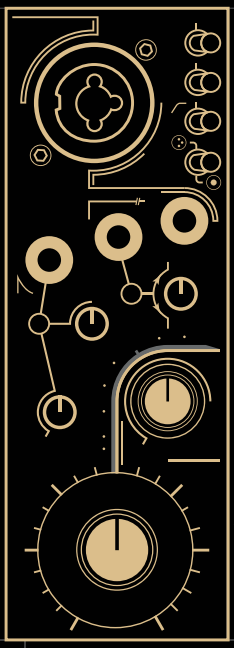
INSTRUŌ | SPECIALIST SYNTHESIZERS



íre

External Input Module

User Manual

Contents

Description

The Instruō íre is your gateway to bringing the outside world into your Eurorack system. Designed for seamless, plug-and-play integration, íre lets you connect microphones, instruments, and even line-level sources directly into your modular ecosystem with both clarity and colour.

íre is both a high-quality FET preamp for the instrument/line channel and transformer and opamp for mics. Both are equipped with essentials such as phantom power, pad, and high-pass filtering – ensuring pristine or characterful gain staging for any source. Additionally, with its built-in envelope follower and comparator, íre transforms incoming audio into dynamic control signals, unlocking interesting ways to interact with your modular system.

Features

- Microphone and instrument preamp
- Phantom power
- Pad
- High pass filter
- Envelope follower
- Comparator

Installation

1. Confirm that the Eurorack synthesizer system is powered off.
2. Locate 8 HP of space in your Eurorack synthesizer case.
3. Connect the 10 pin side of the IDC power cable to the 2x5 pin header on the back of the module, confirming that the red stripe on the power cable is connected to -12V.
4. Connect the 16 pin side of the IDC power cable to the 2x8 pin header on your Eurorack power supply, confirming that the red stripe on the power cable is connected to -12V.
5. Mount the Instruō íre in your Eurorack synthesizer case.
6. Power your Eurorack synthesizer system on.

Note:

This module has reverse polarity protection.
Inverted installation of the power cable will not damage the module.

Features

- Width: 8HP
- Depth: 27mm
- +12: 35mA
- -12: 35mA

íre |ˈiːɹə| noun (level): a stage within a process;
a position within an unfolding flow of change

Key

1. XLR / TS Input
2. Phantom Power Toggle (48V)
3. Pad Toggle (-20)
4. HPF Toggle
5. Input Toggle
6. Gain
7. VU Meter
8. Output Level
9. Output (OUT)
10. Envelope Follower Attack
11. Envelope Follower Release
12. Envelope Output
13. Envelope Indicator
14. Comparator Threshold (THRESH)
15. Comparator Gate Output
16. Comparator Gate Indicator

Input / Output

XLR/TS Input: Allows for either microphone level or instrument level signals to be amplified to modular level signals.

Microphone level input

- Gain = 60dB
- Z = ~ 2.8 kΩ
- Differential

Instrument level input

- Gain = > 40 dB
- Z = 1 MΩ
- Single Ended

- Although optimized for instrument level signals, the impedance of the instrument level input is suitable for line level signals as well.

Phantom Power Toggle (48V): Provides +48V to the microphone level signal when the **Input Toggle** is in its left position.

- Always enable and/or disable phantom power with a condenser microphone already connected to íre. Connecting and/or disconnecting a condenser microphone to íre with phantom power engaged can damage the condenser microphone.
- When the **Phantom Power Toggle** is in its left position, phantom power is enabled.
- When the **Phantom Power Toggle** is in its right position, phantom power is disabled.

Pad Toggle (-20): Attenuates microphone input signal by -20 dB.

- When the **Pad Toggle** is in its left position, the pad is enabled.
- When the **Pad Toggle** is in its right position, the pad is disabled.

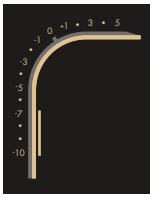
HPF Toggle: Applies a high pass filter with a cutoff frequency of 80 Hz to the input signal.

- When the **HPF Toggle** is in its left position, the high pass filter is enabled.
- When the **HPF Toggle** is in its right position, the high pass filter is disabled.

Input Toggle: Selects between **XLR** microphone level signals or **TS** instrument/line level signals.

- When the **Input Toggle** is in its left position, **XLR** microphone level source is selected.
- When the **Input Toggle** is in its right position, **TS** instrument level source is selected.

Gain: Sets the amount of preamplifier gain applied to the signal present at the **XLR/TS Input**.



VU Meter: Provides LED indication of the signal present at the **Output (OUT)**

- The transitional point of white LED illumination to amber LED illumination is "0 dB" relative to 3.5Vrms (the rms voltage of a ±5V sine wave).

Level: Attenuator of the final output signal.

Output (OUT): Output for the final output signal.

Envelope Follower

Attack: Manual attack time control for the generated envelope signal.

- Changes to this parameter apply slew to the generated envelope signal's attack time.

Release: Manual decay time control for the generated envelope signal.

- Changes to this parameter apply slew to the generated envelope signal's decay time.

Envelope Output: Unipolar positive envelope output.

Envelope Indicator: Provides LED indication of the envelope signal's shape and amplitude.

Comparator

Comparator Threshold (THRES): Manual control that sets the threshold of the comparator relative to the **Envelope Follower** signal.

Comparator Gate Output: Gate output of comparator.

- If the **Envelope Follower** signal exceeds the **Comparator Threshold**, a gate signal is generated at the **Comparator Gate Output**.

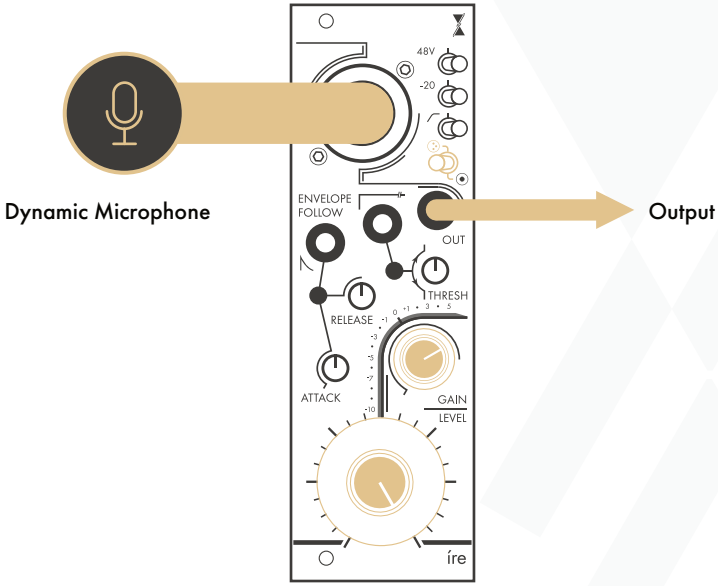
Comparator Gate Indicator: Provides LED indication of the gate signal.

Patch Examples

Dynamic Microphone Amplification

Summary:

A dynamic microphone is converted from microphone level to modular level.



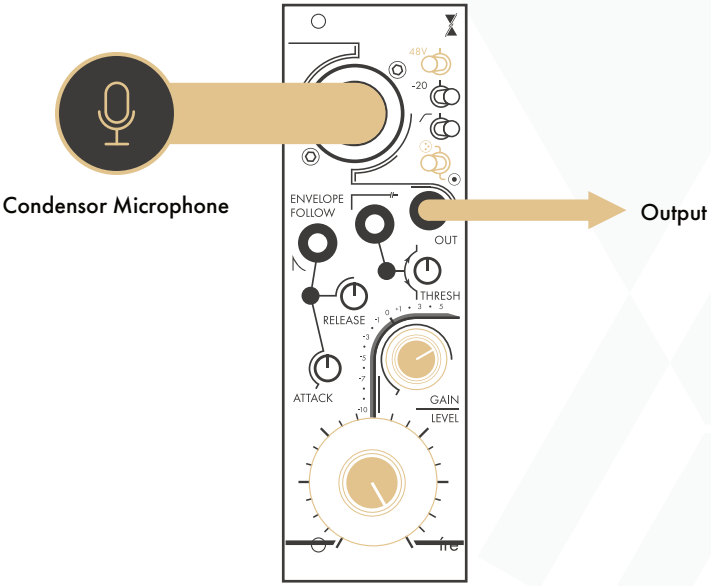
Audio Path:

- Connect the output of a dynamic microphone to the **XLR/TS Input** using an XLR (microphone) cable.
- Monitor the **Output**.
- Set the **Input Toggle** to its left position.
- Set the **Level** control to its maximum position.
- While watching the **VU Meter**, set the **Gain** control to a desired position.

Condenser Microphone Amplification

Summary:

A condenser microphone is converted from microphone level to modular level.



Audio Path:

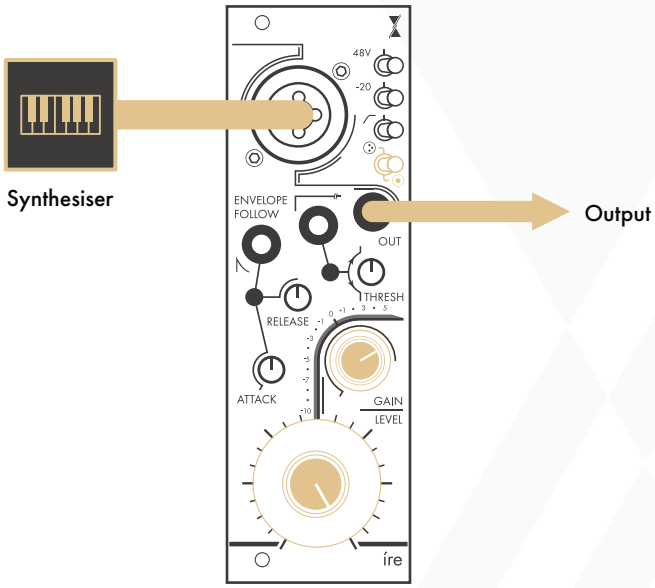
- Connect the output of a condenser microphone to the **XLR/TS Input** using an XLR (microphone) cable.
- Monitor the **Output**.
- Set the **Input Toggle** to its left position.
- Set the **Phantom Power Toggle** to its left position.

- Always enable and/or disable phantom power with a condenser microphone already connected. Connecting and/or disconnecting a condenser microphone with phantom power enabled can damage the condenser microphone.
- Set the **Level Knob** to its maximum position.
- While watching the **VU Meter**, set the **Gain Knob** to a desired position.

Instrument Amplification

Summary:

An electric instrument is converted from instrument level to modular level.



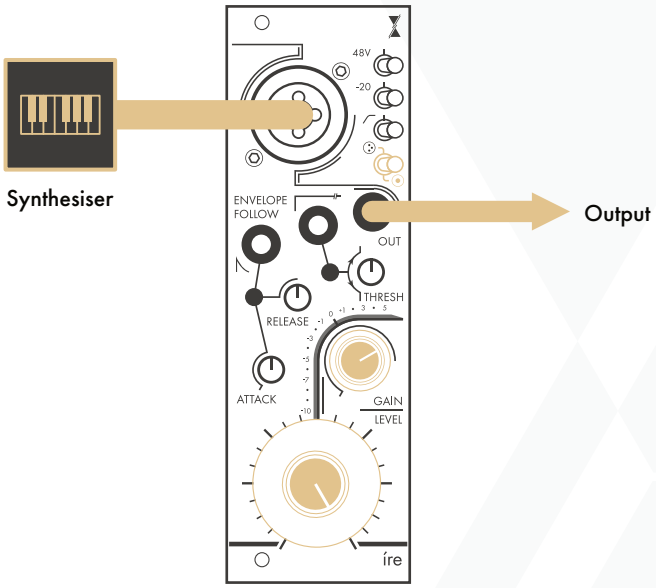
Audio Path:

- Connect the output of an electric instrument (something that uses a pickup) to the **XLR/TS Input** using an TS (instrument) cable.
- Monitor the **Output**.
- Set the **Input Toggle** to its right position.
- Set the **Level** control to its maximum position.
- While watching the **VU Meter**, set the **Gain** control to a desired position.

Line Level Amplification

Summary:

A line level device is converted from line level to modular level.



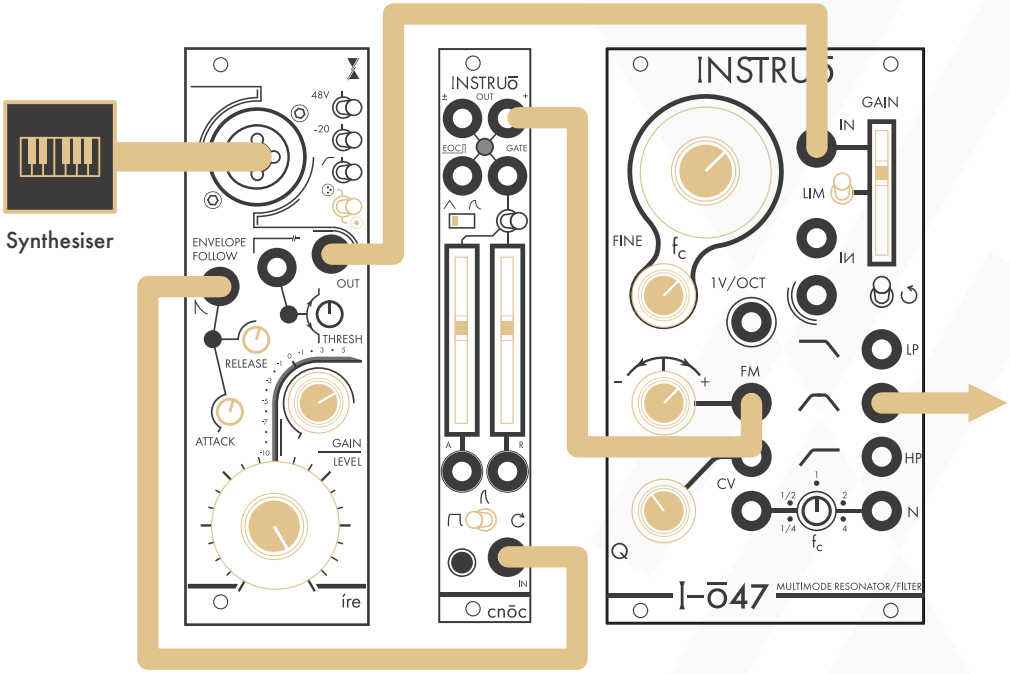
Audio Path:

- Connect the output of a line level device (synthesizer, audio player, etc.) to the **XLR/TS Input** using an TS (instrument) cable.
- Monitor the **Output**.
- Set the **Input Toggle** to its right position.
- Set the **Level** control to its maximum position.
- While watching the **VU Meter**, set the **Gain** control to a desired position.

Auto-Wah

Summary:

An electric instrument is converted from instrument level to modular level and the extracted envelope signal modulates the cutoff frequency of a resonant band pass filter.



Audio Path:

- Connect the output of an electric instrument (something that uses a pickup) to the **XLR/TS Input** using an TS (instrument) cable.
- Connect the **Output** to the input of a low pass filter.
- Set the cutoff frequency of the low pass filter to a desired position.
- Set the resonance of the low pass filter to a desired position.

- Monitor the output of the low pass filter.
- Set the **Input Toggle** to its right position.
- Set the **Level** control to its maximum position.
- While watching the **VU Meter**, set the **Gain** control to a desired position.

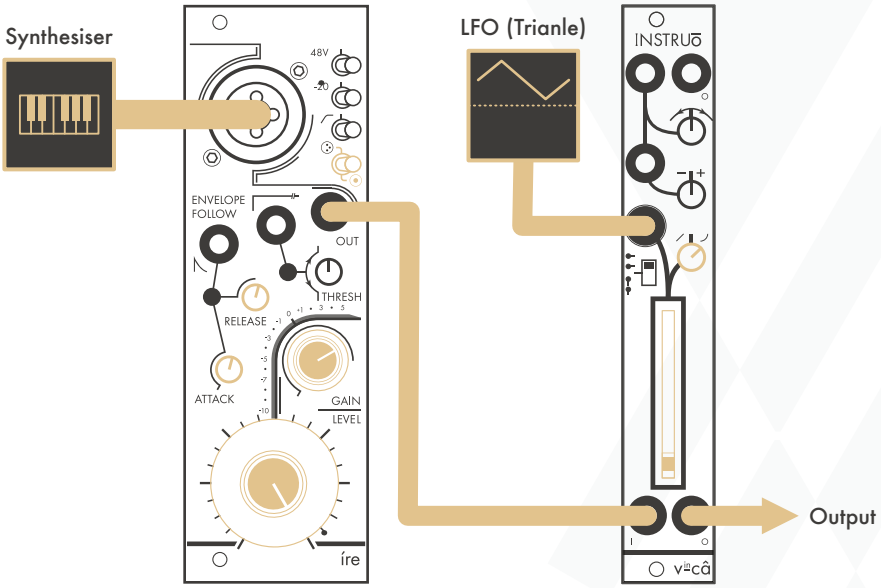
Control Path:

- Connect the **Envelope Output** to input of a slew limiter.
- Set the **Attack** and **Release** controls to around 1:00.
- Set the slew amount to a desired position.
- Connect the output of the slew limiter to the cutoff frequency control voltage input of the low pass filter and set the CV attenuator to a desired position.

Tremolo

Summary:

An electric instrument is converted from instrument level to modular level, connected through a VCA, and modulated by a unipolar positive LFO.



Audio Path:

- Connect the output of an electric instrument (something that uses a pickup) to the **XLR/TS Input** using an TS (instrument) cable.
- Connect the **Output** to the input of an exponential VCA.
- Set the level of the VCA to its minimum position.
- Monitor the output of the VCA.
- Set the **Input Toggle** to its right position.
- Set the **Level** control to its maximum position.

- While watching the **VU Meter**, set the **Gain** control to a desired position.

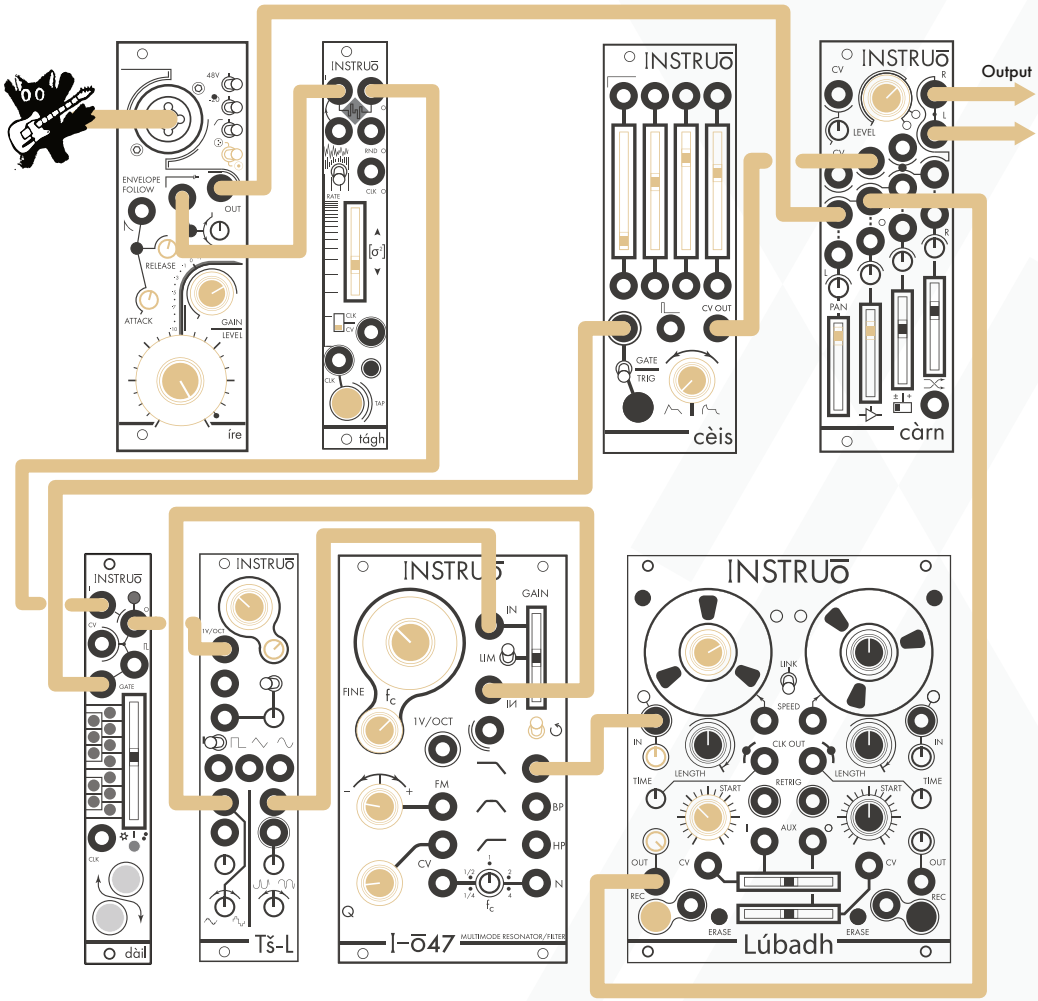
Control Path:

- Connect a unipolar positive LFO to the control voltage input of the VCA and set the CV attenuator to a desired position.

Comparator Driven Accompaniment

Summary:

Audio signals from an external instrument/ field recorder/ microphone present at the **XLR/TS Input** generates gate and envelope signals that drive a generative synth patch to provide musical accompaniment.



Audio Path:

- Connect the output of an electric instrument (something that uses a pickup) to the **XLR/TS Input** using an TS (instrument) cable.
- Connect the **Output** to a free channel on your eurorack mixer.
- Create a basic synth patch (VCO > Filter/VCA > effect processor
- Connect the final output of your synth patch to a free channel on your eurorack mixer.
- Monitor the output of your eurorack mixer.

Control Path:

- Connect the **Comparator Gate Output** to the clock input on a Sample and Hold module.
- Connect the CV Output of your Sample and Hold module to the Input of a quantiser, using a scale that compliments the external instrument/ audio source.
- Connect the CV Output of the Quantiser to the V/oct Input on your VCO.
- Connect the **Envelope Output** to your synth patch's Filter/VCA Input.