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Please consider the environment before printing this document.

This manual was updated on July 21, 2026.

Functionalities of this product are dependent on the Squarp instruments Hermod+, and may differ depending on the firmware version. Latest firmware of Hermod+ at the time of writing: hermodplusOS 3.0, released on May 27, 2026

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1. xp32 paired with Hermod+ manual

1.1. Overview

The xp32 is an expander module for Hermod+, which offers 32 fully-configurable CV outputs.

Each output is individually configurable - it has its own voltage range and can output a variety of signals, not only CV but also Gate signals.

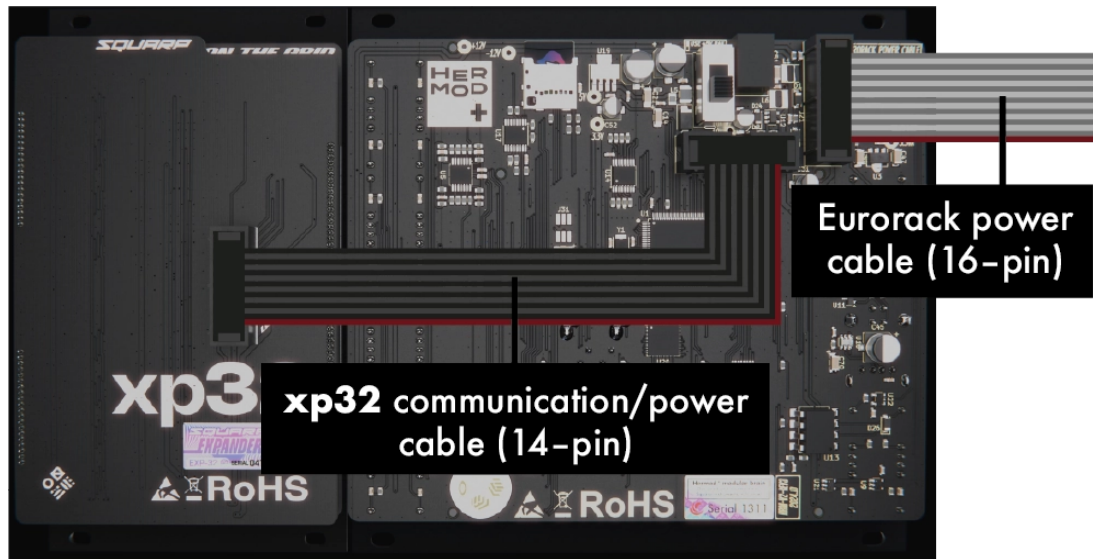
Combined with the features of Hermod+, it can not only be used for the usual CV/Gate pair, but also to output complex automation, envelopes, LFOs, clocks, etc.

Despite its extensive configurability, the xp32 was designed to remain user-friendly. Buttons provide quick access to modes and menus related to the xp32, and LEDs provide real-time feedback of the output voltages.

The user interface of Hermod+ was carefully revised in version 2.00 to seamlessly interface with the xp32.

1.2. Wiring it up

1. Make sure your Hermod+ is running the firmware version 2.00 or newer. Otherwise, the xp32 will not be detected.
2. Make sure your Eurorack system is unplugged and **NOT POWERED**.
3. Connect the 14-pin expander ribbon cable between your Hermod+ and xp32. This cable provides power to the expander, and carries signal for high-speed bidirectional communication.

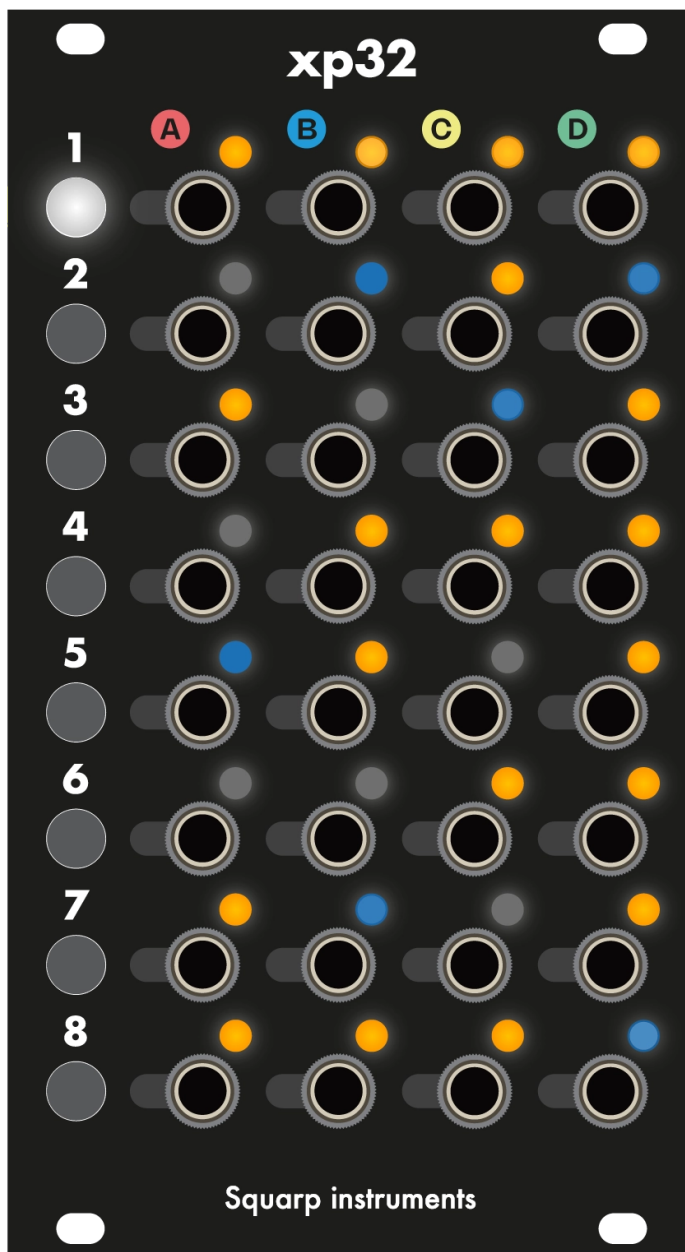


4. Power your system on, and Hermod+ should automatically recognize the xp32. The "**XP32 DETECTED**" popup should appear on Hermod+ during startup.
5. The xp32 is now ready for use. By default, when no project is loaded, all 32 bipolar signal LEDs remain off (no brightness). The 8 track buttons ● glow at low brightness, indicating that the tracks are empty and unselected. To select a track, simply **Press** any of the xp32 track buttons ●: this button will glow at maximum brightness, indicating the track is now selected.

The 32 additional outputs of xp32 are organized as 8 tracks of 4 outputs. These 8 tracks are accessible on the second page of the **track** mode, where the **MIDI** tracks are now displayed as **XP32** tracks (but you can still use these xp32 tracks to send MIDI events).

1.3. Bipolar signal LEDs

Each of the 32 CV outputs features a dual-colour LED indicator for visual feedback of the signal level.



- orange LED — output voltage is positive (up to +10V).
- blue LED — output voltage is negative (down to -10V).
- no brightness — output voltage is exactly 0V.

1.4. Selecting a xp32 track

When your xp32 is connected to Hermod+, its eight tracks are automatically mapped to Hermod+ **MIDI** tracks (**TR1** to **TR8**).

To select a track on the xp32, simply **Press** any of the xp32 track buttons:

- 1 ● **TR1**
- 2 ● **TR2**
- 3 ● **TR3**

- 4 ● **TR4**
- 5 ● **TR5**
- 6 ● **TR6**
- 7 ● **TR7**
- 8 ● **TR8**

The xp32 track button ● will light up at full brightness if this xp32 track is selected. The button will glow at medium brightness to indicate the track contains data but is not currently selected.

Once a track is selected, you can edit it directly from Hermod+. You can add and edit notes, record and program modulations, add MIDI effects, mute or unmute the track, and more.

Note Working with xp32 tracks is nearly identical to working with Hermod+'s CV/Gate tracks. The only difference is that track layouts are not supported on xp32 tracks. Instead, each xp32 track provides four configurable CV outputs (see the next section for configuration details).

To select a Hermod+ **CV/GATE** tracks (**TR1** to **TR8**), simply press the corresponding track button ● on Hermod+.

Tip While in Track Mode: use Hermod+'s **track** button to toggle between the 8 **CV/GATE** tracks and the 8 **XP32** tracks, or rotate the encoder, giving you access to a total of 16 tracks.

1.5. Configuring the output types

Each xp32 track (1 to 8) has four outputs: **A B C D**. These outputs can be customized to respond to specific data types.

By default, the outputs are configured as **PITCH**, **GATE**, **VELO** and **MOD**.

Hold a track button ● to access the **XP32 OUTPUTS** page, where you can configure the output types to suit your needs.



Rotate the encoder on Hermod+ to scroll through the **A B C D** outputs and Press the encoder to select an output for configuration.

Scroll through the various data types available:

- **PITCH** – note pitch
- **GATE** – note gate
- **VELO** – note velocity
- **MOD, MOD2, MOD3, MOD4** – modulations
- **AFTC** – aftertouch
- **CLK** – clock (various rates can be defined)
- **CC00 .. CC119** – MIDI Control Changes

Press **X** to further configure the selected output. Please refer to the following "Output configuration" sections for more detail.

Tip Your xp32 configuration is saved with your Hermod+ project. To streamline your workflow, you can create and save custom templates as projects for easy recall.

1.6. Output configuration – pitch

PITCH refers to the representation of musical pitch, which corresponds to the frequency of a note, expressed as a precise voltage level. As with Hermod+, the voltage span is 10V, which covers 10 octaves when using the **V/OCTAVE** standard.

CV PITCH RANGE **-5V to +5V** **-4V to +6V** ... **0V to +10V**

Offsets the pitch span, for example:

-5V to +5V – default range.

0V to +10V – range to be used for modules using only positive voltages.

OUTPUT STANDARD **V/OCTAVE** **1.2V/OCTAVE** **HZ/V**

Pitch information is most often expressed as a control voltage using the **V/OCTAVE** standard. It is used by Eurorack modules and most other modular systems.

However some synthesizers require the use of other standards to respond correctly. The **1.2V/OCTAVE** standard is mainly used by Buchla-compatible systems, while the

HZ/V standard is an older standard used by the Korg MS series and the Yamaha CS series, among others.

The default -5V +5V voltage span of your pitch output allows 10 octaves of **V/OCTAVE** notes, 8 octaves of **1.2V/OCTAVE** notes, and only 3 octaves of **HZ/V** notes.

	V/OCTAVE	HZ/V
C0	- 5 V	+ 0.0312 V
C1	- 4 V	+ 0.0625 V
C2	- 3 V	+ 0.125 V
C3	- 2 V	+ 0.25 V
C4	- 1 V	+ 0.5 V
C5	+ 0 V	+ 1 V
C6	+ 1 V	+ 2 V
C7	+ 2 V	+ 4 V
C8	+ 3 V	+ 8 V
C9	+ 4 V	out of range
C10	+ 5 V	out of range

Comparison of the available notes in the Volt-per-octave standard, and the Hertz-per-Volt standard

CV OUT FINETUNE -100 CENTS ... +0 CENTS ... +100 CENTS

The finetune parameter can precisely offset the output voltage in terms of "cents". Each "cent" is one hundredth of a semitone.

This can be used to ensure that the pitch produced by the connected oscillator/synthesizer is accurate and in tune with other instruments or devices. You can also use it to create subtle out-of-pitch sounds.

CV OUT BEND RANGE +-1 SEMITONE +-2 SEMITONES +-5 SEMITONES +-1 OCTAVE ... +-5 OCTAVES

Sets the output voltage range for incoming pitchbend events.

1.7. Output configuration – gate

GATE signals are binary voltages that switch between a low state and a high state, with the high state indicating when a note or event is active. You can also use a gate to trigger a drum or a logic state.

GATE RETRIG **ON** **OFF**

ON – When two notes overlap (one note starts before the previous one ends), the gate will retrigger (i.e. shortly go low, then go back up) to separate the notes.

OFF – When two notes overlap, the gate signal remains continuous, and only the CV pitch will change, tying the two notes together. Use this option for a legato or glide effect.

TRIG NOTE **-** **C0** **...** **C10**

Specify a particular note to trigger this gate. For example, if this parameter is set to **C5**, only C5 notes will trigger this gate. This is useful for controlling drums with a single track: up to 4 drum voices can be triggered by setting 4 different trigger notes.

Note By default, the trigger note is unspecified, meaning any note will trigger the gate.

GATE LOW **-10V** **...** **+10V**

Set the gate "low state" voltage value.

GATE HIGH **-10V** **...** **+10V**

Set the gate "high state" voltage value.

1.8. Output configuration – velocity, aftertouch, MOD and CC

The output types **VELO**, **AFTC**, **MOD**, **MOD2**, **MOD3**, **MOD4** and **CC** can be configured with a custom voltage range.

CV RANGE MIN -10V ... 0V ... +10V

Set the minimum voltage of this output.

CV RANGE MAX -10V ... 0V ... +10V

Set the maximum voltage of this output.

Tip If the **MIN** is higher than the **MAX**, the output signal will be inverted.

Note The **CC** data type allows you to transform any MIDI CC (received via Hermod+'s USB or MIDI inputs) into a CV output. CC events can also be generated using Hermod+'s LFO or ENV effects.

1.9. Output configuration – clock

Gate clocks provide a timing reference or pulse that drives other devices or processes to follow a specific rhythm or pattern. It's often used in sequencers, drum machines, or any system that requires precise timing to trigger events. Clock signals can synchronize modules, trigger envelopes, reset sequencers, and many other time-based processes.

CLOCK RATE 1/96 = 24 PPQN 1/64 = 16 PPQN 1/48 = 12 PPQN 1/32 = 8 PPQN
1/24 = 6 PPQN 1/16 = 4 PPQN 1/12 = 3 PPQN 1/8 = 2 PPQN 1/6 = 1.5 PPQN
1/4 = 1 PPQN 1/3 = 0.75 PPQN 1/2 = 0.5 PPQN 1 BAR 2 BARS 3 BARS
4 BARS 8 BARS 16 BARS 32 BARS 64 BARS 128 BARS

The clock rate determines how often the clock signal triggers events.

The two most common ones are:

1/96 = 24 PPQN

This is the standard MIDI clock rate, it sends 24 pulses per quarter note (PPQN).

1/16 = 4 PPQN

sends a pulse every sixteenth note.

1.10. Track configuration

Hold a xp32 track button ● to enter the **XP32 OUTPUTS** page.

Press **Y** to access the track's configuration menu.



You will find settings identical to those of regular Hermod+ tracks:

PLAYER

- Quantize
- Apply sustain
- Transpose

INPUTS

- Input port
- Input channel
- Input MIDI modulation
- Input note
- Input modulation
- Trig generators

MIDI OUTPUTS

- Output port
- Output channel
- Destination modulation
- Destination pitch
- Destination aftertouch

Please refer to the "track configuration" sections of the Hermod+ manual for more detail.

Note Selecting **XP32** will take you to the **XP32 OUTPUTS** page.

Tip You can still use your xp32 tracks to send MIDI. By default, these tracks are configured to send MIDI on channels 1 to 8.

Tip The xp32 can also serve as a powerful MIDI-to-CV/GATE converter. Adding/recording events on tracks is optional: you can simply stream MIDI input to the xp32's CV/GATE outputs.

1.11. Scope

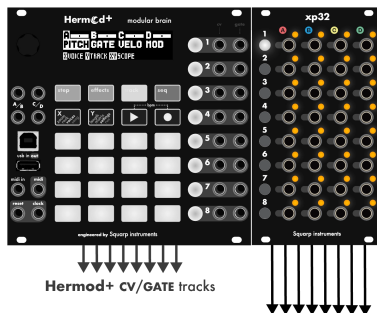
Hold a xp32 track button ● to enter the **XP32 OUTPUTS** page.

Hold **Y** to open the "oscilloscope" view and monitor the track's 4 output values in real-time.



1.12. Use case example: default layout

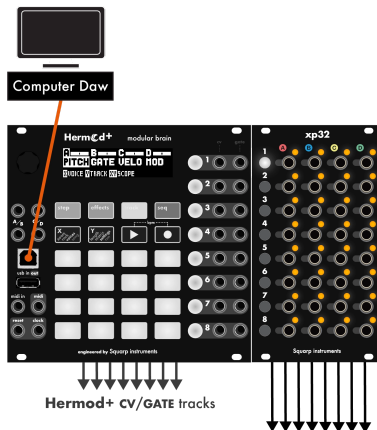
Hermod+ plays its 8 **CV/GATE** tracks, but also plays the 8 additional "**MIDI**" tracks, which are routed to the xp32. This is default layout when creating an empty project. This configuration is perfect to sequence your eurorack instruments with expressiveness, as xp32 will output the velocity and the modulation of your recorded pattern.



TR1	note sequence for eurorack instrument 1			
	PITCH	GATE	VELOCITY	MOD
TR2	note sequence for eurorack instrument 2			
	PITCH	GATE	VELOCITY	MOD
TR3	note sequence for eurorack instrument 3			
	PITCH	GATE	VELOCITY	MOD
TR4	note sequence for eurorack instrument 4			
	PITCH	GATE	VELOCITY	MOD
TR5	note sequence for eurorack instrument 5			
	PITCH	GATE	VELOCITY	MOD
TR6	note sequence for eurorack instrument 6			
	PITCH	GATE	VELOCITY	MOD
TR7	note sequence for eurorack instrument 7			
	PITCH	GATE	VELOCITY	MOD
TR8	note sequence for eurorack instrument 8			
	PITCH	GATE	VELOCITY	MOD

1.13. Use case example: DAW to CV

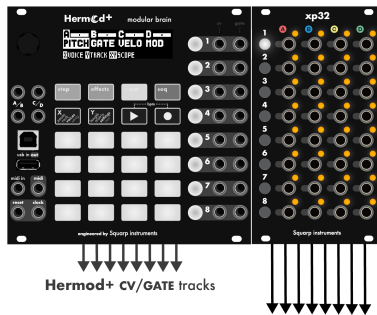
Thanks to Hermod+, you can use your xp32 as an advanced MIDI USB to CV interface. Your favorite DAW can output note patterns and automation (thanks to CC messages), and the xp32 will be used to dispatch these sequences to your modular system.



TR1	USB input (notes and CC message) to CV/Gate			
	PITCH	GATE	VELOCITY	CC31
TR2	USB input (notes and CC message) to CV/Gate			
	PITCH	GATE	VELOCITY	CC32
TR3	USB input (notes and CC message) to CV/Gate			
	PITCH	GATE	VELOCITY	CC33
TR4	USB input (CC messages) to CV			
	CC4	CC14	CC24	CC34
TR5	USB input (CC messages) to CV			
	CC5	CC15	CC25	CC35
TR6	USB input (CC messages) to CV			
	CC6	CC16	CC26	CC36
TR7	USB input (CC messages) to CV			
	CC7	CC17	CC27	CC37
TR8	USB input (CC messages) to CV			
	CC8	CC18	CC28	CC38

1.14. Use case example: preset manager

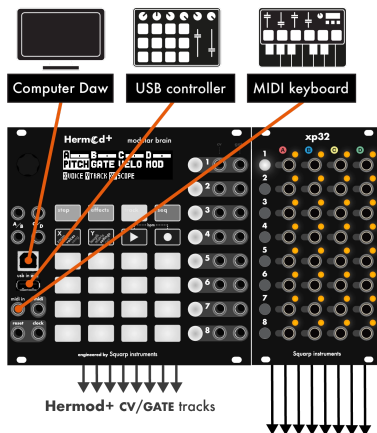
You can use the CV to output a fixed voltage for “recalling a preset” on your modular system. When changing the Hermod+ sequence or when loading a new song, these outputs can send new CV values (programmed in Hermod+ thanks to the internal automation **MOD MOD2 MOD3 MOD4**).



TR1	preset for eurorack instrument 1			
	MOD	MOD2	MOD3	MOD4
TR2	preset for eurorack instrument 2			
	MOD	MOD2	MOD3	MOD4
TR3	preset for eurorack instrument 3			
	MOD	MOD2	MOD3	MOD4
TR4	preset for eurorack instrument 4			
	MOD	MOD2	MOD3	MOD4
TR5	preset for eurorack instrument 5			
	MOD	MOD2	MOD3	MOD4
TR6	preset for eurorack instrument 6			
	MOD	MOD2	MOD3	MOD4
TR7	preset for eurorack instrument 7			
	MOD	MOD2	MOD3	MOD4
TR8	preset for eurorack instrument 8			
	MOD	MOD2	MOD3	MOD4

1.15. Use case example: mixed configuration

Feel free to customize your CV outputs to suit even the most intricate modular setups. The example below shows the flexibility of the xp32 with a complex routing:



TR1	note sequence for eurorack instrument 1			
	PITCH	GATE	VELOCITY	MOD
TR2	note sequence for eurorack instrument 2			
	PITCH	ADSR	AFTC	MOD
TR3	quad LFO, using four LFO FX			
	MOD	MOD2	MOD3	MOD4
TR4	drum sequence			
	GATE C5	GATE D5	GATE E5	GATE F5
TR5	sequenced automation			
	MOD	MOD2	MOD3	MOD4
TR6	multi synced clocks			
	CLK 1/16	CLK 1/96	CLK 1/6	CLK 1/3
TR7	MIDI keyboard input to CV/Gate			
	PITCH	GATE	AFTC	CC1
TR8	USB input (CC messages) to CV			
	CC8	CC18	CC28	CC38