MODULAR MONOTONY DEGENERATOR

USER GUIDE

ENJOY®
ELECTRONICS
www.enjoy-lab.com

DeFeel - Modular Monotony Degenerator

User Manual

DeFeel represents a new vision in the world of modular synthesizers: not just a simple generator, but an innovative "degenerator" designed to break the monotony of repetitive sequences and creatively enrich them.
In a landscape saturated with generators, DeFeel distinguishes itself as the first device conceived to introduce controlled and creative variations into the musical flow.
This device, in our vision, was created with the intent to strategically position itself between the sequencer and other modules in the modular synthesizer chain, creating a creative bridge between the rigidity of programmed sequences and the unpredictability of musical expression.
The heart of DeFeel lies in its dual nature: when in transparency mode, it allows signals to flow through it; when it takes action, it temporarily replaces the original signals with its creative sequences, its "fills."
DeFeel is equipped with two gate channels and four CV channels, both for input and output.

Important Safety Rules

1. Read these instructions.
2. Pay attention to any warnings.
3. Follow all instructions.
4. Do not use the unit near water.
5. Clean only with a dry cloth.
6. Carry out the installation following the instructions provided by the manufacturer.
7. Do not install the unit near heat sources, such as heaters, stoves or other devices capable of producing heat (including amplifiers).
8. Any repairs must be carried out by qualified technical personnel. Assistance is required when the unit is damaged in any way (for example: liquid or objects have fallen into the unit, the unit has been exposed to moisture or rain, the unit does not work correctly or has fallen).
9. Never hit or excessively press on the display.
10. The contents of the memory can be irreparably lost due to malfunctions, or due to incorrect use of the unit. Enjoy Lab assumes no responsibility for the loss of stored content (presets/settings) which may be lost.

Caution

Any changes and/or modifications not expressly approved in this manual may void your authority in operating with the equipment.

Assistance

Each technical intervention must be carried out by qualified personnel only.

Warning

To reduce the risk of fire or electric shock, do not expose the unit to dripping or splashing of any kind of liquid and make sure that there are no objects containing liquids, such as vases or glasses, placed on it.

1. Overview

DeFeel offers:

- Two independent channels (CH1 and CH2), each equipped with a Gate IN, a Gate Out, 2 CV IN, and 2 CV OUT.
- Four main operating modes:
    - Density: Manages the density of gates per step.
    - Pattern: Creates customized rhythmic sequences.
    - CV Control: Modulates control voltages in real time.
    - XY Live: Allows real-time interactions with parameters via touch.
- Advanced modulation system:
    - Configurable LFO for each point, for dynamic modulation of patterns, density, and CV
- Musical quantization: Ensures that modulated CVs respect the set musical scales.
- Fill function: Generates rhythmic or melodic variations during the sequence.
- Memory saving: Stores your configuration for quick retrieval.

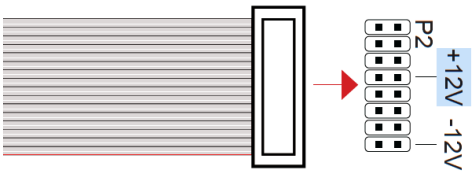
2. Installation and Connections

Mounting

DeFeel is designed to be installed in a Eurorack system.
Before mounting, carefully check the power requirements:

- +12V: 25mA
- -12V: 25mA
- +5V: 250mA

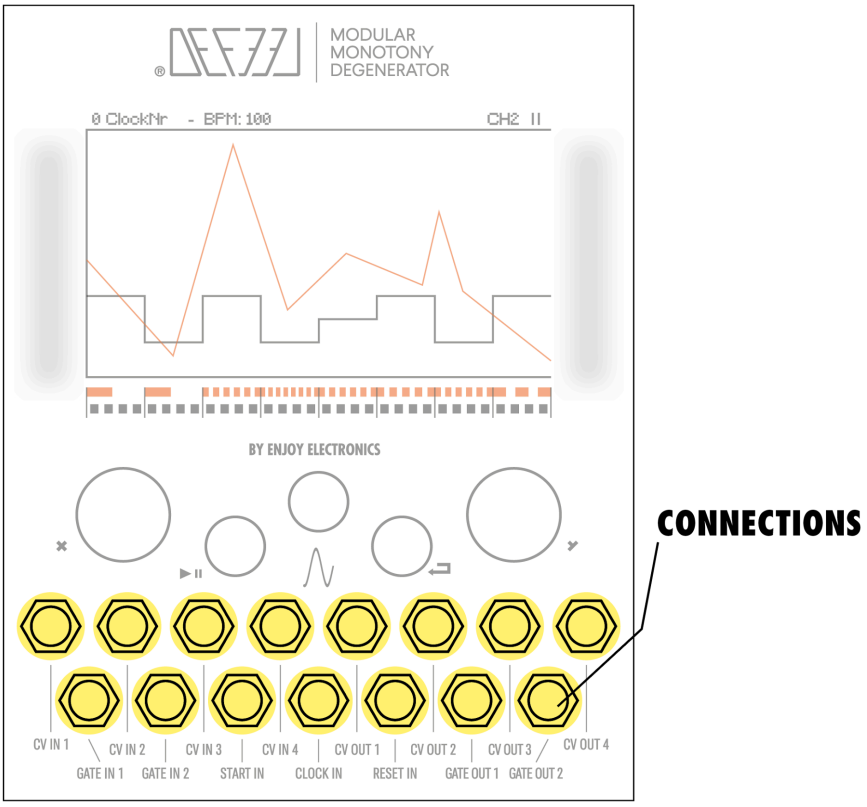
Important: Verify the power polarity: the connector must have -12V on the negative side.



Installation:

The module occupies 20 HP of space in the rack and comes with a complete set of hex socket screws and protective washers.
Important: The front panel is made of acrylic. To protect its integrity and avoid deformations, always position the protective washers under the screws before mounting.
Tighten the screws gently, without applying excessive force - manual tightening may be sufficient.

Connections



Clock In: Connect to an external clock to synchronize DeFeel with other devices.
    - Positive trigger 5V
    - Supported BPM range: 5-300
    - Configurable divisions (1/1, 1/2, 1/4, 1/8, 1/16, 1/24)
- Start/Reset In: Used to control play/pause and reset functions.
    - Trigger/Gate 5V
- Gate (CH1 and CH2): Manages gate signals for each channel
    - Gate In/Out: 0/5V
- CV In/Out (CH1 and CH2): Manages 2 CV input and output signals for each channel.
    - CV In/Out: 0/10V

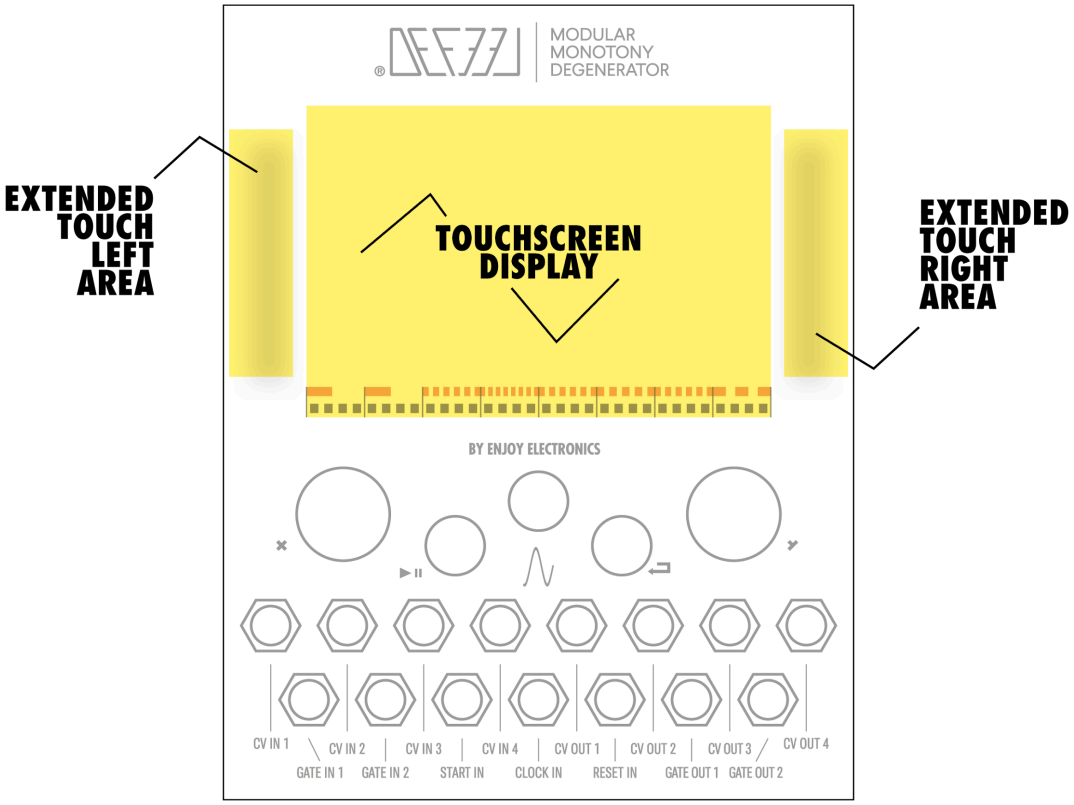
Always verify that the voltage levels of connected devices are compatible.

3. Hardware Interface and Navigation

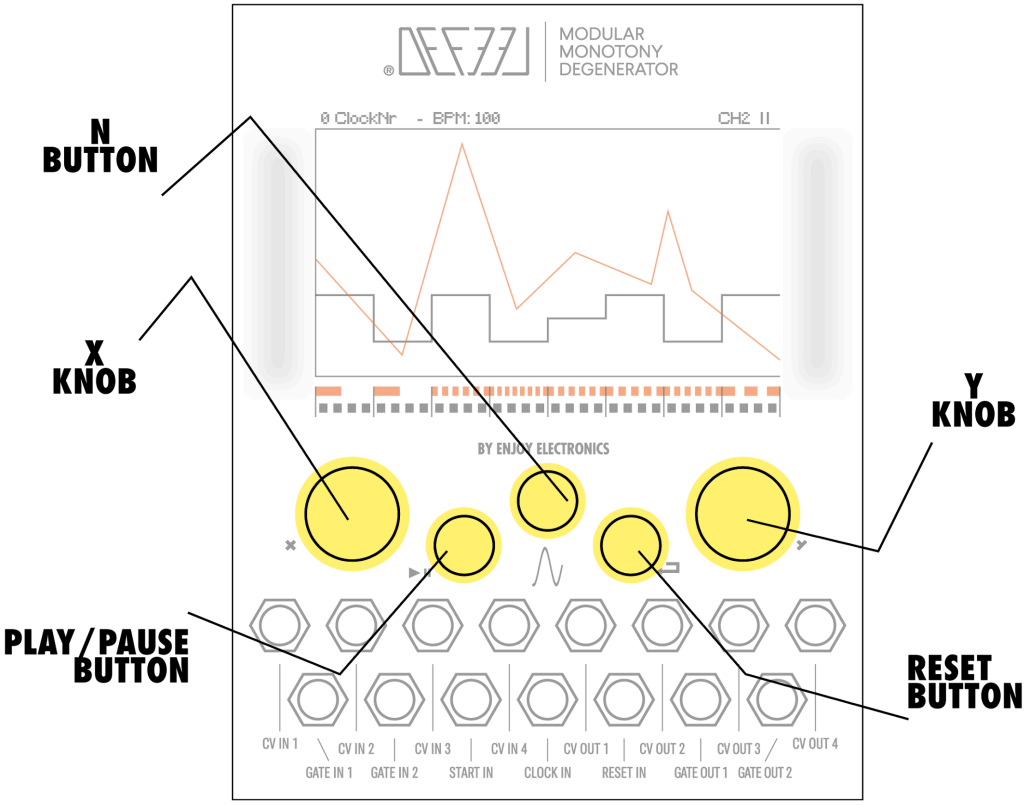
Thanks to innovative touch technology, we have extended the touch-sensitive area beyond the boundaries of the screen. This allows you to navigate menus, set values, and select channels without ever having to cover the display with your fingers, ensuring a clear view of graphs, values, and settings at all times.

The touch interface is divided into three main zones:

- Left Zone (SX): Dedicated to quick access to different modes and menu navigation.
- Central Zone: Reserved for displaying and modifying the main parameters.
- Right Zone (DX): Designed for channel selection (CH1/CH2) and fine adjustment of active parameters.

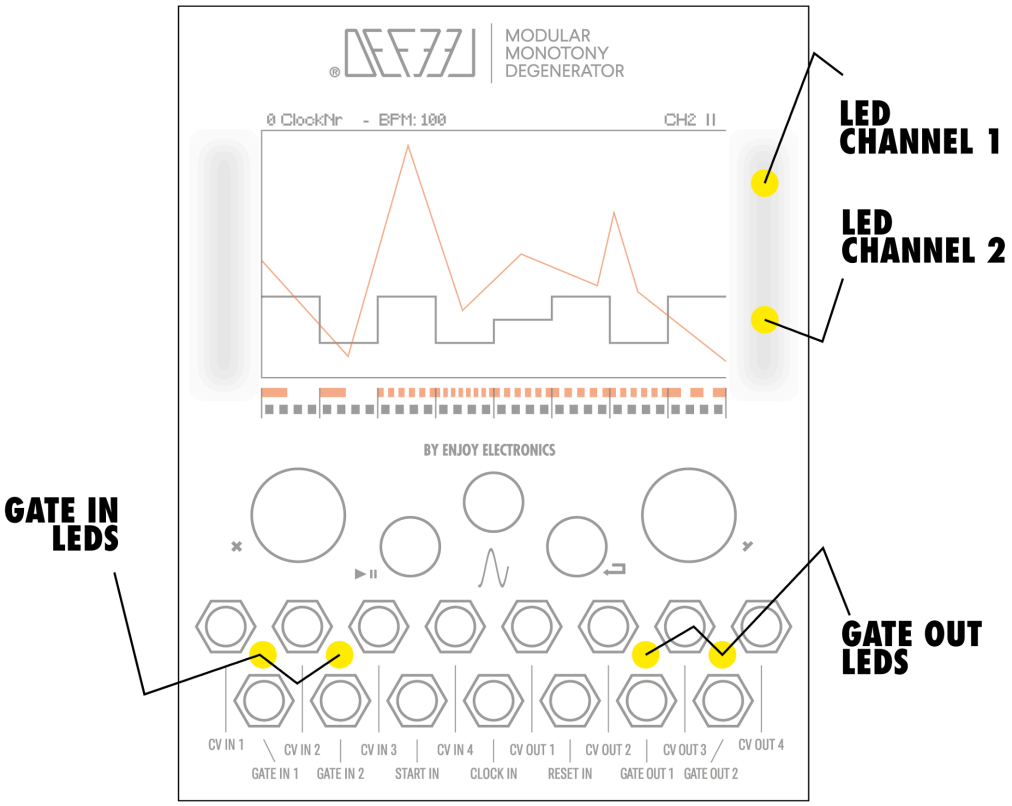


Buttons and Controls



- Button (Play/Stop):
  - Controls the start and pause of the device
  - In pause mode, maintains transparency active, allowing input signals to pass to the output without beginning the gate count
  - The play status is indicated on the display in the upper right
  - The control can also be performed via the dedicated jack on the front panel
- Button (Reset/Manual Step):
  - Resets the counter when pressed and deactivates play
- Button (N) (Modulation/Navigation):
  - Activates selection for parameter modulation in Density, Pattern, and CV modes
- Encoders X and Y:
  - Allow menu navigation and precision adjustments
  - Special functions:
    - Press Encoder X: access to the TIMING menu
    - Press Encoder Y + Encoder X: access to the Settings menu
    - Press Encoder Y in divisor mode: allows non-quantized column settings

LED Indication System



- LED CH1 - Indicates if channel 1 is selected
- LED CH2 - Indicates if channel 2 is selected
- LED GATE IN - Lights up when receiving an input gate signal
- LED GATE OUT - Lights up when outputting a gate signal

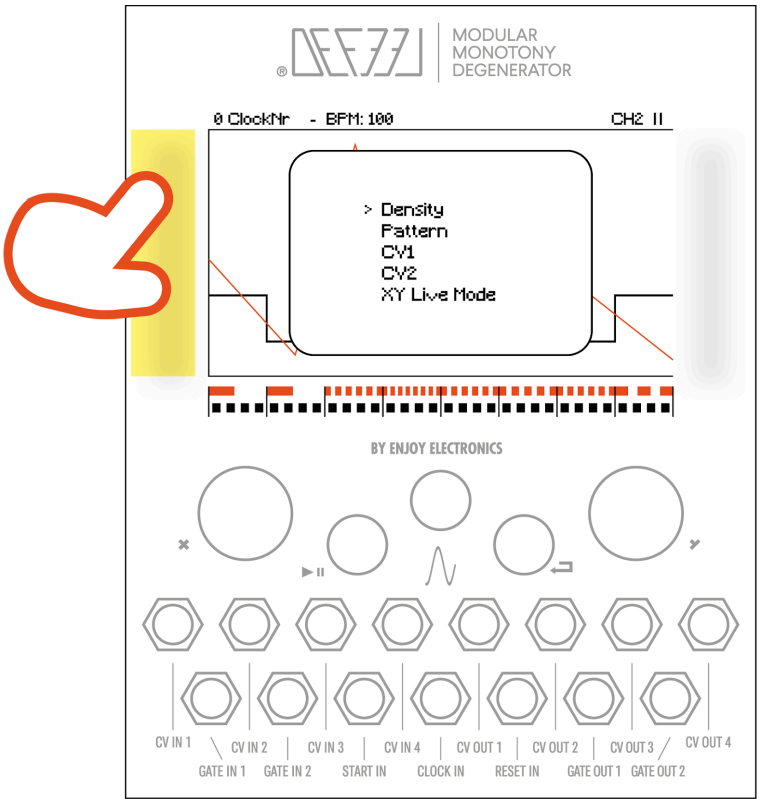
4. Main Operating Modes

The operating modes of DeFeel correspond to the different parameters that can be viewed and modified.
The innovative touch navigation system allows you to instantly switch from one parameter to another with a simple vertical swipe in the left area (SX) of the display, without having to navigate through menus or interruptions to the creative flow.

- Scroll your finger vertically to navigate between available parameters
- Release your finger on the desired parameter to view and modify it

For example:

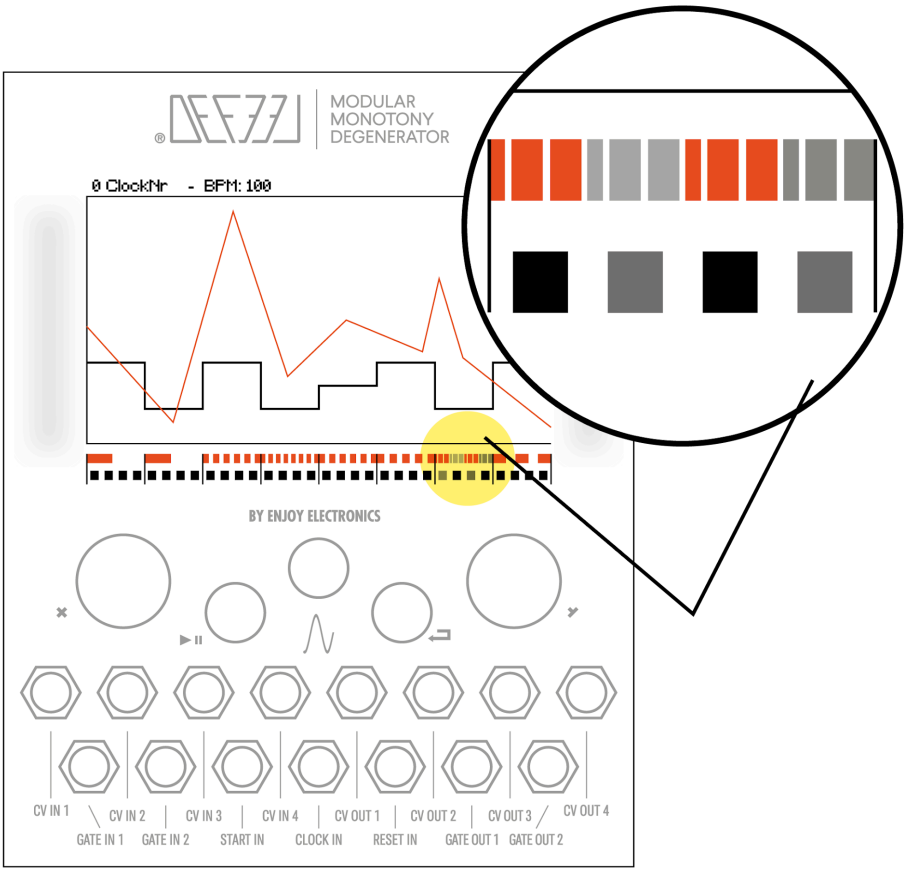
- In Density mode: view and modify the fill density parameters
- In CV1 mode: access the specific controls of the first CV
- In XY mode: activate the XY control mode



This direct and intuitive approach ensures fluid and immediate control during performance, allowing you to modify any parameter in real time without ever interrupting the creative flow.

4.1 Density

The fill is divided into columns, where each column advances for each Clock received.
For each column, you can set the exact number of gates that must be generated within it.
For example, if in the first column I set a density of 7, it means that 7 on/off gates will be generated within the column. By touching and moving your finger on the column via touch, you can see the numerical value of the density set in the upper part of the display. To modify the number of gates, move your finger vertically to increase or decrease the value.
The lower part of the screen shows the number of gates per column using orange rectangles.



Non-Quantized Density (Glide):

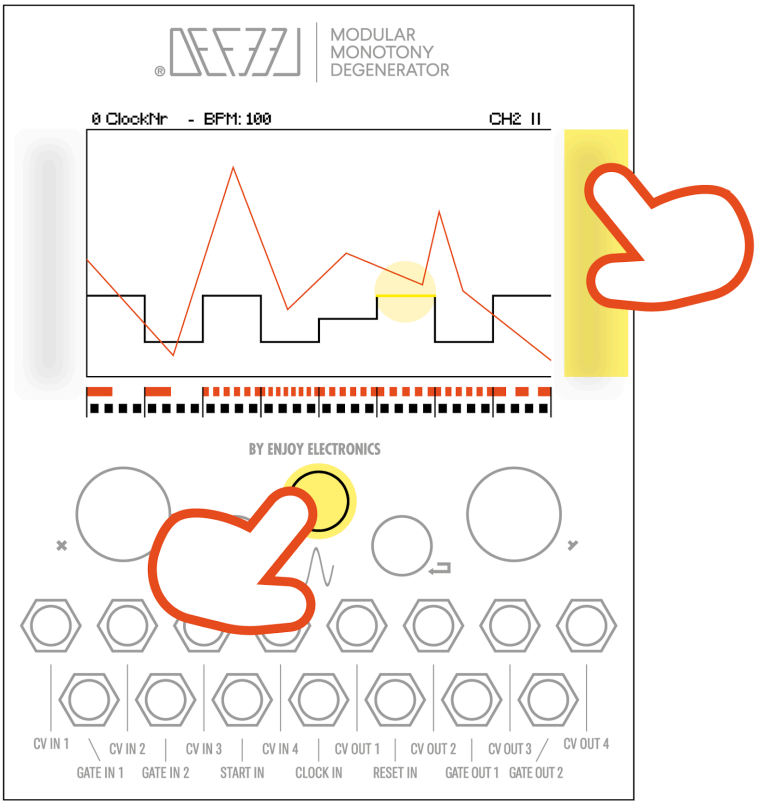
To create more fluid and organic variations, it's possible to set columns with non-quantized values, where the value starts, for example, at 3 and ends at 27. In this case, the gate sequence of that column will have slower values that will increment during the scrolling of the column, from the value of 3 to 27.
To do this, you need to hold down encoder Y - the line of the last selected column will appear in yellow. While holding encoder Y, by dragging the start and end point of the column, it will be possible to set the start and end values. The numerical values will be indicated in the upper area of the display.
The lower part of the display will graphically show the dispersion of gates in the column through orange rectangles.

You can choose the maximum density value and therefore the number of repetitions. The default value is 16, which means that when density is at maximum, it will generate 16 gates within the column. You can set this maximum value up to 64.

Modulation

You can modulate the density values for each column.

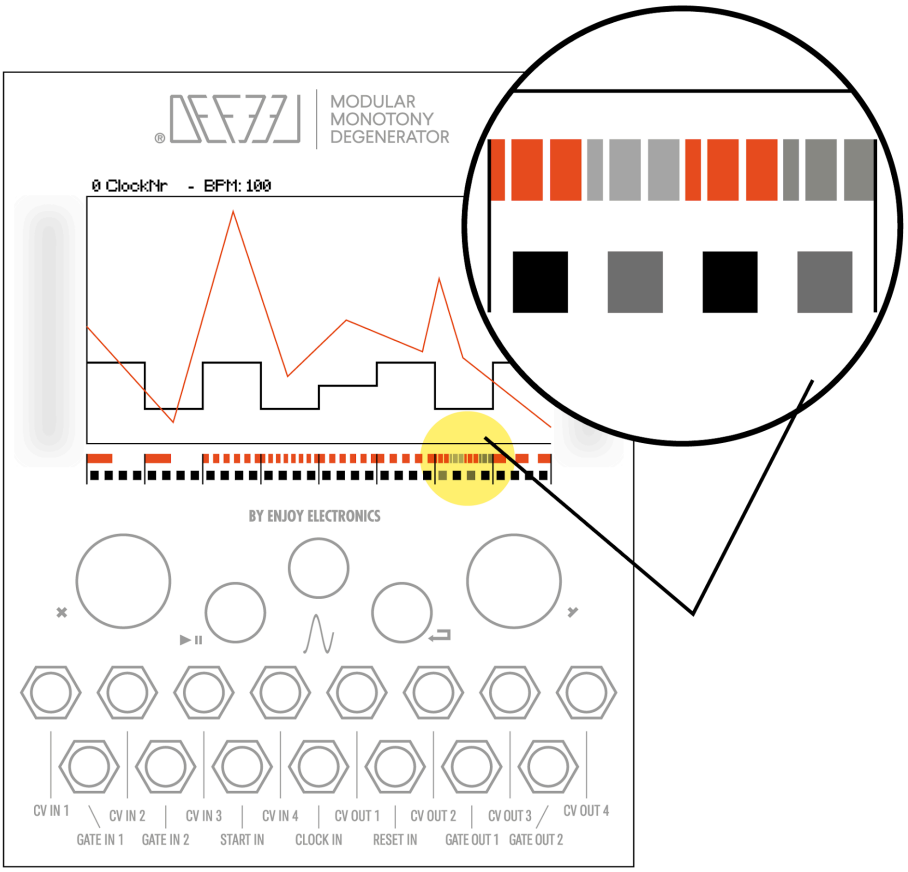
1. Press the N button and select the column to modulate (it will be highlighted in yellow)
2. Use swipe in the right zone to adjust the modulation percentage



4.2 Pattern

Like Density, Pattern also works by column and allows you to create customized rhythmic patterns, activating and deactivating gates within the column.
Each column is divided into 4 sub-columns that can be turned on or off based on the set value, following the binary system. For example:

- Value 0: XXXX (all sub-columns off)
- Value 1: 1XXX (first sub-column active)
- Value 2: X1XX (second sub-column active)
- Value 3: 11XX (first two sub-columns active)
- Value 15: 1111 (all sub-columns active)

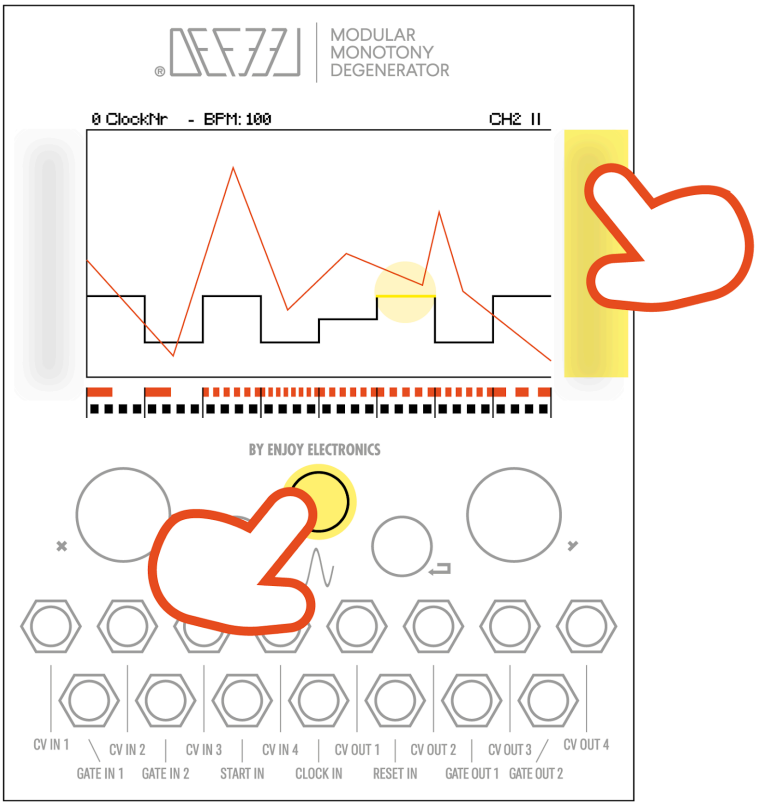


When a sub-column is active, it allows the passage of gates set by the density. For example, with value 5 (which in binary is 1X1X), the first and third sub-columns are active, allowing the passage of gates set by the density only in those positions.
In the settings menu, you can select which patterns will be available and which disabled, allowing you to further customize the behavior of the device according to your creative needs.

Modulation

You can modulate the pattern values for each column.

1. Press the N button and select the column to modulate (it will be highlighted in yellow)
2. Use swipe in the right zone to adjust the modulation percentage



4.3 CV Control

CV control works differently from density and pattern: instead of operating by columns, it allows you to freely draw the progression of CVs during the fill through vectors displayed on the screen. Each point of the vector can be moved on two axes:

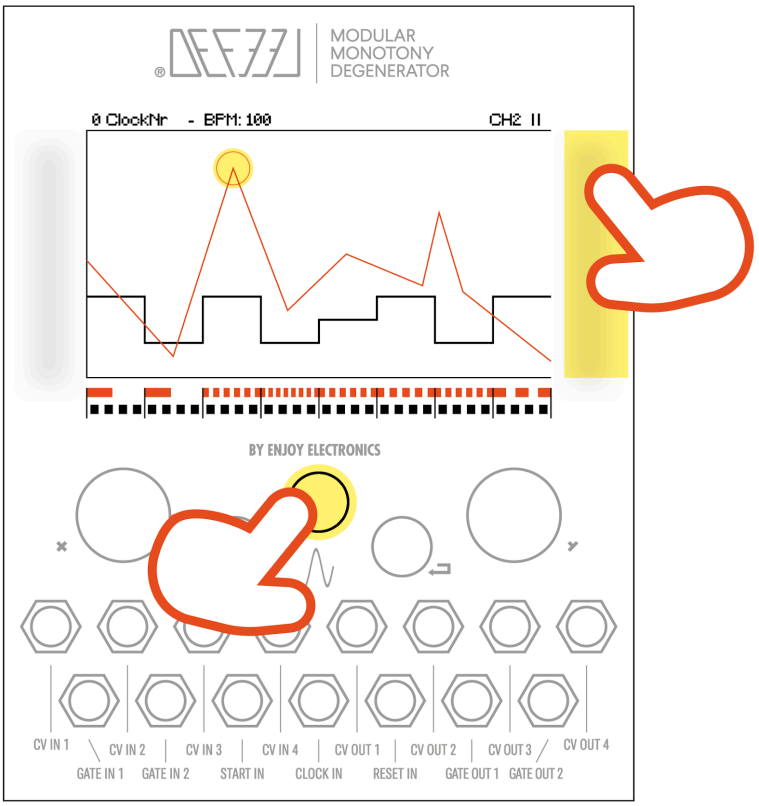
- Y axis: CV intensity
- X axis: time within the fill. Important: each point can be moved horizontally only in the area between the previous point and the next one. For example, point 3 can move on the X axis only between the position of point 2 and that of point 4.

Modulation

You can automate points by associating them with the integrated LFO.

1. Press the N button to select a point (it will be highlighted with a small circle)
2. Use swipe in the right zone to adjust the modulation percentage

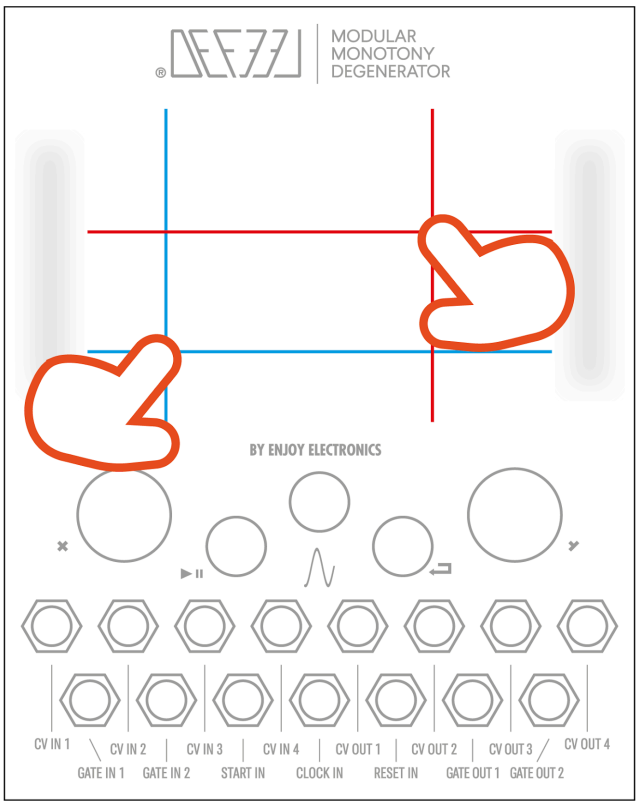
Details on modulation are available in the dedicated section.



You can set the quantization of CV values, along with the musical scale, root note, and minimum and maximum values, by accessing the Settings Menu (see dedicated paragraph).

4.4 XY Live

Thanks to the sensitive multitouch display and high processing speed, XY Live mode allows you to work in real time, generating gates and controlling CVs through touches, swipes, and scrolls on the display.



Basic Control:

- First finger:
  - Y axis: adjusts density
  - X axis: adjusts CV value
- Second finger:
  - Y axis: adjusts CV value
  - X axis: adjusts CV value

5. Settings Menu

The Settings Menu is accessible by simultaneously pressing the two encoders:

1. Hold down Encoder Y (ENCY)
2. While ENCY is pressed, also press Encoder X (ENCX)

Within the Settings Menu, you will find three main sections:

- Fill
- Passthrough
- Global Settings

Fill Menu

In the Fill Menu, you can configure the quantization settings when generating the FILL, for each CV and for each channel:

- **Quantization**:
  - When activated, allows you to set:
    - Musical scale (Scale)
    - Root note (Root Note)
    - Note range (Min/Max Note), in relation to the minimum and maximum values of the CV line
- **No Quantization**:
  - When deactivated, you can still define:
    - Minimum value in volts
    - Maximum value in volts

These settings allow precise control over CV outputs, both for melodic applications (with quantization) and for free modulations (without quantization).

Passthrough Menu

In the Passthrough Menu, you can configure, for each CV and for each channel, how signals will be managed when the device is in transparency mode:

- **Quantization**:
  - When activated, the input value is quantized according to:
    - Selected musical scale
    - Set root note
- **No Quantization**:
  - When deactivated, the CV signal passes unchanged from input to output

Global Settings

In the Global Settings, you can configure:

- Clock PPQN (Pulse Per Quarter Note):
  - Settable from 1 to 32
  - 1 means that for each step, one clock is inserted
  - Modular systems and sequencers generally operate at 24 PPQN

    - When the setting is correct, the BPM value will be displayed in the upper part of the display, corresponding to the real clock value received
- Settings Save:
    - From the Settings menu, you can save all configured parameters
    - Saved settings will be maintained even after the device is turned off
    - Upon restart, DeFeel will automatically load the previously saved parameters

6. Fill and Timing

In the Timing Menu, you can set all the temporal parameters that control the behavior of the fill:

- Start Fill (1-64): Determines after how many clocks the fill should start
- Fill Duration (1-16): Establishes for how many clocks/steps the fill should last
- Loop Length (4-64): Defines the total length of the cycle after which the fill restarts
- Direction: Allows you to choose the direction of fill execution:
    - Forward (FW): forward execution
    - Reverse (RW): backward execution
    - Forward-Reverse (FW-RW): alternation of both directions
- Max Density: Sets the maximum number of gates that can be generated for each column

Example of Operation

Let's imagine this configuration:

- Start Fill: 9
- Fill Duration: 12
- Loop Length: 16

The module will work like this:

1. Counts the first 8 clocks in transparency mode
2. At the 9th clock, it begins the fill
3. Executes the fill for 12 clocks
4. Returns to transparency mode for 4 clocks (the remainder of the 16-clock loop)
5. At the end of the loop, the count restarts from zero

This cycle will continue to repeat until it is modified or interrupted.

7. LFO Modulation System

7.1 LFO Assignment

- For Density or Pattern
    - Press the N button to activate modulation mode
    - The selected column will be highlighted in yellow
    - Use swipe in the right zone to increase or decrease the modulation percentage
- CV Points
    - Press the N button to activate modulation mode
    - The selected point will be highlighted with a small circle

- Use swipe in the right zone to increase or decrease the modulation percentage

8. Usage Tips and Troubleshooting

8.1 Troubleshooting

Common issues and their solutions:

- No output signals: Check connections and verify that the module is in play mode
- Incorrect timing: Ensure the PPQN setting matches your clock source
- BPM not displaying correctly: Adjust the PPQN setting in Global Settings

9. Technical Specifications

- CV Output Range: 0-10V, up to 10 octaves (1V/octave).
- Gate Out: 0/5V.
- Clock In/Out: Accepts positive triggers, supported BPM range from 5 to 300.

10. Firmware Update:

Updating the firmware can improve stability, fix bugs, and add new features.

By registering your DeFeel on our website, you will receive email notifications about available updates.

Updating from Our Website

In the **DeFeel** menu section, you can access the **DeFeel Web Programmer** page. To perform the update, you need an updated version of Google Chrome (version 61 or later).

1. Connect your **DeFeel** directly to your PC or Mac without using a USB hub.
2. On the **DeFeel Web Programmer** page, click the **"Connect"** button to establish a connection.
3. Follow instructions on the update page.

The installed firmware version is displayed at startup in the bottom right corner, under the **DeFeel** logo. Perform the update if a newer version is available.

WARRANTY POLICY

ENJOY ELECTRONICS devices come with a **one-year limited warranty** (or longer if required by applicable legislation), starting from the date of the original purchase. Proof of purchase, such as an invoice or receipt, is required to obtain warranty service.

If the device requires repair during the warranty period, **no charges will be applied for parts or labor**. This warranty is transferable to other owners if the ENJOY ELECTRONICS device is resold during the warranty period.

This warranty does not cover:

- Damage, deterioration, or malfunction resulting from **accident, negligence, misuse, abuse, improper installation, or failure to follow the instructions** in the User Manual.
- Damage incurred during **shipment** (claims must be presented to the carrier).
- Repair or attempted repair by **anyone other than ENJOY ELECTRONICS or a certified ENJOY ELECTRONICS repair center**.
- Any unit that has been **altered** or where the serial number has been **defaced, modified, or removed**.
- **Normal wear and tear**, as well as any **periodic maintenance**.
- Deterioration due to **perspiration, corrosive atmospheres, or other external causes** such as extreme temperatures or humidity.
- Damage resulting from **power surges, electrical abnormalities, lightning, or Acts of God**.
- **RFI/EMI (interference/noise)** caused by improper grounding or the use of uncertified equipment.
- **Any other damages** determined by ENJOY ELECTRONICS to be caused by user negligence or misuse (normal service rates will apply).

If the issue is determined to be a **manufacturer defect** or failure due to defective materials, we will **repair, return, or exchange** the device free of charge, at our discretion.

WARRANTY SERVICE PROCEDURE FOR DEVICES PURCHASED FROM THE ENJOY-LAB ONLINE SHOP:

If you require warranty service, please **open a support ticket on our website**.

- A return authorization must be obtained before sending a unit for service.
- The customer is responsible for **shipping costs** when sending the product to an ENJOY ELECTRONICS repair center.
- If the warranty covers the repair, **ENJOY ELECTRONICS will cover the return shipping costs** to the customer.

- If the device is **dead on arrival (DOA)** or experiences a hardware malfunction **within 14 days of the original purchase date**, **ENJOY ELECTRONICS will cover both inbound and return shipping costs** to a certified repair center.

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