ES-10

User Manual

Revision 1.0

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Introduction

Congratulations on your purchase of an Expert Sleepers “ES-10”. Please read this user manual before operating your new module.

The ES-10 is a Eurorack 8-in/8-out ADAT interface, with DC-coupled inputs and outputs that can be used for both audio and CVs.

Each input can be individually selected for modular or line level operation.

The outputs can be expanded via the ES-5[1] module.

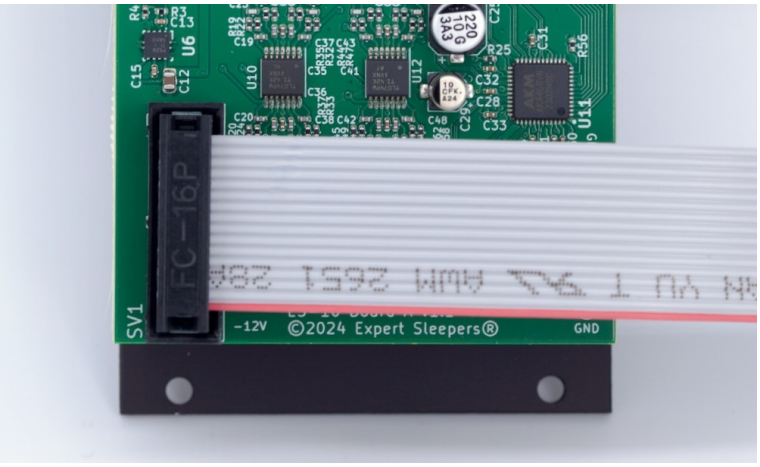
The ES-10 uses AKM 'VELVET SOUND' DACs and ADCs and low noise audio op-amps for the best possible sound quality.

Please note: the ES-10 cannot be used without an ADAT input connection (from the ADAT output port of your audio interface). If your interface only has an ADAT input, it cannot be used with the ES-10.

1 https://expert-sleepers.co.uk/es5.html

Installation

House the module in a Eurorack case of your choosing. The power connector is 16-pin Doepfer standard[2]. If using the power cable supplied with the module, the red edge of the cable is closest to the bottom edge of the PCB, and carries -12V. ("-12V" is marked on the PCB itself next to this end of the connector.) Be sure to connect the other end of the power cable correctly, again so -12V corresponds to the red stripe on the cable.



Power requirements

The ES-10 draws up to 132mA on the +12V rail, and 90mA on the -12V rail. It does not use the 5V rail.

Indicators

The large red LED at the top left of the panel lights to indicate a valid ADAT signal being received at the module input. It will not light if the module is simply powered up without any cables.

Light should always be visible behind the flap of the ADAT output port, if the module is powered.

Inputs and outputs

The ES-10's input and output jack sockets are illuminated, lighting red for positive voltage and blue for negative voltage. (Audio-rate signals appear purple, since you see a rapid alternation of positive and negative.)

The sockets are 3.5mm TS jacks. Do not use TRS cables.

The digital audio connections are standard TOSlink sockets supporting the ADAT protocol only (not S/PDIF). They are compatible with any other device supporting ADAT.

Inputs

The eight sockets at the top of the module (numbered in black on white) are the inputs.

The inputs can operate at either modular or line level, selected by jumpers (see Error: Reference source not found).

Mode	Maximum voltage before clipping	Input impedance
Modular	±12V	101kΩ
Line	±3.5V (+10dBu)	29kΩ

DC or AC coupling can be selected globally, again with a jumper. Select DC coupling if any of the inputs will be used for CV. If all inputs will only ever be used for audio, select AC coupling.

2 http://www.doepfer.de/a100_man/a100t_e.htm

Outputs

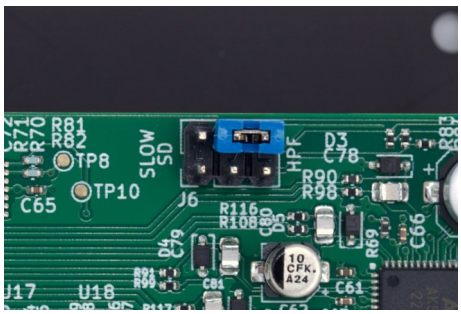
The eight sockets at the bottom of the module (numbered in white on black) are the outputs.

The outputs have a maximum range of ±11V.

Jumpers

AC/DC coupling

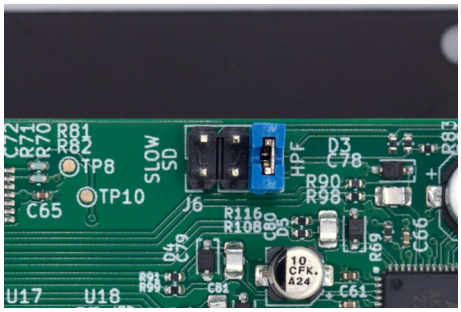
The jumper block at the top of the board controls some ADC settings, notably the DC coupling. From the factory, the jumper is located as below:



This actually equivalent to there being no jumper at all, since the top row of pins are simply ground.

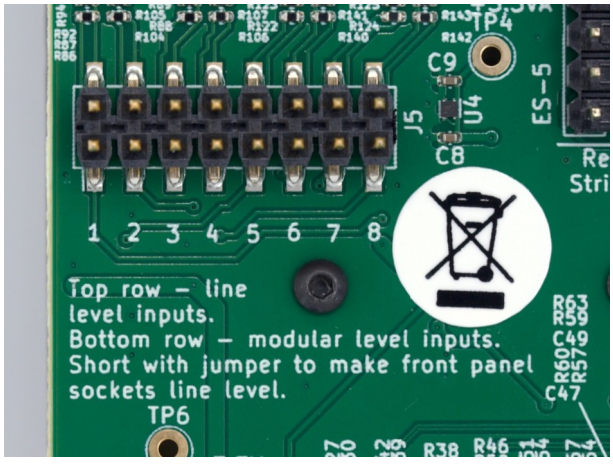
In this position, the high-pass filter is enabled i.e. the inputs are AC coupled.

For DC coupling, position the jumper as below:



Input level

The pin header in the centre of the board controls the input level of each input.



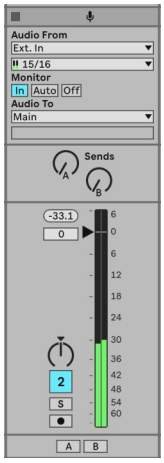
Instructions are printed on the PCB. Fitting a jumper across the pins for a particular input makes the front panel socket line level instead of modular level.

You can also use the header to make direct connections to the inputs. For example, if your modular case has some unassigned jack sockets on it (such as the Intellijel Palette, to name but one), you can run wires from

the ES-10 to those sockets.

DC offsets

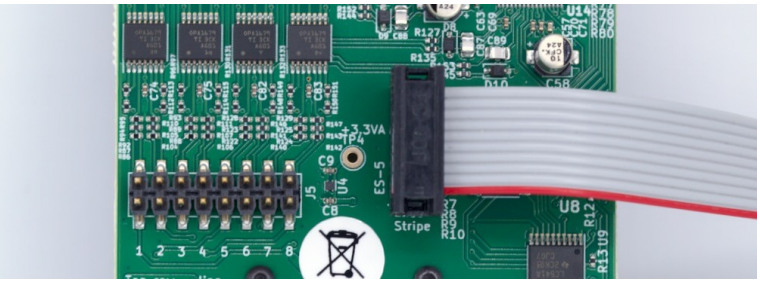
If you set the inputs for DC coupling, there will almost certainly be DC offsets, which will appear in your DAW as a constant level on the input meters. This is normal.



For inputs that you want to use as audio, you can remove the DC offsets by applying a high-pass or dedicated DC blocking filter. In Ableton Live, for example, this is done in the Utility:

Attaching an ES-5

An ES-5 expander can be attached using the 10-pin header on the back of the ES-10.



Connect the ES-5 end as shown in the ES-5 user manual[3] (reading 'ES-10' where the manual says 'ES-3').

Where to get help

Email, forum, and social media links can be found at the bottom of every page on our website[4].

3 https://expert-sleepers.co.uk/es5usermanual.html
4 https://www.expert-sleepers.co.uk