE®)
- 4 212 Match D30 Sig A (Matchless Amplifiers® DC30® Sig A)
- 5 212 US TWN C12Q 00s (Fender® Twin Reverb® with Jensen® C12K-2 drivers)
- 6 412 Brit TV GB75Hz '69 (Marshall® 1960TV® with Celestion® G12M25 drivers)

- 7 412 CA Stand OS A V30 '01 (Mesa® Standard OS Angled with Celestion® Vintage 30 drivers)
- 8 412 CA Trad S UKV30 90s (Mesa® Traditional Straight with Celestion® Vintage 30 drivers)
- 9 412 Zila Cust V30 '12 V2 (Zilla® Custom with Celestion® Vintage 30 drivers)
- 10 810 Amped VT Aln 70s (Ampeg® SVT® 810® with custom Eminence® ceramic drivers)
- ...

## EFFECTS

- 1 Adaptive Gate (Pre FX)
- 2 Transpose (Pre FX)
- 3 Chief DC2W (Post FX)
- 4 Analog Delay (Post FX)
- 5 Mind Hall Reverb (Post FX)

# Factory Reset

## WARNING

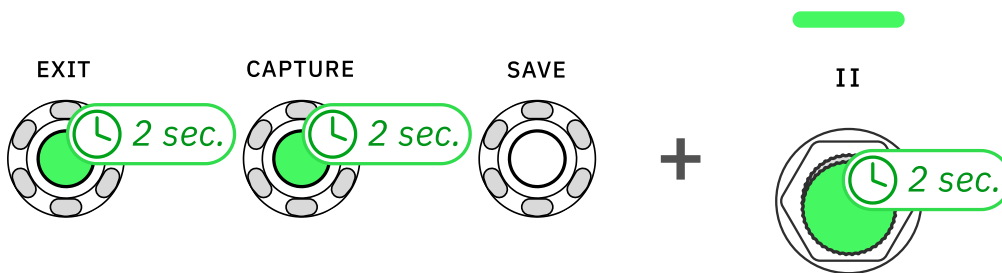
Performing a factory reset will remove all user data including Neural Captures, Presets, and Impulse Responses from the device.

**This action cannot be undone.**



...

## FACTORY RESET PROCESS

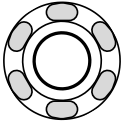


Press-and-hold **EXIT**, **CAPTURE**, and **Footswitch II** for 2 seconds.

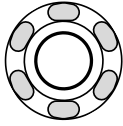


The LEDs will light up. **GAIN**, **Footswitch I** and **II** will turn blue.

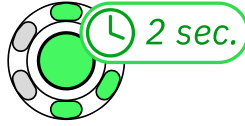
EXIT



CAPTURE



SAVE



While the LEDs are lit, press-and-hold **SAVE** until the Nano Cortex reboots.

**All user data will be then removed.**

# I/Os & General Information

## INSTRUMENT INPUT

- CONNECTOR: [1/4 TRS-F](#)
  - IMPEDANCE: [1M \$\Omega\$](#)
  - MAX INPUT LEVEL: [+10dBu](#)
- 

## COMBO CAPTURE INPUT

- CONNECTOR: [XLR-F + 1/4 TRS-F](#)
  - TS IMPEDANCE: [1M \$\Omega\$](#)
  - XLR IMPEDANCE: [45k \$\Omega\$](#)
  - MAX INPUT LEVEL: [+10dBu](#)
  - BOOST GAIN: [+26dB](#)
- 

## TRS OUTPUTS 1L/2R

- CONNECTOR: [\(2\) 1/4 TRS-F](#)
  - IMPEDANCE: [560 \$\Omega\$](#)
  - MAX OUTPUT LEVEL: [+10dBu \(Unbalanced\) / +16dBu \(Balanced\)](#)
- 

## HEADPHONES OUTPUT

- CONNECTOR: [3.5MM TRS-F](#)
  - MAX OUTPUT POWER: [55mW into 20 \$\Omega\$](#)
- 

## EXP/MIDI INPUTS

- EXPRESSION CONNECTOR: [1/4 TRS-F](#)
  - MIDI CONNECTOR: [MIDI TRS Type A](#)
-

## USB AUDIO

- FORMAT: [USB Audio Class 2.0 Compliant](#)
  - CHANNELS: [7 \(4IN/3OUT\)](#)
  - AUDIO CLOCK: [48 kHz \(FIXED\)](#)
- 

## GENERAL

- FINISH: [Anodized aluminum unibody](#)
  - CONTROLS:
    - [2 Stainless Steel Stomp + Rotary Footswitches](#)
    - [7 Knobs](#)
    - [2 Analog Switches](#)
    - [5 Digital Switches](#)
  - DIMENSIONS: [14.4 x 10.3 x 6.2 cm / 5.6 x 4.0 x 2.4"](#)
  - WEIGHT: [620g / 1.36lbs](#)
  - INPUT VOLTAGE:
    - [9-12V DC 600mA \(Center Negative\)](#)
    - [USB-C 5V, 1.5A or higher](#)
- 

## ENVIRONMENTAL INFORMATION

- OPERATING TEMP: [0 to 50 °C \(32 to 122 °F\)](#)
- STORAGE TEMP: [-10 to 70 °C \(14 to 158 °F\)](#)
- HUMIDITY: [Maximum non-condensing](#)

## SUPPORT

## CAREERS

## NEWS

## KNOWLEDGE BASE

## PLUGINS

Downloads

Archetype: Gojira X

Morgan Amps Suite

Archetype: Plini X

Archetype: Mateus Asato

Mesa Boogie Mark IIC+ Suite

Tone King Imperial MKII

Archetype: Petrucci

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## Hardware Warranty Policy

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