Clarett 4Pre USB

User Guide
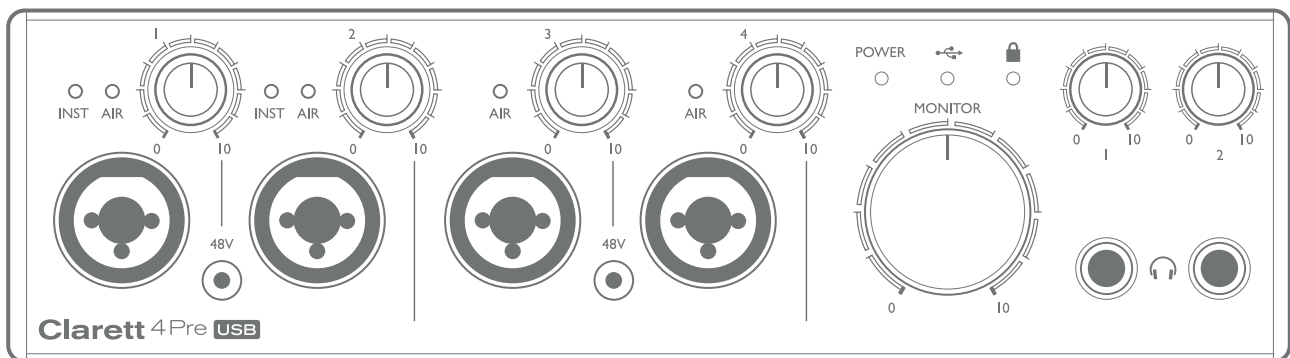

Focusrite®

www.focusrite.com

Version 1.0

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OVERVIEW

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

WARNING: This equipment is only compatible with USB Type 2.0, 3.0 or 3.1 ports, or Thunderbolt™ 3 ports. More information regarding the compatibility of computer serial ports can be found at:

https://support.focusrite.com/hc/en-gb/articles/115002287829-USB-port-clarification-and-compatibility

Introduction

Thank you for purchasing this Clarett 4Pre USB, one of the family of Focusrite professional USB audio interfaces incorporating newly-designed, high quality Clarett analogue pre-amplifiers with the unique AIR function. In conjunction with the Focusrite Control application, you now have a highly versatile and professional solution for routing high quality audio to and from your computer recording system, with super-low latency.

You can also use the Clarett 4Pre USB as a "stand-alone" interface on-stage, bringing the benefits of Focusrite's high-quality analogue microphone preamps to your live performance.

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 that you take the time to read through the Guide, whether you're new to computer-based recording or a more experienced user, so that you are fully aware of all the possibilities that the Clarett 4Pre USB has to offer.

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

If either of the Guides do not provide the information you need, be sure to consult www.focusrite.com/answerbase, which contains a comprehensive collection of answers to common technical support queries. A Getting Started video tutorial is also available, at: www.focusrite.com/get-started/clarett-4PreUSB.

Features

The Clarett 4Pre USB audio interface provides the means for connecting microphones, musical instruments, line level audio signals and digital audio signals to a computer through the computer's USB port. The signals at the physical inputs can be routed to your audio recording software / digital audio workstation (referred to throughout this user guide as the "DAW"); similarly, the outputs from the DAW can be configured to appear at the unit's physical outputs.

Audio sources – mics, instruments, etc., can be recorded into your DAW and then played back from there through amplifiers and speakers, powered monitors, headphones, a mixer or any other analogue or digital audio equipment that you wish to use.

The Clarett 4Pre USB is also a MIDI interface, allowing your computer to connect to other MIDI equipment in your studio.

An important feature of the Clarett 4Pre USB is the analogue preamplifier design. In addition to their class-leading dynamic range and ability to provide all the gain you're ever likely to need, the circuitry now includes an exciting new AIR function. Individually selectable on each channel, AIR subtly modifies the pre-amp's frequency response to model the impedance and resonance characteristics of Focusrite's classic transformer-based ISA mic preamps. When recording with good quality microphones, you will notice an enhanced clarity and definition in the important mid frequency range, just where it is most needed for vocals and many acoustic instruments.

The accompanying software application, **Focusrite Control**, is designed to require a minimal amount of user interaction, letting you easily configure the Clarett 4Pre USB with signal routings appropriate for the 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 http://uk.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 from your iOS device. See https://support.focusrite.com/hc/en-gb/articles/212028389-Focusrite-iOS-Control-Basic-setup for more information.

Box Contents

Along with your Clarett 4Pre USB you should have:

- External 12 V DC mains Power Supply Unit (PSU)
- USB-C to USB-A cable
- USB-C to USB-C cable
- Important Information, with codes for accessing the following on-line resources:
  - Focusrite Control*
  - Drivers for Windows* (Clarett 4Pre USB is class-compliant for Macs: no drivers required)
  - 2 GB of Loopmasters sounds and samples
  - Focusrite Red 2 and Red 3 Plug-in Suite
  - Softube Time & Tone plug-in bundle
  - Your choice of one XLN Audio Addictive Keys software instrument
  - Ableton Live Lite recording software

* These software items may also be accessed directly at www.focusrite.com/downloads

System Requirements

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

GETTING STARTED

> **IMPORTANT - FOR WINDOWS USERS:** PLEASE ENSURE THAT YOU INSTALL THE
> CLARETT 4PRE USB DRIVERS BEFORE CONNECTING THE INTERFACE
> TO YOUR COMPUTER.

Software Installation

All software required by the Clarett 4Pre USB, including several powerful and useful extras, is available for download from the Focusrite website (www.focusrite.com/register). The Important Information provided with your Clarett 4Pre USB contains validation codes which you will need to enter at the above web address. This procedure ensures that you will have the most up-to-date software versions.
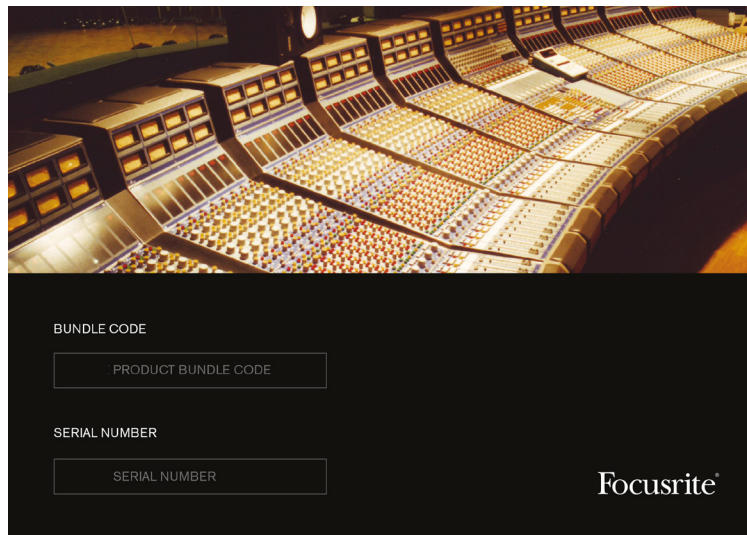

1. Go to www.focusrite.com/register/.

2. Follow the on-screen instructions, entering the Bundle Code into the form where prompted. Your Bundle Code can be found on the Important Information packed with the unit.

3. You will then be able to access the "My Products" page, where the software products to which your registration entitles you are available for download, complete with activation codes where applicable.

Windows users only:

    4. Download and install Focusrite Control, which includes the Windows USB drivers required by Clarett 4Pre USB. Follow all on-screen instructions.

    5. When the installation is complete, you will be prompted to restart your computer.

    6. After restart, connect the Clarett 4Pre USB to your computer with a USB cable.

7. If you are having trouble getting started please watch our video guide here - www.focusrite.com/get-started/clarett-4preUSB

Hardware Features

Front Panel
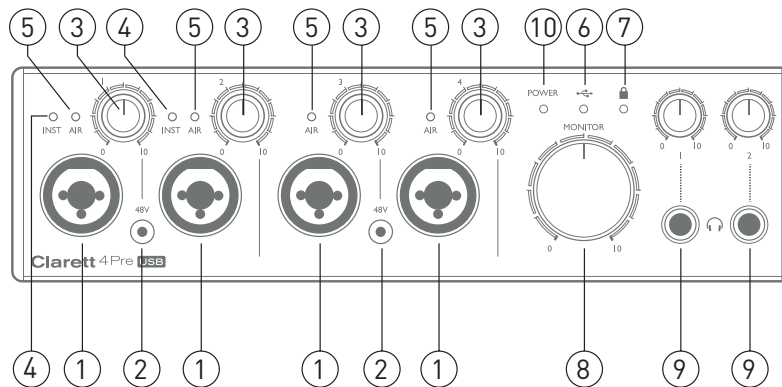
The front panel includes input gain and monitoring controls as well as four of the input connectors for Mic, Line and Instrument signals.

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 XLR contacts of the Combi connectors for mic inputs 1 & 2 and 3 & 4 respectively. Each switch each has an associated red LED indicating that phantom power is selected. Note that phantom power is only required by condenser and active ribbon mics; do not select phantom power when using dynamic mics.

3. Gain **1** to **4** – four rotary controls: adjust the input gain for the signals at Inputs 1 to 4 respectively. The gain controls have concentric bi-colour 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 INST mode is selected for the jack contacts of Inputs 1 or 2 from Focusrite Control software. When INST is selected, the line input is converted to a high impedance unbalanced input suitable for the direct connection of instruments via a 2-pole (TS) jack plug.

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

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

7. (Locked) – a green LED which confirms clock synchronisation, either to the Clarett 4Pre USB'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 the level of either or 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 a completely independent mix by using Outputs 5 and 6 in the software. Each headphone output has its own volume control.

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

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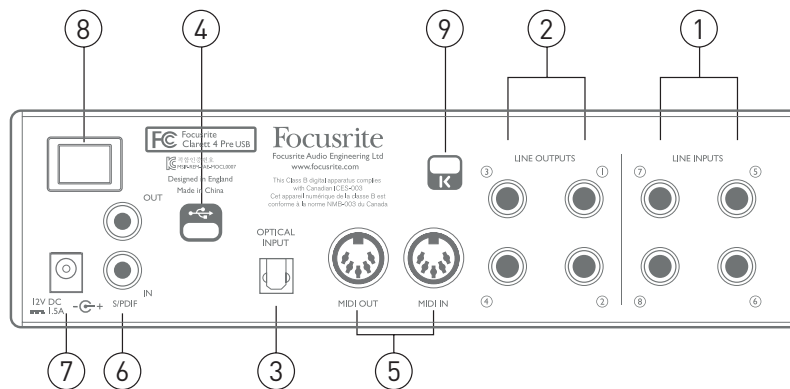
1. **LINE INPUTS 5** to **8** – four balanced analogue line inputs for Channels 5 to 8, on ¼" TRS jack sockets. Connect further line level signals here using ¼" TRS (balanced) or TS (unbalanced) jack plugs.

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 the 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). The 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. These are simply additional inputs to the Clarett 4Pre USB and appear within Focusrite Control as Inputs 11 to 18. This input can also be configured to work with an optical S/PDIF source. Note that this input is disabled at 176.4/192 kHz sample rate.

4. ⟵⟶ – USB-C™ connector; connect the Clarett 4Pre USB 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 for connection of external MIDI equipment, allowing MIDI data to/from your computer to be received and distributed to additional MIDI devices.

6. **SPDIF IN** and **OUT** – two RCA sockets carrying two-channel digital audio signals in or out of the Clarett 4Pre USB 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 USB 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 USB to a suitable structure if desired. Please see http://www.kensington.com/kensington/us/us/s/1704/kensington-security-slot.aspx for further information on how to use this feature.

Connecting your Clarett 4Pre USB

> **IMPORTANT:** Before you connect the Clarett 4Pre USB to your computer, please complete the software installation according to the instructions on page 6. This will ensure that the hardware uses the correct drivers, and will prevent unexpected behaviour.

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

Computer audio setup

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

- Mac OS: 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.

In case of difficulty, full details of how to select the Clarett 4Pre USB as the audio device on all operating systems can be found at www.focusrite.com/get-started/clarett-4PreUSB.

On all subsequent connections, your OS should automatically select the Clarett 4Pre USB 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 USB with the DAW of your choice.

Please note - your DAW may not automatically select the Clarett 4Pre USB as its default I/O device. In this case, you must manually select the driver on your DAW's `Audio Setup`* page, and select `Focusrite 4Pre USB` (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 USB as your audio device.

 * Typical name – page names may vary with DAW

Connecting Clarett 4Pre USB 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 incorporate 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.
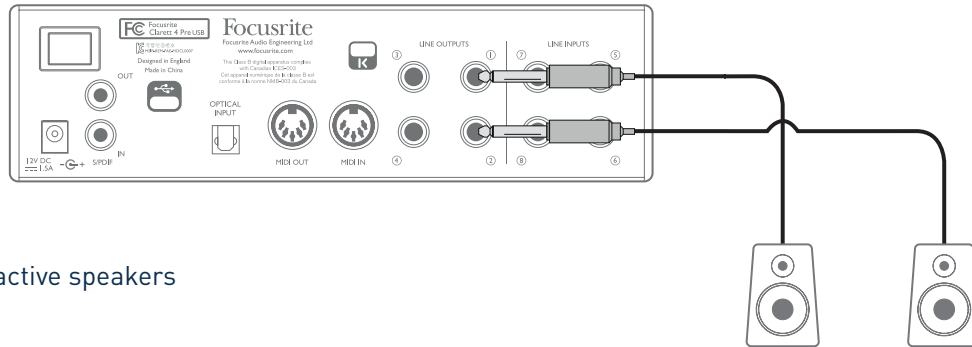
Connecting active speakers
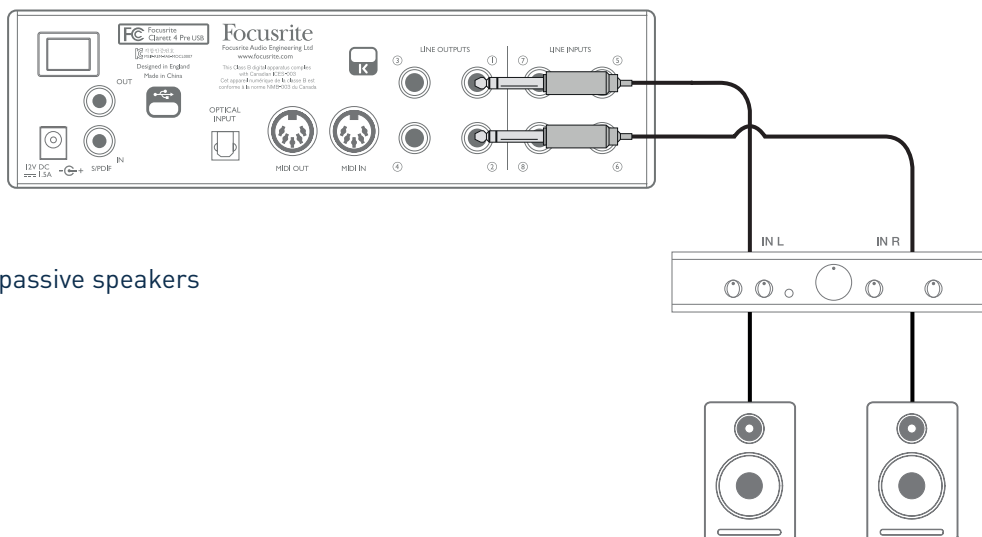
Connecting passive speakers

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 USB.

All the 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.
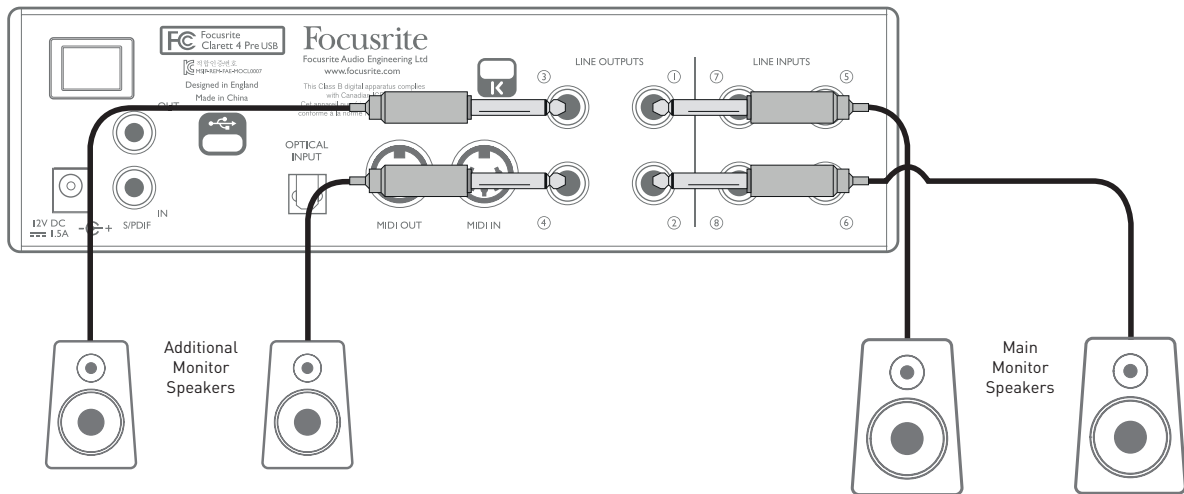
IMPORTANT:

LINE OUTPUTS 1 and **2** incorporate "anti-thump" circuitry that protects your speakers if the Clarett 4Pre USB 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, we recommend that you power your Clarett 4Pre USB on first, *then* turn on the speakers or power amplifier. But get into the habit of following the general rule in any case - it is *always* good audio practice to turn on a speaker system of any kind *after* turning on the equipment feeding it.

Examples of Usage

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

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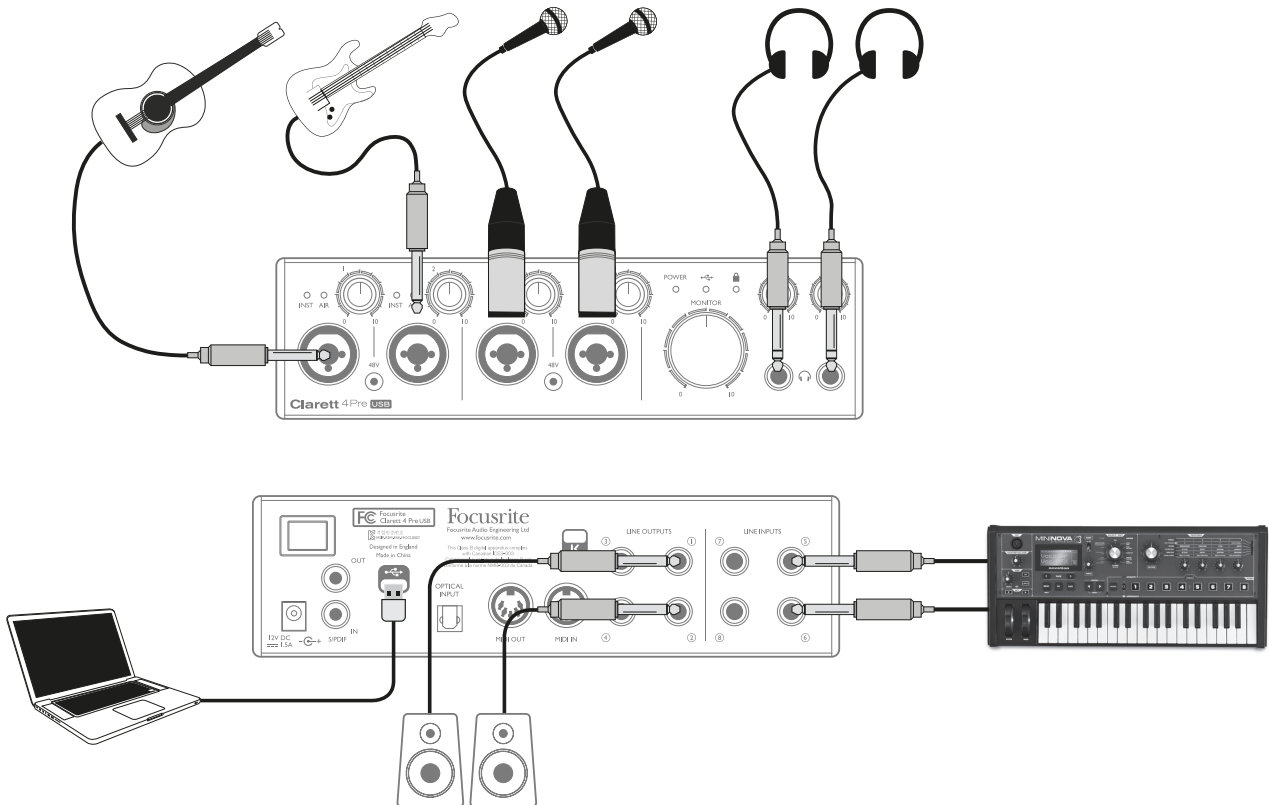
This setup illustrates a typical configuration for multitrack recording with DAW software on your computer.

In this example we are making a live recording of a small, largely acoustic band, consisting of electroacoustic guitar, bass guitar, synth and two vocalists. Two microphones and the two guitars are shown connected to the Clarett 4Pre USB'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 that INST mode is selected for Inputs 1 and 2 from Focusrite Control, and that the **INST** LEDs are illuminated. The two mics for vocals are plugged into Inputs 3 and 4; if they are condenser mics, press the 48V button to enable phantom power. The stereo line output from the synth is connected to **LINE INPUTS 5** and **6** on the rear panel.

The engineer can monitor the recording via Headphone Output 1 if he/she wishes, using Focusrite Control to set up his/her desired monitoring mix. A second, different mix can be created if necessary 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 case of the simple 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 simple recording situations, under some circumstances, 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 the size of your DAW's recording buffer, which could be necessary when you record overdubs on a particularly 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 most likely need to change this from the `ASIO ControlPanel` which can usually be accessed from your DAW `Setup Preferences`*.

The Clarett 4Pre USB, in conjunction with Focusrite Control, allows "zero latency monitoring", which overcomes this problem. You can route your input signals directly to the Clarett 4Pre USB'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 the eight analogue inputs, the Clarett 4Pre USB has an ADAT input port (**OPTICAL IN**) which can provide an additional 8 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 simple and excellent method of expanding the Clarett 4Pre USB's input capability. This could, for example extend the scope of the recording example above to include a close-miked drum kit, as shown below.


Clarett OctoPre
8ch Mic Amp
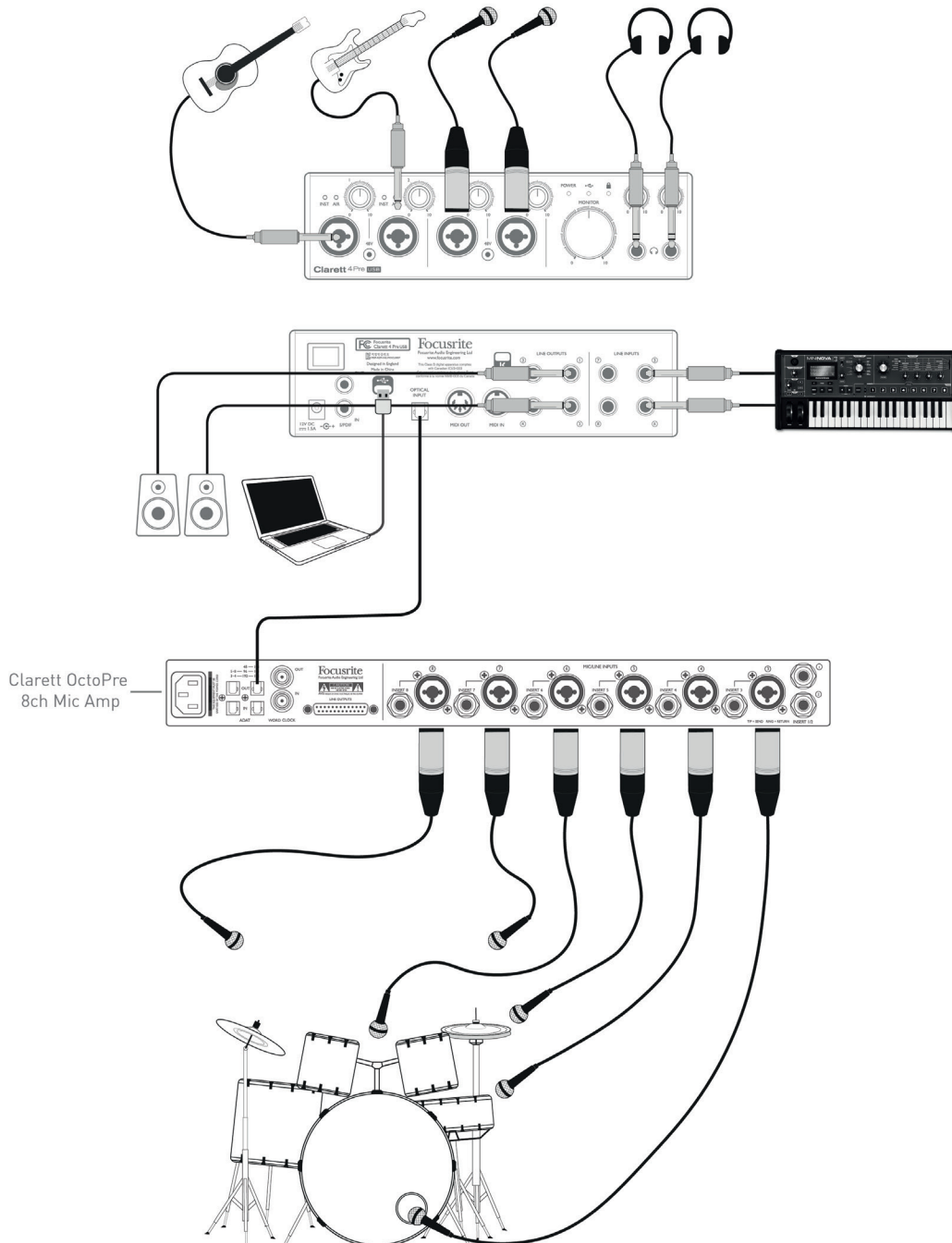
The Clarett OctoPre's **OPTICAL OUT** port is connected to the Clarett 4Pre USB's **OPTICAL IN** port with a single TOSLINK optical cable. The two devices must be synchronised to ensure audio passes cleanly, without clicks and pops. This can be achieved by selecting ADAT as the clock source on the

Device Settings tab of Focusrite Control. The two devices must be set to operate at the same sample rate.

The additional inputs realised by use of the optical port may be routed using Focusrite Control in exactly the same manner as the other inputs. The additional inputs can also form part of any musician's headphone mix, as required.

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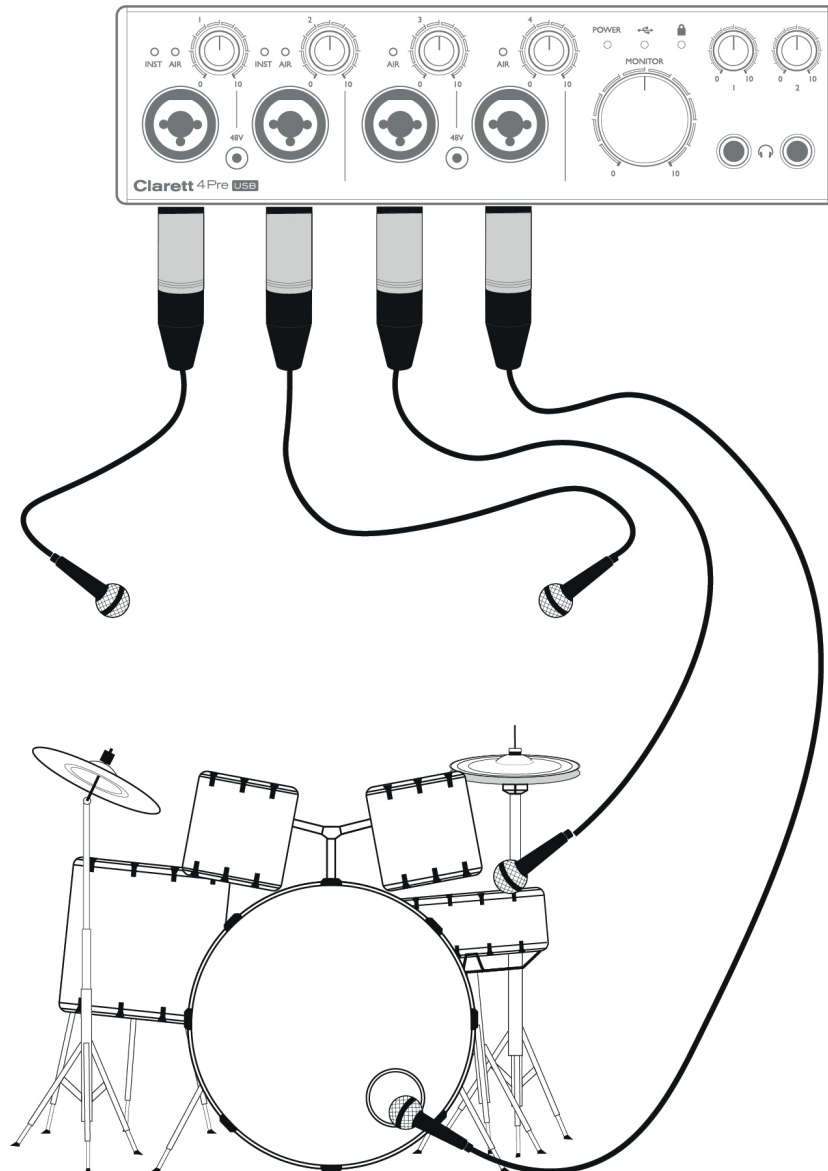
3. Providing foldback while recording

While recording, musicians will often prefer to hear themselves along with the other players, and when overdubbing, the tracks that have already been recorded. A mix created for this purpose, which the musician can hear on headphones while performing, is called foldback.

Focusrite Control lets you define several different mixes, each of which may be either mono or stereo, and which may be routed to any of the Clarett 4Pre USB's outputs. This enables individual musicians to have a foldback mix optimised to their own requirements. In this way, each foldback feed can be made up from a different mix of a musician's own input, the live contributions from the other performers, and DAW tracks which have already been recorded. See the Focusrite Control Guide for details of how to configure different mixes, and how to route them to the Clarett 4Pre USB'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 that 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 - that for Outputs 3/4 defines what is heard by Headphones 1, and that for Outputs 5/6 (which have no corresponding rear panel sockets) defines what is heard by Headphones 2.

Either or both of these may be used for foldback mixes; each output can drive a pair of headphones directly. This is the easiest method, and has the advantage that 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:
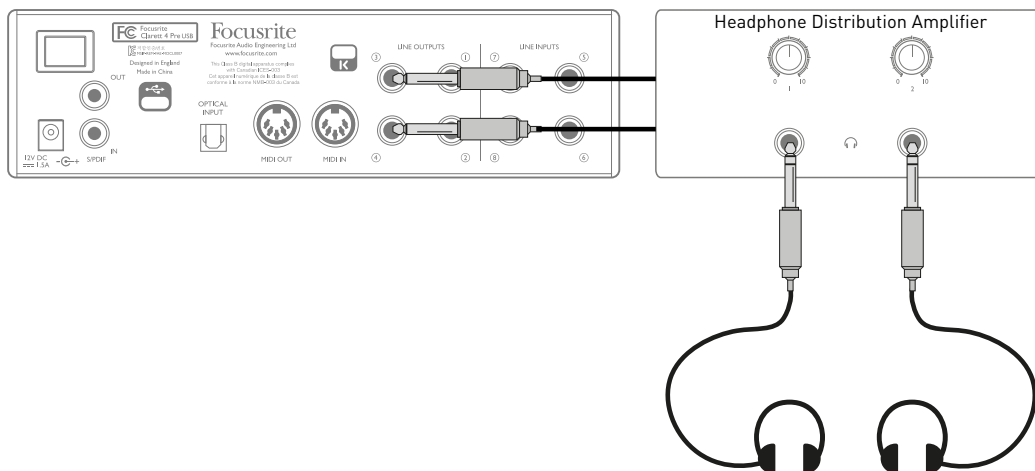
Always remember - when sourcing monitor mixes from input signals, ensure that the DAW channels on which you are recording are muted, otherwise the musicians will hear themselves "twice", with one signal audibly delayed as an echo.

FOCUSRITE CONTROL - OVERVIEW

Focusrite Control is the software application used with the Clarett 4Pre USB. It allows you to create a custom monitor mix for each musician, and also to specify the routing of all audio signals to the physical audio outputs. All sample rate selection, digital syncing and buffer size settings (Windows only) are available from Focusrite Control.

> **Note:** Focusrite Control is compatible with other hardware interfaces in the Focusrite product range. When you connect your Clarett 4Pre USB to your computer and launch Focusrite Control, the model of interface is automatically detected, and the software correctly configured to suit the hardware.

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

CLARETT 4PRE USB TECHNICAL SPECIFICATIONS

Performance Specifications

Configuration	
Inputs	18: analogue (8), S/PDIF (2), ADAT (8)
Outputs	8: analogue (4), S/PDIF (2), HP (2)
Mixer	Fully assignable 26-in/10-out mixer
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 - 35 kHz +/-0.5 dB at minimum gain
Dynamic Range	118 dB
THD+N	0.0009%
Noise EIN	<−128 dB (A-weighted)
Maximum input level	+18 dBu at minimum gain
Gain Range	57 dB
Line Inputs 1-4 (Variable Gain)	
Frequency Response	20 Hz - 35 kHz +/-0.5 dB at minimum gain
Dynamic Range	118 dB
THD+N	0.001%
Maximum input level	+26 dBu at minimum gain
Gain Range	57 dB
Line Inputs 5-8 (Fixed Gain)	
Frequency Response	20 Hz - 35 kHz +/-0.5 dB at minimum gain
Dynamic Range	118 dB
THD+N	0.001%
Maximum input level	+18 dBu at minimum gain
Gain Range	57 dB
Instrument Inputs	
Frequency Response	20 Hz - 35 kHz +/-0.5 dB at minimum gain
Dynamic Range	117 dB
THD+N	0.001%
Maximum input level	+14 dBu at minimum gain
Gain Range	57 dB

Line & Monitor Outputs	
Dynamic Range	118 dB
THD+N	0.0006%
Maximum Output Level (0 dBFS)	+18 dBu, balanced line/TRS outputs
Headphone Outputs	
Dynamic Range	115 dB (A-Weighted)
THD+N	0.0003% > 100R
Maximum Output Level	+15 dBu > 100R

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	On front panel
Other I/O	
ADAT Input	TOSLINK optical 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	1.35 kg 2.98 lbs

TROUBLESHOOTING

For all troubleshooting queries, please visit the Focusrite Answerbase at
www.focusrite.com/answerbase where you will find articles covering numerous
troubleshooting examples.

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