Clarett⁺ 4 Pre

User Guide

Focusrite®

focusrite.com

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OVERVIEW

WARNING: Excessive sound pressure levels from earphones and headphones can cause hearing loss.

WARNING: This equipment must only be connected to USB Type 2.0+ or Thunderbolt 3.0+ ports.

Introduction

Thank you for purchasing this Clarett+ 4Pre, the studio-grade audio interface for PC and Mac, designed for music makers who demand the highest quality while recording and mixing their audio creations. The All-analogue Air function will capture your vocals, drums and acoustic instruments with immense clarity and two JFET instrument inputs will let you plug straight in and preserve your natural tone.

This User Guide provides a detailed explanation of the hardware to help you achieve a thorough understanding of the product's operational features. We recommend you take the time to read the Guide, so you are fully aware of all the features the Clarett+ 4Pre has to offer.

IMPORTANT: As well as this User Guide, you will need the **Focusrite Control** Software Guide which can be downloaded from focusrite.com/downloads.
This contains full details of **Focusrite Control**, the software application designed specifically for use with the Focusrite Clarett+ range of interfaces.

If either User Guide does not have the information you need, please go to support.focusrite.com, where you can find articles and tutorials beyond the scope of this User Guide. A Getting Started video tutorial is also available, at focusrite.com/get-started/ClarettPlus-4Pre.

Features

The Clarett+ 4Pre audio interface has four next-generation, high-performance Clarett+ preamps allowing you to hear every nuance and capture clear and powerful audio with a preamp design that brings masses of headroom, low distortion and low noise. Two new and improved extremely high-performance A-D and D-A converters create tighter mixes, deliver extremely low noise and high dynamic range and make more accurate recordings. Two true-to-life headphone outputs inspire artists to hear every nuance, and evoke better vocal performances and two JFET instrument inputs mimic guitar amp inputs to capture the true character and natural tone of guitars. The Clarett+ 4Pre is also a MIDI interface, allowing your computer to connect to other MIDI equipment in your studio.

Clarett+ 4Pre brings collaborators together, with options to record up to 18 input channels simultaneously. Expandable using ADAT, you can connect devices such as Clarett OctoPre, with eight channels of digital expandability, perfect for every stage of your creative journey.

The accompanying software application, **Focusrite Control**, is designed to let you easily configure the Clarett+ 4Pre with signal routings appropriate for most common recording tasks. For more complex situations, it provides extensive routing and monitoring options, as well as the ability to control global hardware settings such as sample rate and synchronisation. You can download **Focusrite Control** from focusrite.com/downloads.

iPad and iPhone users can additionally download Focusrite iOS Control from the App Store®. The app communicates via WiFi with **Focusrite Control** running on your computer, and lets you adjust your monitor mixes and input settings from your iOS device. See the **Focusrite Control** User Manual for more information.

Box Contents

Along with your Clarett+ 4Pre you should have:

- External 12 V DC mains Power Supply Unit (PSU)
- USB-C to USB-A cable
- USB-C to USB-C cable

Focusrite Control is available at focusrite.com/downloads. On Windows, **Focusrite Control** will also install the driver required. Mac users: Clarett+ 4Pre is class-compliant on Macs, therefore no drivers are required.

As a Clarett+ owner, you are also entitled to a selection of third-party software.
Go to focusrite.com/included_software/ClarettPlus-4Pre to find out what's included.

System Requirements

> **IMPORTANT** – Please visit the following link for up-to-date information on computer and operating system compatibility for all Clarett+ products:
> support.focusrite.com

GETTING STARTED

Software Installation

Focusrite Control and the driver software needed for the Clarett+ 4Pre are available for download from the Focusrite website: focusrite.com/downloads.

Click `Clarett+ range` on the `Downloads` page. This will take you to a page with all the downloads which are available for the Clarett+ range.
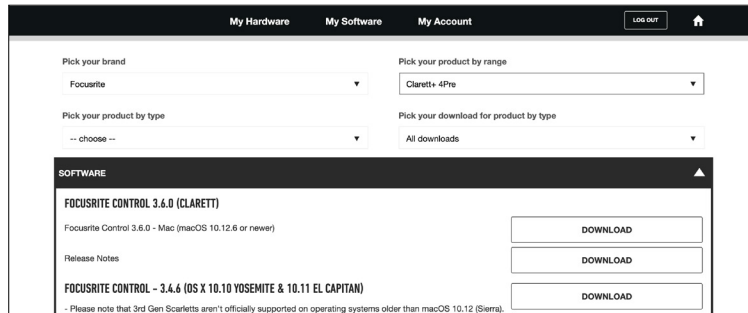

To download the **Focusrite Control** version you need, click the appropriate `Download` button.

Note that the Windows driver is included within the **Focusrite Control** download. No additional driver is needed for Macs.

Registering your Clarett+ 4Pre

If you are having trouble with the steps below, please watch our video guide here: focusrite.com/get-started/ClarettPlus-4Pre.

1. Go to focusrite.com/register/.
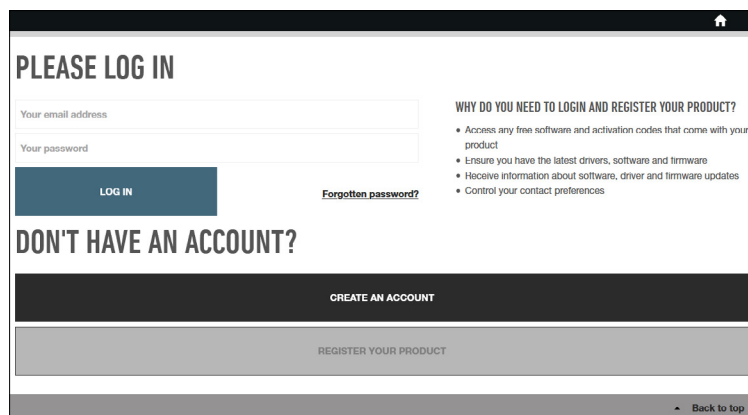
2. If you do not have already have a Focusrite/Novation account, select `CREATE AN ACCOUNT` and follow the on-screen instructions.

3. If you do have an account, log in and select **REGISTER A NEW PRODUCT**:
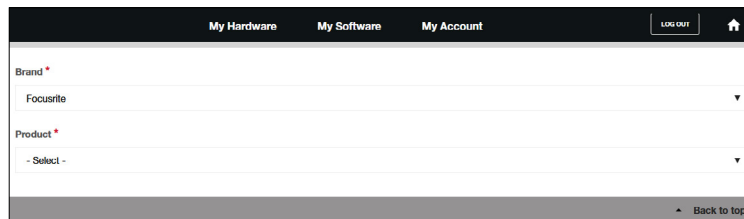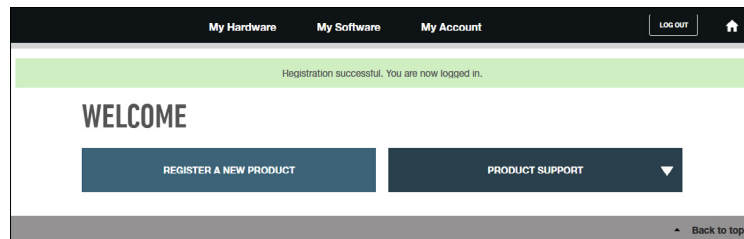
4. Select your Clarett+ device from the **Product** drop-down list and enter your device's Serial Number at the bottom of the page. You can find the serial number on the underside of the Clarett+ 4Pre, and also on the gift box. Then click **Set Serial Number**.
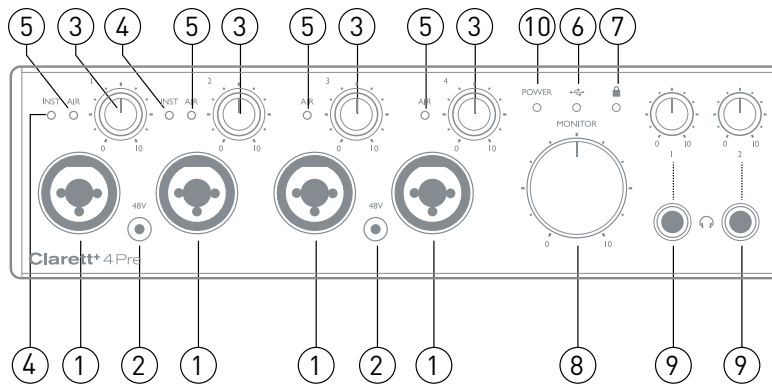
5. Follow the rest of the on-screen instructions to finish registering your device.

6. When registration is complete, your Product will appear in your Account under the **My Hardware** tab.

7. All your bundled software can be found under the **My Software** tab in your account

Hardware Features

Front Panel

The front panel includes input gain controls and input connectors for Mic, Line and Instrument signals for both channels, and also monitoring controls.

1. Inputs 1 to 4 – Combo XLR input sockets for each channel - connect microphones via XLR connectors, or line level signals via ¼" jacks. Instruments (e.g., guitar) may also be connected via ¼" jacks to Inputs 1 and 2. Either TRS (balanced) or TS (unbalanced) jack plugs can be used for instruments or line level signals.

2. **48V** – two switches enabling 48 V phantom power at the combo connectors' XLR contacts for mic inputs 1 & 2 and 3 & 4 respectively. Each switch has a red LED to show when phantom power is enabled. Note that not all microphones require phantom power. If you are unsure whether your microphone needs it to work, please read the microphone documentation.

3. Gain **1** to **4** – four rotary controls: adjust input gain for signals at Inputs 1 to 4 respectively. The gain controls have LED 'halos' to confirm signal level: green indicates an input level of at least -42 dBFS (i.e., 'signal present'), the ring then turns orange when the signal level reaches -6 dBFS, and red at 0 dBFS.

4. **INST** – two red LEDs which illuminate when Instrument mode is selected for the jack Inputs 1 or 2 from **Focusrite Control** software. When Instrument mode is selected, the line input is converted to a high impedance unbalanced input. You can connect instruments via a 2-pole (TS) jack plug here.

5. **AIR** – four yellow LEDs which illuminate when AIR function is selected for each input from **Focusrite Control**. AIR modifies the input stage's frequency response to model classic, transformer-based Focusrite ISA mic preamps.

6. ⇌ (USB active) – a green LED which illuminates when the unit has established a connection with the computer to which it is connected.

7. 🔒 (Locked) – a green LED which confirms clock synchronisation, either to the Clarett+ 4Pre's internal clock or to an external digital input.

8. **MONITOR** – main monitor output level control – this control will normally control the level at the main monitor outputs on the rear panel, but can be configured in **Focusrite Control** to adjust both pairs of analogue outputs.

9. 🎧 (Headphones) – **1** and **2** – connect headphones here. The stereo mixes at these outputs are set up in **Focusrite Control**: Headphone 1 always carries the same mix as Line Outputs 3 and 4, while Headphone 2 can provide an independent mix by using Outputs 5 and 6 in software. Each headphone output has its own volume control.

10. **POWER** – green LED confirming DC power is connected.

Rear Panel
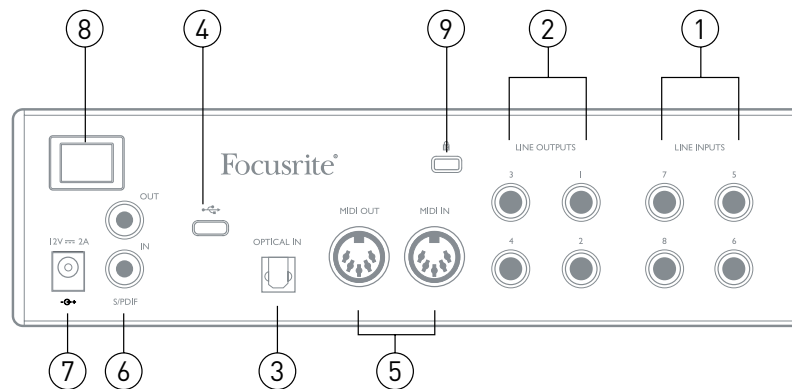
1. **LINE INPUTS 5** to **8** – four balanced analogue line inputs for Channels 5 to 8, on ¼" TRS jack sockets. Connect further line level signals here using ¼" TRS (balanced) or TS (unbalanced) jack plugs

2. **LINE OUTPUTS 1** to **4** – four balanced analogue line outputs on ¼" jack sockets; use TRS jacks for a balanced connection or TS jacks for unbalanced. Line Outputs 1 and 2 will generally be used for driving main L and R speakers of your monitoring system, while Outputs **3** and **4** can be used for connecting additional line level equipment (e.g., outboard FX processors). Signals routed to all the outputs may be defined in **Focusrite Control**.

3. **OPTICAL INPUT** – a TOSLINK connector carrying eight channels of digital audio in ADAT format at 44.1/48 kHz sample rate or four channels at 88.2/96 kHz. This input is disabled at 176.4/192 kHz sample rates. This input is also capable of accepting a stereo optical S/PDIF source.

4. ⛌ – USB-C™ connector; connector; connect the Clarett+ 4Pre to your computer with the supplied USB-C to USB-C or USB-C to USB-A cable.

5. **MIDI IN** and **MIDI OUT** – standard 5-pin DIN sockets to connect external MIDI equipment. You can send/receive MIDI data between your computer and external MIDI devices.

6. **SPDIF IN** and **OUT** – two RCA sockets carrying two-channel digital audio signals in or out of the Clarett+ 4Pre in S/PDIF format. Like all the other inputs and outputs, the routing of S/PDIF signals may be customised in **Focusrite Control**. The S/PDIF Input appears in **Focusrite Control** as Inputs 9 and 10 and the S/PDIF Output as Outputs 7 and 8.

7. External DC power input – power the Clarett+ 4Pre via the separate AC adaptor (PSU) supplied. The PSU is a 12 V DC unit rated at 2 A.

8. Power On/Off switch.

9. Kensington security slot– secure your Clarett+ 4Pre to a suitable structure if desired.

Connecting your Clarett+ 4Pre

The Clarett+ 4Pre must be powered using the supplied AC adaptor (PSU). Connect the PSU to the rear panel power socket and turn the unit on with the power switch.

The Clarett+ 4Pre has a USB-C™ port (on the rear panel). Once the software installation is complete, connect the Clarett+ 4Pre to your computer using one of the supplied USB-C cables.

Turn the unit on with the power switch.

Computer audio setup

When you connect your Clarett+ 4Pre to your computer for the first time, you will need to select it as the audio input/output device.

- MacOS: selection is made in `System Preferences` > `Sound`: select the Focusrite device on both the `Input` and `Output` pages.
- Windows: selection is made in `Control Panel` > `Sound`: right-click on the Focusrite device and select `Set as Default Device` in both `Recording` and `Playback` tabs.

If you have any problems, full details of how to select the Clarett+ 4Pre as the audio device can be found at focusrite.com/get-started/ClarettPlus-4Pre.

After the first connection, your OS should automatically select the Clarett+ 4Pre as the default audio device.

Audio Setup in your DAW

After installing the drivers and connecting the hardware, you can start using the Clarett+ 4Pre with your DAW.

Please note - your DAW may not automatically select the Clarett+ 4Pre as its default I/O device. In this case, you must manually select the driver on your DAW's `Audio Setup`* page, and select `Clarett+ 8pre` (Mac) or `Focusrite USB ASIO` (Windows). Please refer to your DAW's documentation or Help files if you are unsure where to select the Clarett+ 4Pre as your audio device.

* Typical name – page names may vary with DAW

Connecting Clarett+ 4Pre to loudspeakers

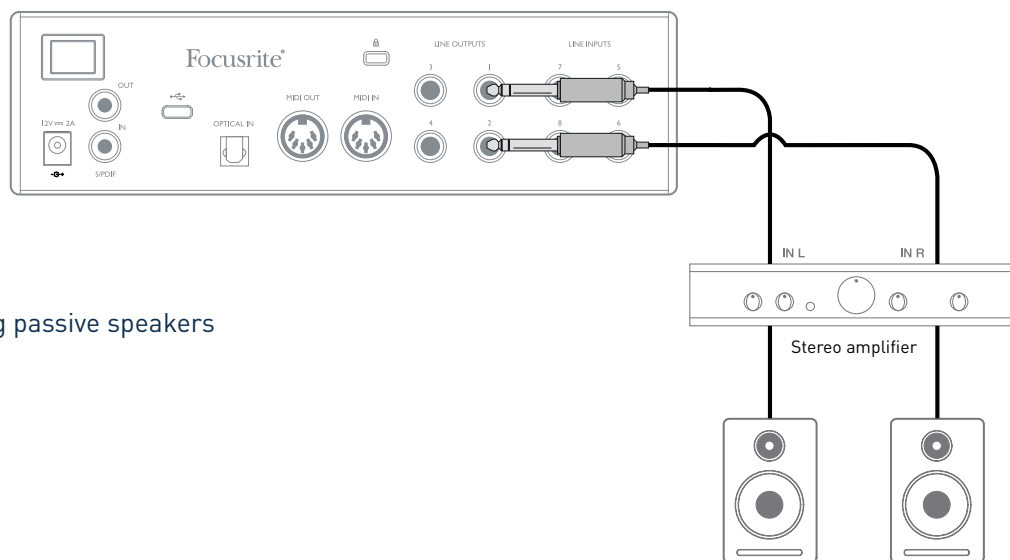The 1/4" jack **LINE OUTPUTS 1** and **2** on the rear panel will normally be used to drive monitoring speakers. Self-powered monitors have internal amplifiers, and may be connected directly. Passive loudspeakers will require a separate stereo amplifier; in this case, the outputs should be connected to the amplifier's inputs.
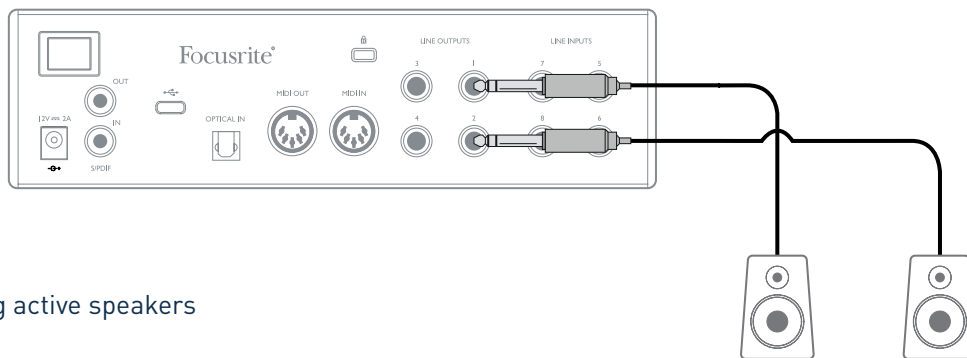
Connecting active speakers

Connecting passive speakers

Professional power amplifiers will generally have balanced inputs. If your amplifier or powered speakers have balanced inputs, use 3-pole (TRS) ¼" jacks to connect them to the Clarett+ 4Pre.

All line output connectors are 3-pole (TRS) ¼" jack sockets, and are electronically balanced. Typical consumer (hi-fi) amplifiers and small powered monitors will have unbalanced inputs on RCA sockets.

When mixing, you can connect an additional pair of speakers (mid-field. near-field, etc.) to **LINE OUTPUTS 3** and **4** to check your mix on different types of speaker. You can easily configure **Focusrite Control** to route the mix to these outputs as well as Outputs 1 and 2.
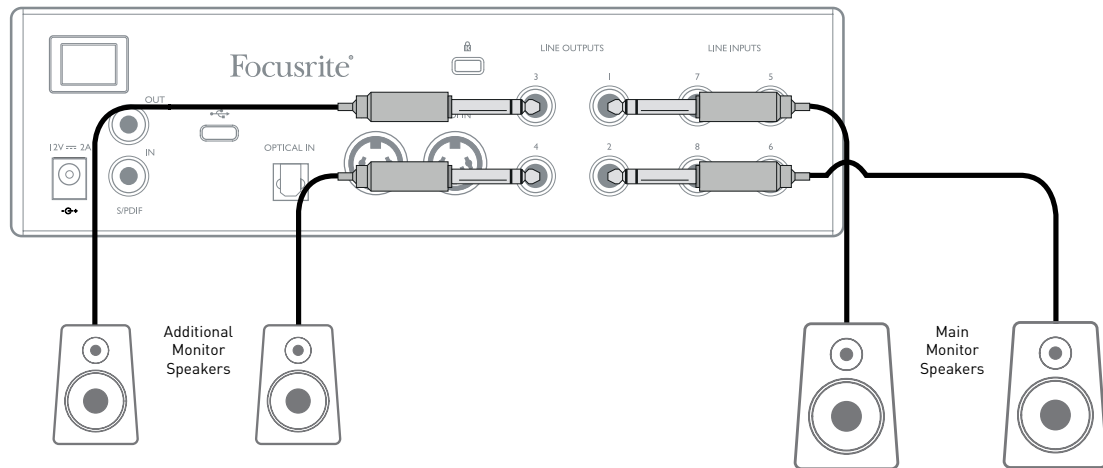
IMPORTANT:

LINE OUTPUTS 1 and **2** have "anti-thump" circuitry that protects your speakers if the Clarett+ 4Pre is turned on while the speakers (and amplifier if used) are connected and active.

LINE OUTPUTS 3 and **4** do not have this circuitry. If you're using additional speakers connected to these outputs, power your Clarett+ 4Pre on first, then turn on the speakers or power amplifier.

But get into the habit of following this general rule in any case - it is good audio practice to turn on any speaker system *after* turning on the equipment feeding it.

EXAMPLES OF USAGE

The Clarett+ 4Pre is an excellent choice for many recording and monitoring applications. Some typical configurations are shown below.

1. Recording a small band
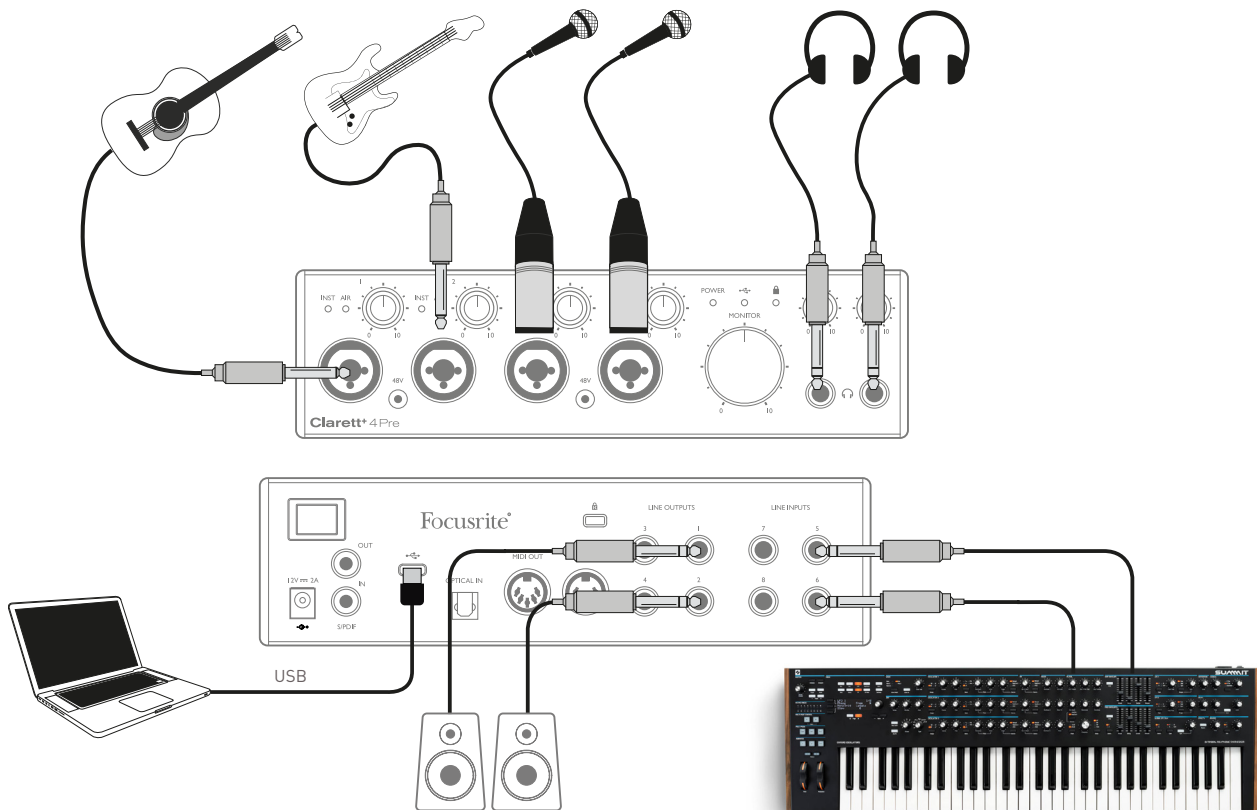
This setup illustrates a typical configuration for multitrack recording with DAW software on your computer.

In this example we are making a live recording of a small band, consisting of electroacoustic guitar, bass guitar, synth and two vocalists.

- Guitars: these are shown connected to the Clarett+ 4Pre's front panel inputs. Note that only Inputs 1 and 2 can be configured to accept instruments directly, so we have used these two inputs for the two guitars. Ensure Instrument mode is selected for Inputs 1 and 2 from **Focusrite Control**, and the **INST** LEDs are illuminated.

- Mics: Two mics for vocals are plugged into Inputs 3 and 4; if they are condenser mics, press the **48V** button to enable phantom power.

- Synth: The stereo line output from the synth is connected to **LINE INPUTS 5** and **6** on the rear panel.

You can monitor the recording via Headphone Output 1 if you wish, using **Focusrite Control** to set up your monitoring mix. A second, different mix can be created for a musician and can be routed to Headphone Output 2.

A note about latency

You will probably have heard the term "latency" used in connection with digital audio systems. In the DAW recording application described above, latency is the time it takes for your input signals to pass through your computer and audio software, and back to you.

While not an issue for most recording situations, latency can be a problem for a performer who wishes to record while monitoring their input signals. This might be the case if you need to increase your buffer size, which could be needed when you record overdubs on a large project using many DAW tracks, software instruments and FX plug-ins.

Common symptoms of a buffer setting that is too low could be glitching audio (clicks and pops), or a particularly high CPU load within your DAW (most DAWs have CPU readouts). If you experience this on a Mac, you can raise the buffer size from the DAW application itself but on a Windows PC you will need to change this from the `ASIO ControlPanel` which can usually be accessed from your DAW `Setup Preferences`*.

The Clarett+ 4Pre, in conjunction with **Focusrite Control**, allows "low latency monitoring", which overcomes this problem. You can route your input signals directly to the Clarett+ 4Pre's headphone and line outputs. This enables the musicians to hear themselves with near zero latency – i.e., effectively in "real time" – along with the computer playback, even with very high DAW buffer sizes. The input signals to the computer are not affected in any way by this setting. However, note that any effects being added to the live instruments by software plug-ins will not be heard in the headphones in this case, although the FX will still be present on the recording.

* Typical name – page names may vary with DAW

## 2. Recording a drum kit with (and without) the optical connection

In addition to eight analogue inputs, the Clarett+ 4Pre has an ADAT input port (**OPTICAL IN**) which can provide an additional eight audio inputs at 44.1/48 kHz sample rate or four at 88.2/96 kHz. Using a separate 8-channel microphone preamplifier equipped with an ADAT output – such as the Clarett OctoPre – provides a method of expanding the Clarett+ 4Pre's input capability. This could, for example extend the example above to include a close-miked drum kit, as shown below.
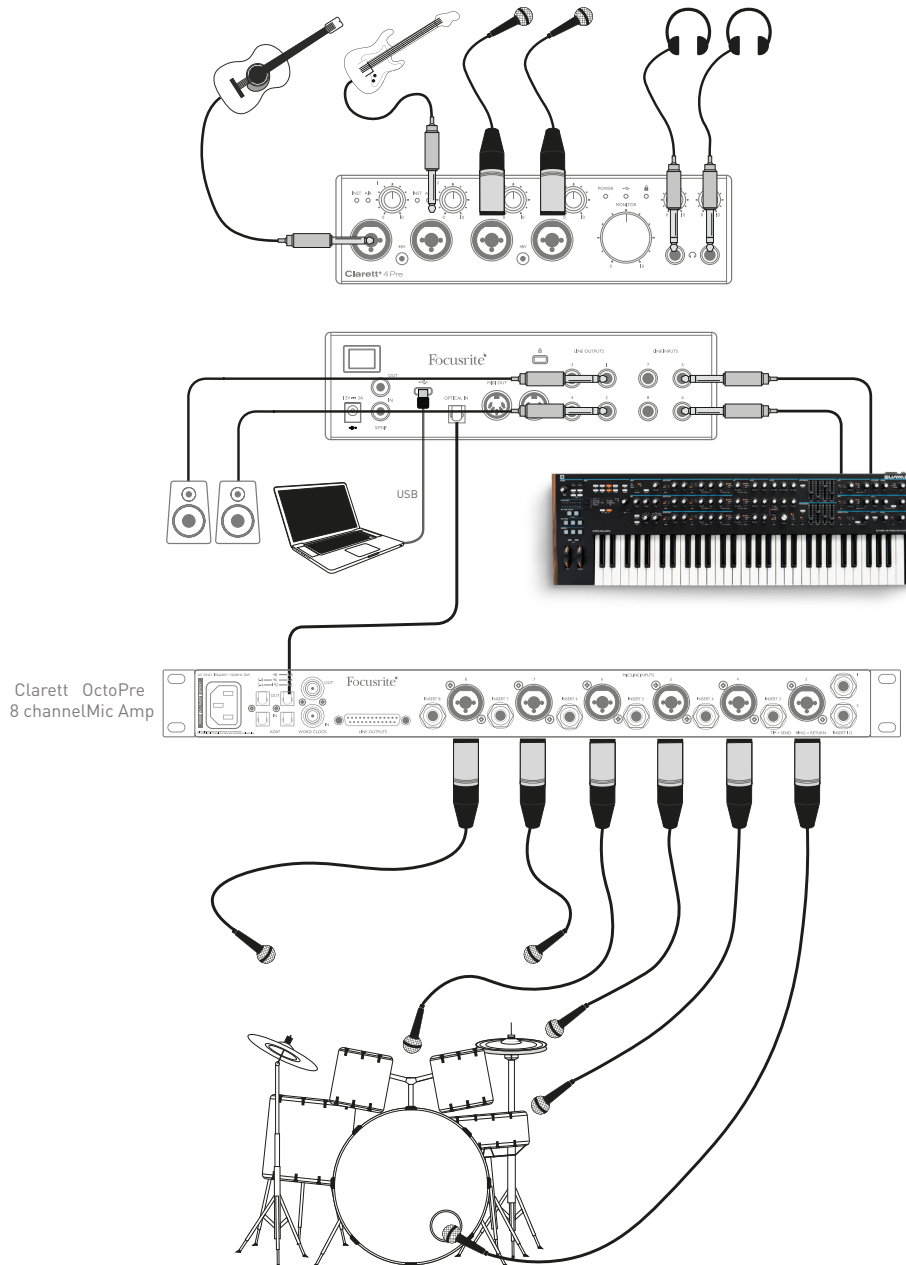
The Clarett OctoPre's **OPTICAL OUT** port is connected to the Clarett+ 4Pre's **OPTICAL IN** port with a single TOSLINK optical cable. The two devices must be synchronised to ensure audio passes cleanly, without clicks and pops. To do this in **Focusrite Control** go to `Device Settings` and set the `Clock Source` to `ADAT`. Both devices must be set to the same sample rate.

You can route additional ADAT inputs the same way as the other inputs in **Focusrite Control**. The ADAT inputs can form part of any musician's headphone mix, as needed.

If an ADAT-equipped mic pre-amp is not available, a method of recording drums with just four mics and the Clarett+ 4Pre is shown below:
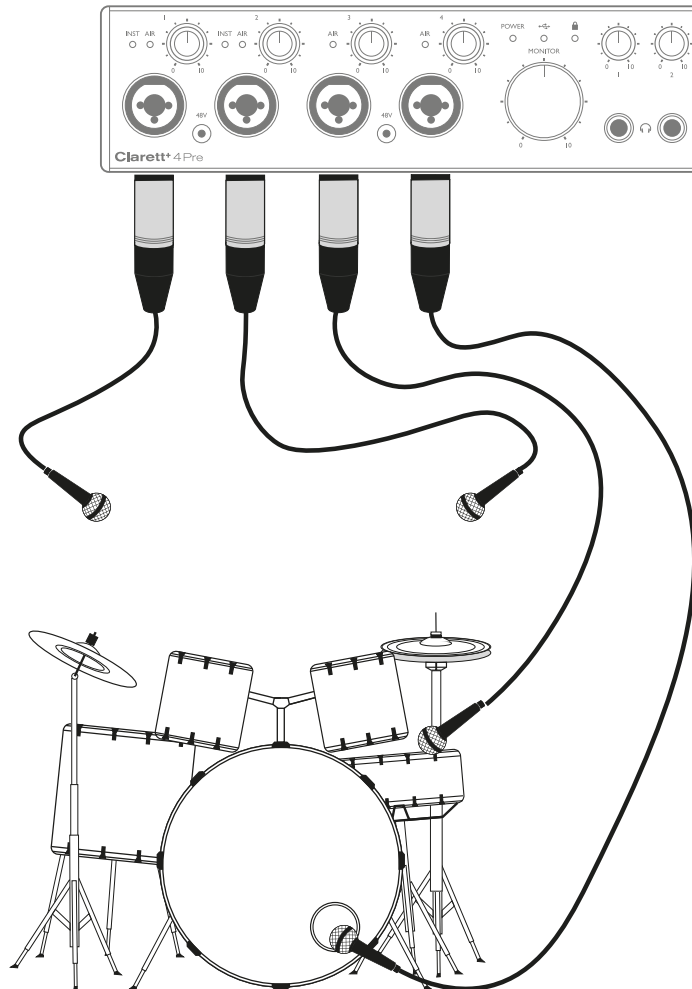
3. Providing mixes while recording

While recording, musicians often prefer to hear themselves along with other players, and when overdubbing, tracks that have already been recorded.

Focusrite Control lets you define several different mixes, each of which may be either mono or stereo, and can be routed to any of the Clarett+ 4Pre's outputs. This means each musician being recorded can have a unique mix. In their mix you can include any hardware inputs on the Clarett+ 4Pre and combine them with DAW tracks, such as click or pre-recorded backing tracks. See the **Focusrite Control** Guide (obtainable from focusrite.com/downloads) for details of how to configure different mixes, and how to route them to the Clarett+ 4Pre's various outputs.

Each of the two headphone outputs on the front panel initially provide a default mix: Headphone 1's mix is always the same stereo mix is routed to Line Outputs 3 and 4, while Headphone 2 has a completely independent mix dedicated for headphone monitoring use. You can adjust the content of both mixes in **Focusrite Control**. The mix sent to Outputs 3/4 defines what is heard at Headphone Output 1, while the mix sent to Outputs 5/6 defines what is heard at Headphone Output 2.

Either or both of these may be used for a musician's mix; each output can drive a pair of headphones directly. This is the easiest method, and has the advantage the mixes are stereo. If you need to drive additional pairs of headphones, you'll need to include an external headphone amplifier as part of your set-up:
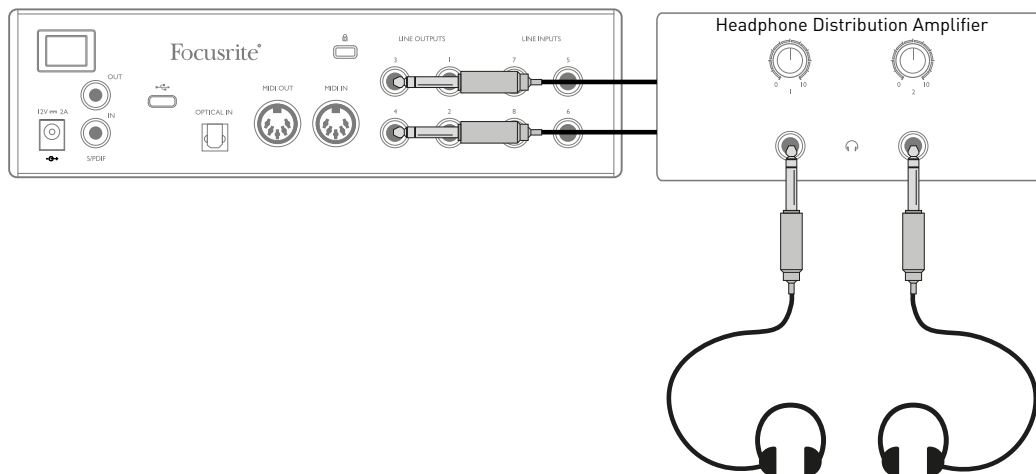
Always remember - when sourcing monitor mixes from input signals, ensure the DAW channels on which you are recording are muted, otherwise the musicians will hear themselves "twice", with one signal audibly delayed as an echo.

FOCUSRITE CONTROL - OVERVIEW

Focusrite Control is the software application used with the Clarett+ 4Pre, which can be downloaded from focusrite.com/downloads. An iOS app allowing WiFi control of **Focusrite Control** is also available, from the Apple App Store.

Focusrite Control allows you to create a custom monitor mix for each musician, and specify the routing of all audio signals to the physical audio outputs. Sample rate and clock source selection are also available from **Focusrite Control**.

> **Focusrite Control** has its own, dedicated User Guide, which has detailed operating instructions for all aspects of the software.
> This may be downloaded from focusrite.com/downloads.

CLARETT+ 4PRE TECHNICAL SPECIFICATIONS

Performance Specifications

Where possible, specifications are measured to AES17. Unless stated, all specification measurements are unweighted.

Configuration	
Inputs	18: analogue (8), S/PDIF (2), ADAT (8)
Outputs	8: analogue (4), S/PDIF (2), HP2 (2)
Mixer	Fully assignable 26-in/10-out mixer
Custom mixes	10 mono
Maximum custom mix inputs	18 mono
Digital Performance	
Supported sample rates	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz & 192 kHz
Microphone Inputs	
Frequency Response	20 Hz – 20 kHz, +/-<0.03 dB; 20 Hz – 35 kHz, +/-<0.15 dB
Dynamic Range	118 dB at minimum gain (A-Weighted)
THD+N	-110 dB @ -1 dBFS and 20 dB gain
Noise EIN	-129 dBu (A-Weighted)
Maximum input level	18 dBu
Gain Range	57 dB
Impedance	AIR off: 6.2K Ω AIR on: 2.2K Ω
Line Inputs 1-4 (Variable Gain)	
Frequency Response	20 Hz – 20 kHz, +/-<0.05 dB; 20 Hz – 35 kHz, +/-<0.15 dB
Dynamic Range	118 dB at minimum gain (A-Weighted)
THD+N	-100 dB @ -1 dBFS and minimum gain
Maximum input level	26 dBu
Gain Range	57 dB
Impedance	66K Ω
Line Inputs 5-8 (Fixed Gain)	
Frequency Response	20 Hz – 20 kHz, +/-<0.05 dB; 20 Hz – 35 kHz, +/-<0.15 dB
Dynamic Range	118 dB (A-Weighted)
THD+N	-100 dB @ -1 dBFS; -105 dB @ -6 dBFS
Maximum input level	18 dBu
Impedance	66K Ω

Instrument Inputs	
Frequency Response	20 Hz – 20 kHz, +/-<0.04 dB; 20 Hz – 35 kHz, +/-<0.15 dB
Dynamic Range	116 dB (A-Weighted)
THD+N	-96.5 dB @ -1 dBFS and minimum gain
Maximum input level	15 dBu
Gain Range	57 dB
Impedance	2.3M Ω
Line & Monitor Outputs	
Frequency Response	20 Hz – 20 kHz, +/-<0.02 dB; 20 Hz – 35 kHz, +/-<0.02 dB
Dynamic Range	124 dB (A-Weighted)
THD+N	-106 dB
Maximum Output Level (0 dBFS)	18 dBu
Impedance	68 Ω
Headphone Outputs	
Frequency Response	20 Hz – 20 kHz, <0.06 dB; 20 Hz – 35 kHz, <0.07 dB
Dynamic Range	118 dB (A-Weighted)
THD+N	-104 dB
Maximum Output Level	16 dBu
Impedance	5 Ω

Physical and Electrical Characteristics

Analogue Inputs 1 to 4	
Connectors	Combo XLR sockets: Mic/Line/Inst (Inputs 1 & 2); Mic/Line (Inputs 3 & 4) on front panel
Mic/Line switching	Automatic
Line/Instrument switching (Inputs 1 & 2)	via **Focusrite Control**
Phantom power	+48 V switches for inputs 1 & 2, 3 & 4
Analogue Inputs 5 to 8	
Connectors	4 x balanced ¼" TRS jacks, on rear panel
Analogue Outputs	
Main outputs	4 x balanced ¼" TRS jacks, on rear panel
Stereo headphone outputs	2 x ¼" TRS jack on front panel
Main monitor output level control	On front panel
Headphones level controls	

Other I/O	
ADAT Input	TOSLINK connector: 8 channels at 44.1/48 kHz 4 channels at 88.2/96 kHz Optical S/PDIF input (selectable)
S/PDIF I/O	2 x RCA
Data connector (to computer)	1 x USB-C™ connector
MIDI I/O	2 x 5-pin DIN sockets
Weight and Dimensions	
W x D x H	222 mm x 192 mm x 63.5 mm 8.74" x 7.56" x 2.5"
Weight	1.61 kg (3.55 lb)

TROUBLESHOOTING

For all troubleshooting queries, please visit the Focusrite Help Centre at support.focusrite.com.

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