



Blackstar[®]
AMPLIFICATION
the sound in your head

 Designed and Engineered by
Blackstar Amplification UK

P O L A R 4
Owners' Manual - ENGLISH

Introduction

Our mission is to design the ultimate tools for self-expression for guitarists. In the 17 years since Blackstar was founded in Northampton, England, we have launched countless award-winning products that inspire guitarists around the globe.

After extensive research, development, and testing, we present **POLAR 4**, the audio interface designed for the recording guitarist. POLAR enhances your guitar DI signal to replicate the feel and response of playing through a real valve amplifier. POLAR is the ultimate audio interface solution that empowers guitarists and artists alike to unlock their fullest sonic potential with:

- 4 channels of studio-quality preamps to capture the full richness and detail of your **vocals and instruments**
- **FET instrument inputs** for ultra-low noise and high headroom, creating an excellent sonic foundation for your guitar tone
- The proprietary **Enhance** switch, adding a unique circuit that emulates the input stage of valve amplifiers, enriching the sound of all guitar amp plugins
- Instrument inputs that completely **prevent digital clipping**, allowing you to drive the input like the preamp stage of a valve amp
- Meticulously engineered microphone preamps, with **vintage mic preamp tone** that adds warmth and lifts vocal performances
- The power to **start recording now**, right out of the box with the included bundle of studio software
- **POLAR Control** software, offering complete control of your monitor mix and more
- iOS capability, allowing you to **stream and record on the go**

Contents

Introduction	2	DAW Setup	11	POLAR CONTROL - Examples	19
Contents	3	Ableton Live	11	POLAR CONTROL - Signal Flow	21
Getting Started	4	Logic Pro X	11	iOS	22
In the Box	4	Pro Tools	11	Lightning to USB Camera Adapter	22
System Requirements	4	Cubase	12	Lightning to USB 3 Camera Adapter	23
Software System Requirements	4	FL Studio	12	Operation	23
Getting Started	4	Studio One	12	MIDI	24
Overview - POLAR CONTROL	5	Connectivity	13	Specifications	25
Overview - POLAR 4 Hardware	6	Instrument and Microphone	13		
Panels – A Closer Look	7	Line Level Devices	14		
Inputs	7	POLAR CONTROL - Layout	15		
Setting Input Preamp Gain	7	POLAR CONTROL - Details	16		
Input and Output LED Meters	7	Channels	16		
+48V – Phantom Power	8	Direct Input Monitor	16		
Line/Instrument Switch	8	Level Fader	16		
Enhance Switch	8	Level Fader	17		
Monitor Level Control	9	dB Value Box	17		
Headphone Level Control and Output	10	Level Meter	17		
Balanced Outputs	10	Pan Control	17		
DC 5V Power Input	10	Mute / Solo Buttons	17		
USB-C	10	Stereo Link	17		
		Sample Rate	18		
		Preset Box and Save Button	18		
		Output Mix Section	18		

Getting Started

In the Box

- POLAR 4
- Quick Start Guide
- USB-A to USB-C Cable
- USB-A to DC Cable
- Safety Information Sheet

System Requirements

The POLAR 4 Audio Interface is compatible with:

- macOS 10.15 and later
- Windows 8 and later

Software System Requirements

POLAR Control software is compatible with:

- macOS 10.14 and later
- Windows 10 and later

File Directories

POLAR Control Preset Files are by default saved to the following directories:

■ macOS

~/Documents/Blackstar/Polar/Sessions

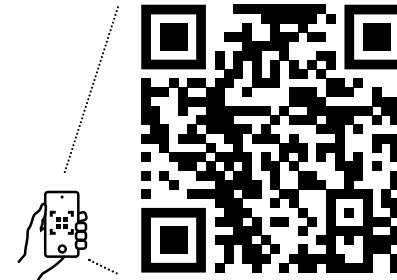
■ Windows

~/AppData/Roaming/Blackstar/Polar/Sessions

Getting Started

For information on downloading software, installation, and the included studio software collection please visit:

www.blackstar.com/polar4/go



Overview – POLAR Control

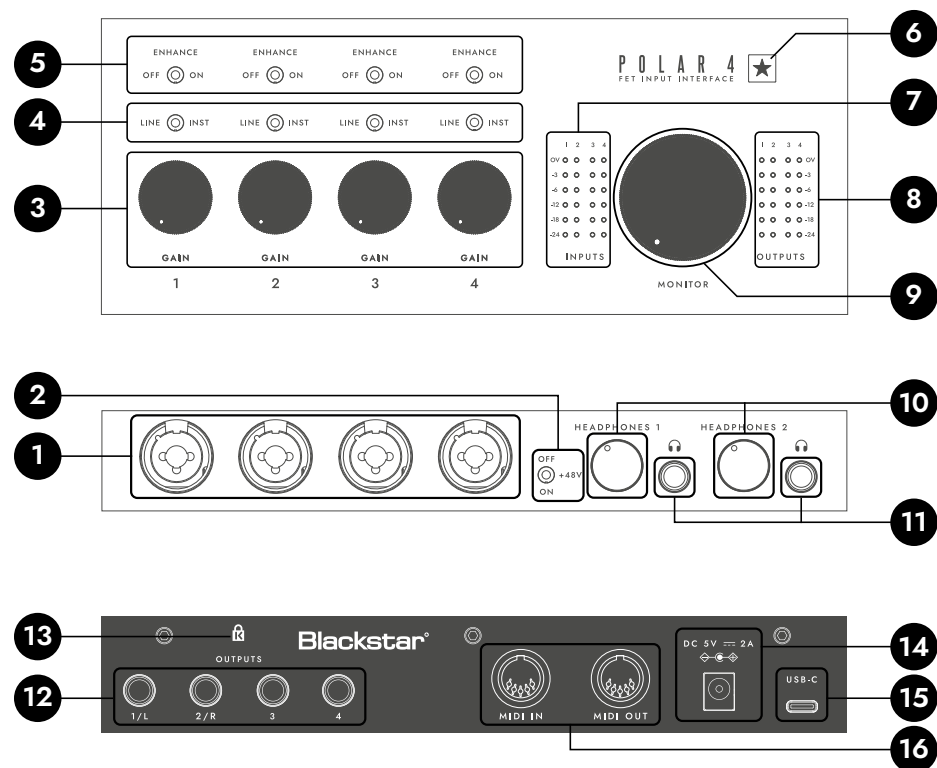
Blackstar's POLAR Control software, included with every POLAR interface, offers professional-level mixing and routing for Windows and Mac. Developed by expert audio engineers, it emulates traditional studio mixers for complete control and customization.

Streamline your workflow with quick adjustments and versatile routing seamlessly alongside your DAW—all within an intuitive, user-friendly interface.

For more details on POLAR Control, see page 15



Overview – POLAR 4 Hardware



- Inputs 1 & 4:** Connect your instrument, microphone, and line level devices here.
- +48V Switch:** Switch on to power condenser microphones, or other devices requiring phantom power.
- Input Gain Controls:** Adjusts the input gain to set the desired level for each channel.
- Line/Instrument Switch:** Toggle between line-level and instrument-level input signals for each channel, when connected to the input using a XLR cable, the LINE/INST switch is disabled.

- Enhance Switch:** Switch on to engage a unique circuit that emulates the input stage of a real valve amplifier on the instrument input; or to add a gentle high shelf EQ that brings out clarity on vocals.
- Power LED:** Lights white when the interface is powered.
- LED Input Meters:** Shows the preamp gain levels for each input, with peak hold functionality.
- LED Output Meters:** Shows the output levels being sent to the Balanced Outputs on the rear panel and Headphone output, with peak hold functionality.
- Monitor Level Control:** Adjusts the output level of the balanced outputs on the rear panel (1/L & 2/R)
- Headphone Output Jacks:** Connect your headphones here using a stereo 6.35mm (1/4") jack connected.
- Headphone Level Controls:** Controls the level sent to the headphones output.
- Balanced Outputs:** Connect to studio monitor speakers or devices with line inputs. We recommend using 1/4" TRS jack cables for balanced connections.
- Kensington Lock:** use a lock to secure the device and deter theft.
- DC 5V Power Input:** an optional way to supply power to your POLAR 4
- USB-C:** Connect your POLAR 4 to your computer using the supplied USB-A to USB-C cable. Most computers will power your POLAR 4 using this port only (bus power).
- MIDI Input and Output:** 5-Pin MIDI connections for MIDI devices

TIP: The **Enhance Switch** works in one of two ways, depending on what source is connected to the input.

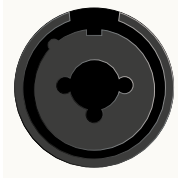
To add the feel and response of real valve amps, make sure you're connected to the input using a 1/4" jack cable, and that INST is selected for that input.

To add clarity and presence to vocals and more, make sure you're connected to the input using an XLR cable. Connecting an XLR cable will disable the LINE/INST switch.

Panels – A Closer Look

This section will take an in-depth look at all the functions and features available on your POLAR 4 hardware.

Inputs



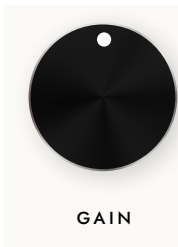
POLAR 4 features two Combi jack inputs that accept unbalanced mono (TS) ¼”, balanced Mono (TRS) ¼”, and XLR jack cables.

Connecting an XLR cable here disables the LINE/INST switch.

Setting Input Preamp Gain

The input preamp level is the level of the signal entering your audio interface, which is the same signal that will be sent to your computer/device and DAW (Digital Audio Workstation).

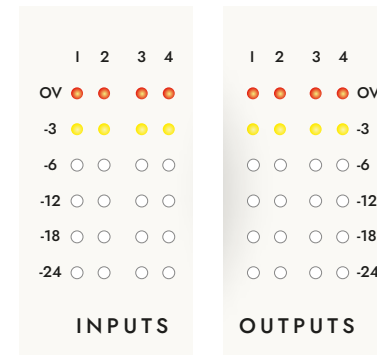
Properly setting preamp input gain level ensures optimal recording quality, without introducing unwanted digital clipping or noise. If you set the level too low you’ll likely end up boosting it afterwards, which could result in hearing more noise on your recording. If the signal is too high, you can introduce digital clipping, which sounds like harsh distortion.



To increase the input gain, turn the **Input Gain Control** clockwise.

As you adjust the input gain, while sending signal to your input, you can use the LED Input Meters on the top panel, the input meters on Polar Control (pg. 17), or the meters in your DAW to visually monitor your input level.

Input and Output LED Meters



POLAR 4 features peak hold LED metering, a feature that professional audio engineers and musicians use to monitor and control audio signal levels more effectively.

Peak hold metering is a type of level metering that temporarily “holds” the peak level of an audio signal on the meter, allowing you to see the highest signal level reached over a short period. This helps in identifying and adjusting levels to prevent clipping and distortion.

POLAR 4’s LED meters show signal level in dBFS (Decibels relative to full scale) in the following increments:

- LED 1 (White): -24 dB
- LED 2 (White): -18 dB
- LED 3 (White): -12 dB
- LED 4 (White): -6 dB
- LED 5 (Orange): -3 dB
- LED 6 (Red): OV (at 0dBFS or over)

When the signal has reached the indicated level, the corresponding LED will light.

TIP: When setting input level, we recommend aiming for a signal that peaks around -12dB to -6dB. This allows enough headroom to prevent clipping without sacrificing sing-to-noise ratio.

Panels – A Closer Look (cont'd)

+48V – Phantom Power



48V, often called “Phantom Power”, is a standard feature that supplies power from your interface through an XLR cable to certain devices that require this extra power to work. Most of the time this will be used for condenser microphones, but can also be needed for inline microphone preamps, active dynamic microphones, or active DI boxes.

1. **Turn Off +48V:** Ensure that phantom power is off before connecting an XLR to prevent any potential damage.
2. **Turn Down Gain:** Turn down the Input Gain Control to avoid loud click or pop noises.
3. **Connect the Microphone:** Plug in your condenser microphone, or other device that requires phantom power, into the XLR input on your POLAR 4.
4. **Turn On +48V:** Once connected, turn on the phantom power switch.
5. **Set your level:** Now you're ready to increase and set your gain. You will see incoming level on the Input LED Meters on the top panel.

Always turn off phantom power before connecting or disconnecting an XLR cable to avoid loud pops that could damage speakers or headphones.

IMPORTANT: Most modern dynamic and ribbon microphones will not be damaged if you accidentally have +48V on. However, some vintage ribbon microphones might be. When in doubt, it's always best to check the microphone's documentation to confirm.

Line/Instrument Switch



The **LINE/INST** switch only affects the corresponding input's signal coming in via the 1/4" part of the Combi jack Input. When an XLR is connected, the LINE/INST switch is bypassed

When LINE is selected, the input is setup to be suitable for line-level devices such as keyboard and studio outboard equipment.

When INST is selected, the input is setup to be more suitable for instrument level devices such as an electric guitar or bass.

Enhance Switch



The Enhance Switch works in one of two ways depending on what you have connected to the input, and whether you have INST selected on your POLAR 4 interface.

1. **1/4" Instrument jack cable connected, INST selected:**

Both instrument input sections on your POLAR 4 feature a harmonically rich FET input stage, providing you the best sonic foundation for your guitar tone.

As experts in the field of valve amp design and topologies, our team of engineers, developers, and guitar players have created a first-of-its-kind Enhance Switch to instantly improve the touch, feel, and response of your guitar DI signal.

When you switch on Enhance on the instrument input, it engages a unique circuit that's been meticulously designed to mimic the input stage of real valve amplifiers—including all its non-linear behaviours and characteristics.

Panels – A Closer Look (cont'd)

Immediately hear the tone of your guitar slightly bloom and come alive, making any guitar amp plugin sound like you're playing through a real amp!

Another feature that makes POLAR 4's Enhance switch ground-breaking for recording guitars directly is that it *completely prevents digital clipping*, no matter how much input gain you add. This special circuit allows you to drive Polar's inputs like a valve amp's preamp section.

2. XLR Cable Connected

When an XLR cable is connected, the LINE/INST switch is disabled, and the POLAR 4 enables its studio quality microphone preamps.

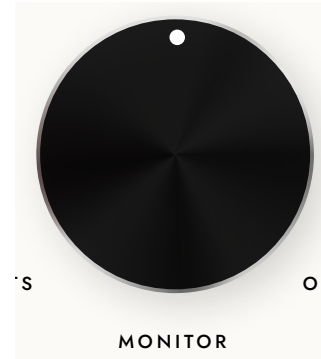
Switching on Enhance on the microphone preamps adds a gentle high shelf EQ to the signal.

Dialled in by Blackstar's very own staff who have decades of experience in professional audio engineering and production, this high shelf EQ subtly lifts the top end to bring out just the right amount of air and clarity from vocal performances, even acoustic guitars, and more.

NOTE: If you have a 1/4" jack cable connected to the input and LINE selected, the Enhance switch will be disabled.

If you notice the Enhance switch isn't adding the enhanced effect on your guitar signal, make sure you've selected INST.

Monitor Level Control



The large monitor control allows you to **adjust the output level** sent to the Balanced Outputs on the rear panel, typically connected to your studio monitors.

Turn the knob clockwise to increase the volume and counter-clockwise to decrease the volume.

NOTE: The Output LED Meters are pre-fader, meaning they will show the dBFS level of the signal coming from your computer even if the Monitor Level Control is turned all the way down.

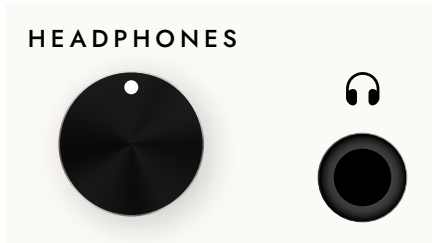
TIP: For the most resolution over your output level control, try setting up your studio monitor level in this order:

1. Turn the volume on your studio monitors all the way down.
2. Turn the Monitor Control Knob up to about 3 o'clock.
3. Playback your audio and gradually turn up the volume of your studio monitors until the level is at the loudest that you need.

Now you have detailed control over the full range of your output level needs, while leaving some room for a bit more passed 3 o'clock when necessary.

Panels – A Closer Look (cont'd)

Headphone Level Controls and Outputs



Polar's headphone outputs are designed to drive both low and high impedance headphones, providing clear and accurate monitoring.

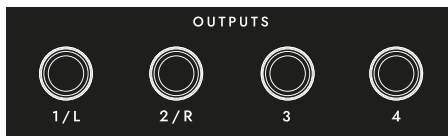
The **Headphone Output Jacks** are 1/4" stereo jacks.

The dedicated Headphone Level Controls allows you to adjust the headphone level independently from your monitors.

If your headphones only have a 3.5mm connector, you can use a stereo 3.5mm to stereo 6.35mm (1/4") adapter to connect to Polar's headphone output.

Using headphones with a TS or TRRS connector (such as headphones with a microphone or volume control built into the cable) will most likely not work. We always recommend using headphones with a stereo connector and/or stereo adapter.

Balanced Outputs



Outputs 1/L, 2/R, 3 and 4 are line-level outputs designed to connect your POLAR 4 to active monitors or devices that take a line level input. These outputs use balanced 1/4" TRS jacks and can

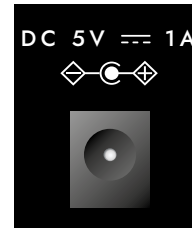
accommodate both unbalanced TS and balanced TRS jack cables.

The **Monitor Level Control** on the top panel of your POLAR 4 adjusts the output level for Outputs 1/L and 2/R.

MIDI

For more information on MIDI see page 24

DC 5V Power Input



Most computers will have no issues supplying power to your POLAR 4 over USB, however, if you are using additional peripherals or high-power devices alongside your POLAR 4, the computer's USB port may not supply enough power.

You'll usually know when this happens if the POLAR 4 keeps disconnecting during intense usage, for example, playing headphones at a loud level and powering two condenser microphones with phantom power.

For these cases, the **DC 5V** Power Input allows you to power your Polar Audio Interface using DC 5V power. Use the included USB to 5V cable to connect your adapter to any standard DC 5V power adapter.

NOTE: When using iOS devices, you must power your POLAR 4 with DC 5V. For more details, see the iOS section on page 22.

USB-C



The USB-C connection on the Polar Audio Interface is used to connect the interface to your computer. This connection facilitates power supply, data transfer, and communication to the Polar Control software.

Use the included USB-A to USB-C cable to connect directly to an open USB-C port on your computer.

IMPORTANT: Avoid connecting your POLAR 4 to your computer using a USB hub, as this will cause issues and is not supported.

DAW Setup

Digital Audio Workstation (DAW) is a software application used for recording, editing, mixing, and producing audio.

Polar is compatible with any DAW that supports ASIO on Windows and any DAW that supports Core Audio on macOS.

TIP: If you don't already have a DAW installed on your computer, you can get started quickly with the included Ableton Live Lite software that comes with your POLAR 4.

The rest of this section will cover how to set up your POLAR 4 to start recording with the most popularly used DAWs, including:

- Ableton Live
- Logic Pro X
- Pro Tools
- Cubase
- FL Studio
- Studio One

Before following each guide, make sure you've connected your POLAR 4 to your computer using the USB-C connection, ensuring that the interface is powered on and properly connected.

Ableton Live

1. Setup:

- Open Ableton Live and go to Preferences (usually found under the Live menu on Mac or Options menu on Windows).
- Select the Audio tab.
- Under Audio Input Device, choose the Polar Audio Interface.
- Under Audio Output Device, select the Polar Audio Interface.
- Adjust the buffer size and sample rate as needed for your project.

2. Recording Audio:

- Create a new audio track in Ableton Live.
 - Select the input channel corresponding to the connected instrument or microphone.
 - Arm the track for recording by clicking the record button on the track.
 - Press the main record button in Ableton Live to start recording.
- USB-C port on your computer.

Logic Pro X

1. Setup:

- Open Logic Pro X and go to Preferences > Audio.
- Under the Devices tab, set Output Device and Input Device to the Polar Audio Interface.
- Adjust the buffer size and sample rate as needed for your project.

2. Recording Audio:

- Create a new audio track in Logic Pro X.
- Select the appropriate input channel for your connected instrument or microphone.
- Arm the track for recording by clicking the R button on the track.
- Press the main record button in Logic Pro X to start recording.

Pro Tools

1. Setup:

- Open Pro Tools and go to Setup > Playback Engine.
- Select the Polar Audio Interface as the Playback Engine.
- Go to Setup > I/O and configure the inputs and outputs as needed.

DAW Setup

2. Recording Audio:

- Create a new audio track in Pro Tools.
- Select the appropriate input channel for your connected instrument or microphone.
- Arm the track for recording by clicking the record enable button on the track.
- Press the main record button in Pro Tools to start recording.

Cubase

1. Setup:

- Open Cubase and go to Studio > Studio Setup.
- Select VST Audio System and choose the Polar Audio Interface as the ASIO driver.
- Go to Studio > Audio Connections and set up the input and output busses.

2. Recording Audio:

- Create a new audio track in Cubase.
- Select the appropriate input channel for your connected instrument or microphone.
- Arm the track for recording by clicking the record enable button on the track.
- Press the main record button in Cubase to start recording.

FL Studio

1. Setup:

- Open FL Studio and go to Options > Audio Settings.
- Select the Polar Audio Interface as the audio device.
- Adjust the buffer size and sample rate as needed for your project.

2. Recording Audio:

- Select the appropriate input channel in the mixer for your connected instrument or microphone.
- Arm the track for recording by clicking the record button in the mixer track.
- Press the main record button in FL Studio to start recording.

Studio One

1. Setup:

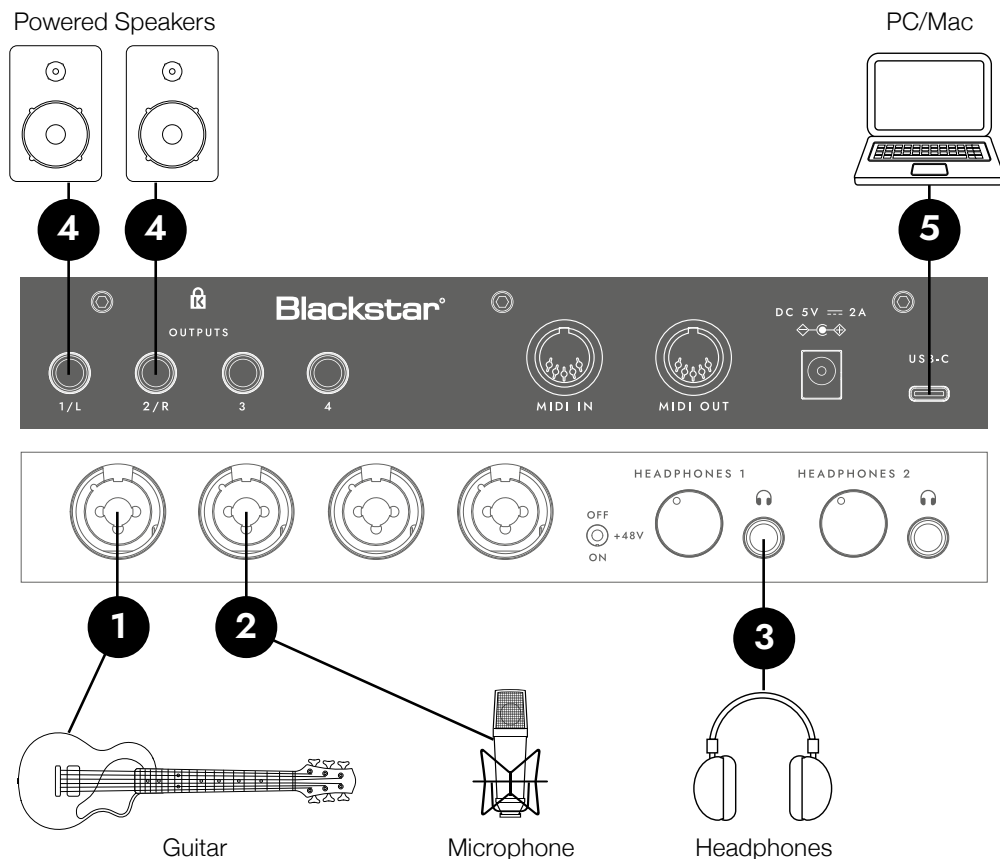
- Open Studio One and go to Studio One > Options (Windows) or Preferences (Mac).
- Select Audio Setup and choose the Polar Audio Interface as the audio device.
- Adjust the buffer size and sample rate as needed for your project.

2. Recording Audio:

- Create a new audio track in Studio One.
- Select the appropriate input channel for your connected instrument or microphone.
- Arm the track for recording by clicking the record enable button on the track.
- Press the main record button in Studio One to start recording.

Connectivity

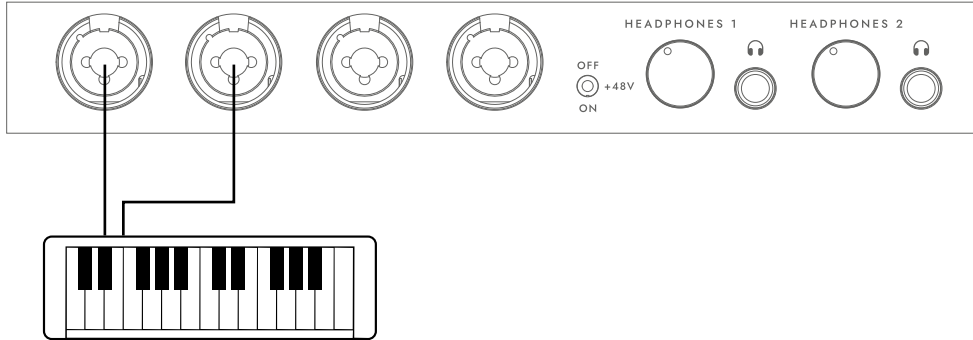
POLAR 4 supports connections for a wide range of audio equipment. This diagram illustrates a typical setup and how to make each connection.



Instrument and Microphone

1. Connect your guitar, bass, or other instruments to Input 1 using a standard 1/4" instrument cable. Make sure you select INST on the LINE/INST switch. Enable the Enhance switch to optimize the signal with valve amp inspired circuitry.
2. Connect your microphone to Input 2 using an XLR cable. If you're using a microphone that requires phantom power (most condenser microphones) make sure to enable the +48V phantom power switch.
3. Plug your headphones into the headphone output. If your headphone only has a 3.5mm jack, you'll need to use a 3.5mm to stereo 6.35mm (1/4") adapter. Use the headphone volume control to adjust the listening level.
4. Connect your studio monitors to the balanced outputs. Plug you left monitor to 1/L and your right monitor to 2/R. We recommend using TRS cables.
5. Connect the POLAR 4 to your computer using a USB-C cable. This connection handles both power and data transfer.

Connectivity (cont'd)



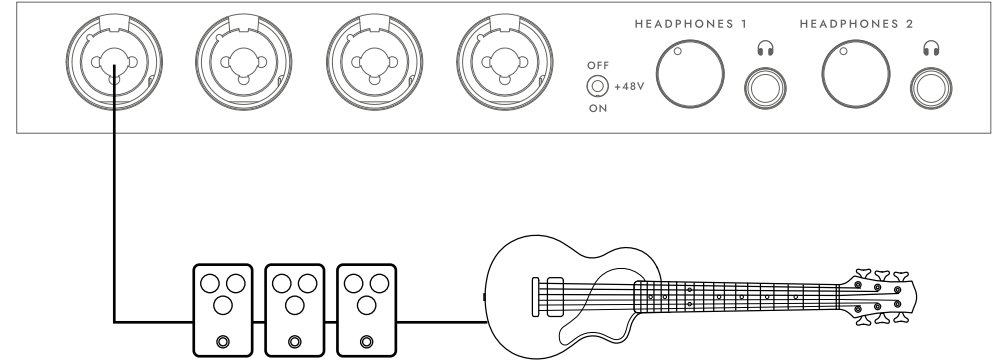
Line Level Devices

For line-level devices like keyboards and drum machines, use the combo jack inputs on Channels 1 and 2 with 1/4" TRS or TS cables.

Make sure you select LINE on the LINE/INST switch.

For devices with stereo outputs (like some keyboards), you can connect the left output to Input 1, and the right output to Input 2.

NOTE: When LINE is selected, the Enhance switch is bypassed for 1/4" TRS and TS inputs.



Pedal Chain Setup

Thanks to the Enhance switch, which mimics the input stage of a valve amp, the POLAR 4's inputs are ideally suited for guitar pedals. This allows you to use your favourite guitar effects pedals during recording to capture their authentic sound.

To use this setup, connect your guitar to the input of your first pedal. Then, connect the output of the last pedal in the chain to Input 1 on POLAR 4 using a 1/4" instrument cable.

POLAR CONTROL - Layout

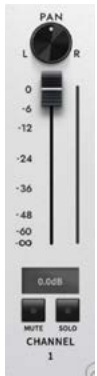
Polar Control is the software mixer app for the Polar Audio Interface. Designed to operate like a traditional mixer, it offers you the most flexibility for all of your signal routing needs. For a quick look at how signal is routed on Polar Control, see page 21.



1. **Stereo Link:** Links two channels together, allowing them to be controlled simultaneously for stereo operation.
2. **Channel Name:** Indicates the name and function of the channel
3. **Mute/Solo Buttons:** Allows you to mute or solo a specific channel, isolating it or silencing it from the mix.
4. **dB Value Box:** Displays the current decibel level setting of the channel.
5. **Level Meter:** Shows the audio level for the channel in dBFS
6. **Level Fader:** Adjusts the volume level of the channel.
7. **Pan Control:** Pans the audio signal left or right in the stereo field.
8. **Direct Input Monitor:** Toggles direct monitoring of the input signal, allowing for latency-free monitoring.
9. **Sample Rate:** Shows and allows adjustment of POLAR 4's sample rate.
10. **Preset Box:** Shows the current preset configuration, and allows you to load/save different presets.
11. **Save Button:** Saves the current settings as a preset.
12. **Output Mix Buttons:** Selects and shows the current mix for the selected Output Mix.

POLAR CONTROL - Details

The Polar Software App is designed to enhance the functionality of your Polar Audio Interface, providing control over monitoring levels, mixing, and routing. This section will guide you through each feature of the software, explaining how to use them effectively.



Channels

Like most traditional audio mixers, Polar Control has multiple channels, each with their own individual pan control, level fader, level meter, decibel value box, mute, solo, and stereo link button.

The Channel Name indicates the function of each channel, for example, Channel 1, Channel 2, Playback 1L/2R, and Virtual 3/4.

The channel name is automatically assigned based on the input or output configuration and cannot be manually changed.

Direct Input Monitor



Before going into further detail of each channel's functions, it's helpful to

understand what the Direct Input Monitor button does, and how to use it.

Enabling the Direct Input Monitor button allows you to directly hear the signal coming into Polar's preamps (Input 1 and 2 on your Polar Interface).

Typically, using software monitoring in your DAW introduces a small amount of latency. While usually minimal, this latency becomes more noticeable as your session becomes more demanding (e.g., with many plugins or high track counts), increasing the load on your computer.

With Direct Input Monitor, you can monitor the signal straight from the inputs of your POLAR 4 with near-zero latency, which can be crucial for monitoring live vocal performances and more.

Disabling Direct Input Monitor will mute Channel 1 and 2 on Polar Control.

IMPORTANT: When using Direct Input Monitor, you'll almost always want to disable software monitoring in your DAW.

If you're monitoring live vocals that sound slightly doubled, or if you hear an unintended guitar DI signal, check to make sure you don't have software monitoring in your DAW and Direct Input Monitor on Polar Control enabled at the same time.

Level Fader



Each channel on Polar Control features a Level Fader that adjusts the channel's volume level.

Click and drag, or scroll the fader up or down to increase or decrease the volume. The dB Value Box will reflect your adjustments. Double-clicking the fader snaps the level to -6.0 dB.

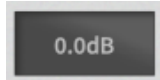
IMPORTANT:

Fader vs. Preamp Gain: The Level Fader does not control Polar's preamp control or the preamp's gain. It only adjusts the monitoring level of the input. The preamp gain can only be set using the Gain Control on your POLAR 4 Interface.

What This Means: Adjusting the Level Fader will change how loud the signal sounds in your headphones or monitors but will not affect the actual recording level of the input signal.

POLAR CONTROL - Details (cont'd)

dB Value Box



The dB Value Box displays the current decibel level of the channel. The box updates automatically as you adjust the Level Fader. You can also click inside the box to type in a specific dB value. Values must be typed accurately including the minus “-” sign for value below 0.0 db.

Level Meter



The Level Meter provides a visual representation of the audio signal level for each channel in dBFS (decibels relative to Full Scale).

Like the LED Meters on your POLAR 4, Polar Control's meters move up and down in response to the signal input.

You can use Polar Control's Level Meters to monitor the preamp level as you adjust the Gain Control on your POLAR 4 Interface. For more details, see “Setting Input Preamp Gain” on page 7.

NOTE: The Level Meters on Polar Control display the signal level before it reaches the Level Fader. This is known as “pre-fader metering.”

This means that regardless of how you adjust the Level Fader, the Level Meter shows the raw input signal.

Pan Control



The Pan Control allows you to position the audio signal in the stereo field.

Click on the Pan Control and drag either up-and-down, or left-and-right to move the signal towards the left or right speaker/headphone.

You can double-click the Pan Control to return to centre.

Mute / Solo Buttons



The Mute and Solo buttons silence or isolate the audio for each channel.

Mute Button: Click to silence the channel. The button will light up to indicate the channel is muted.

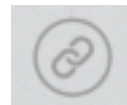
Solo Button: Click to isolate the channel, which will have the effect of muting all other channels. The button will light up to indicate the channel is soloed.

You can Solo and/or Mute multiple channels at once, noticeable as your session becomes more demanding (e.g., with many plugins or high track counts), increasing the load on your computer.

TIP: If you don't hear audio, but you see signal on Polar Control's Level Meter, make sure that either:

1. The channel isn't accidentally Muted.
2. The Level Fader isn't accidentally all the way down.
3. Other channels aren't unintentionally Soloed.
4. The correct Output Mix is selected, (see page 18)

Stereo Link



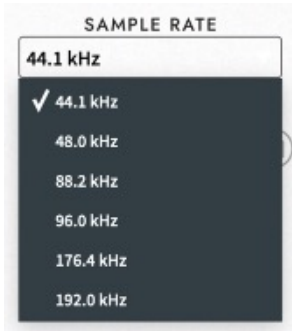
The Stereo Link button allows you to link two channels together for synchronized control, which is useful for stereo recordings and playback.

When enabled, the two adjacent channels will collapse to become one stereo channel, showing one set of Channel controls that affects both channels at the same time.

By default, Polar Control will have Playback 1L/2R and VIRTUAL 3/4 linked as stereo.

POLAR CONTROL - Details (cont'd)

Sample Rate



The Sample Rate setting controls how many times (samples) per second the audio is captured or played back on your computer. It affects the quality of your recordings. Higher numbers mean better quality and resolution, but also bigger file sizes and processing demand on your computer.

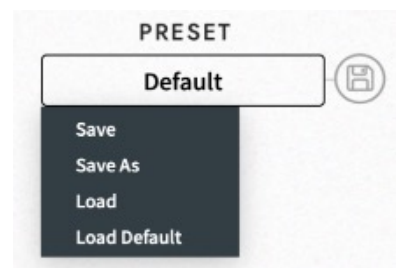
POLAR 4 can record and playback at up to 192 kHz.

NOTE: Usually your DAW will determine the sample rate, and changing sample rates in your DAW would automatically update in Polar Control.

If you experience issues with playback (e.g., audio glitches or dropouts), verify that the sample rate setting matches across Polar Control and your DAW.

TIP: For most audio production, a sample rate of 44.1 kHz offers plenty of resolution. For video and broadcast, a sample rate of 48kHz is often recommended.

Preset Box and Save Button



The Preset feature in Polar Control lets you save and load mix configurations, allowing for quick switching between different setups to suit your recording or mixing needs.

Clicking the Preset Box opens a dropdown menu where you can Save and Load your custom presets. Loading the Default preset

restores the settings to the default factory preset.

You can click the Save Button to quickly save the current mix configuration.

Output Mix Section

Just like a traditional audio mixer, Polar Control lets you combine different audio signals and send them to a main output. This is the core of how Polar Control works, giving you unlimited flexibility to control what you hear in your headphones or speakers, and/or how you route your signals.

Output Mix Buttons:

Think of the Output Mix Buttons as different “pages” you can view.

When you select the Output 1 + 2 button, you see the volume (Fader) and balance (Pan) levels for what’s coming out of the Balanced Outputs 1/L & 2/R, and Headphone Output 1 on your Polar 4.

When you select the Output 3 + 4 button, you see the volume (Fader) and balance (Pan) levels for what’s coming out of the Balanced Outputs 3 & 4, and Headphone Output 2 on your Polar 4.

If you select the Virtual 5 + 6 button, you see the levels for a separate mix that can be used for different purposes, like streaming or recording.

You can refer to the signal diagram on page 21 for a visual guide on understanding the complete signal flow within Polar Control.

TIP: If you’re making mix adjustments, but don’t hear the changes, make sure that the correct output mix is selected!

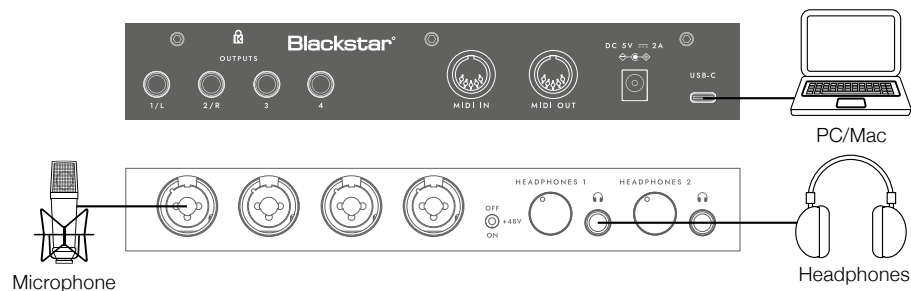
POLAR CONTROL - Examples

This section outlines a few recording setups that will enhance your experience using the Polar Control software.

1) Recording your own vocals with zero-latency monitoring

Start with:

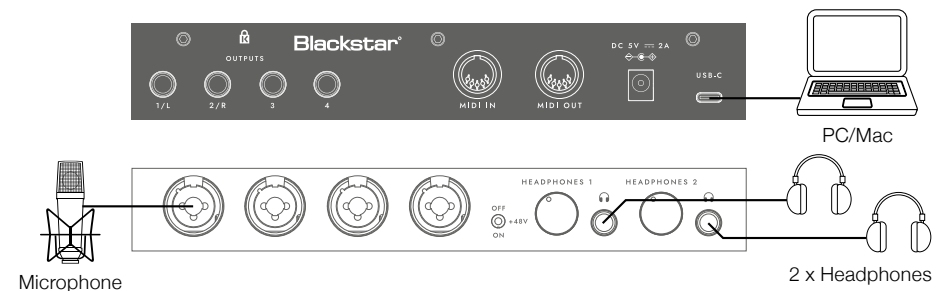
- POLAR 4 connected to your computer
 - DAW open, with **software monitoring off**, and POLAR 4 selected as your audio device
 - Headphones connected to your POLAR 4
1. Connect your microphone to Input 1 on your Polar interface. If your microphone requires phantom power, switch +48v to On.
 2. On Polar Control, enable Direct Monitor Input.
 3. On Polar Control, select Output 1+2, then raise Channel 1's Fader to -6.0 dB
 4. With your headphones on, speak/sing into the microphone while raising the Gain control on your POLAR 4 to set an appropriate level (to learn about setting levels see page 7)
 5. You can use Channel 1's Fader to adjust the monitoring level of your microphone signal.
 6. On your DAW, when you playback audio, by default it will appear on Polar Control on Channel Playback 1L/2R. You can use Playback 1L/2R's Fader to adjust the level of your DAW playback signal.
 7. Using both Faders, you can balance the levels of the DAW and live vocal signal to easily create a comfortable mix.



(2) Recording someone else's vocals with zero-latency monitoring and independent monitoring mixes

Start with:

- POLAR 4 connected to your computer
 - DAW open, with **software monitoring off**, and POLAR 4 selected as your audio device
 - Your headphones connected to Headphone Out 1, and the singer's headphones connected to Headphone Output 2.
1. Connect a microphone to Input 1 on your Polar interface. If the microphone requires phantom power, switch +48v to On.
 2. On Polar Control, enable Direct Monitor Input.
 3. On Polar Control, select Output Mix 1+2, then raise Channel 1's Fader to -6.0 dB
 4. On Polar Control, select Output Mix 3+4, then raise Channel 1's Fader to -6.0 dB
 5. With the singer's headphones on, ask them to speak/sing into the microphone while raising the Gain control on your Polar 2 to set an appropriate level (to learn about setting levels see page xx)
 6. On Polar Control, you can use Channel 1's Fader to adjust the monitoring level of the microphone signal. Output Mix 1+2 will set the level for the Headphone Output 1, and Output Mix 3+4 will set the level for the Headphone Output 2.
 7. On your DAW, when you playback audio, by default it will appear on Polar Control on Channel Playback 1L/2R. You can use Playback 1L/2R's Fader to adjust the level of your DAW playback signal.
 8. Using the Faders, you can balance the levels of the DAW and live vocal signal to easily create a comfortable mix for you and the vocalist.



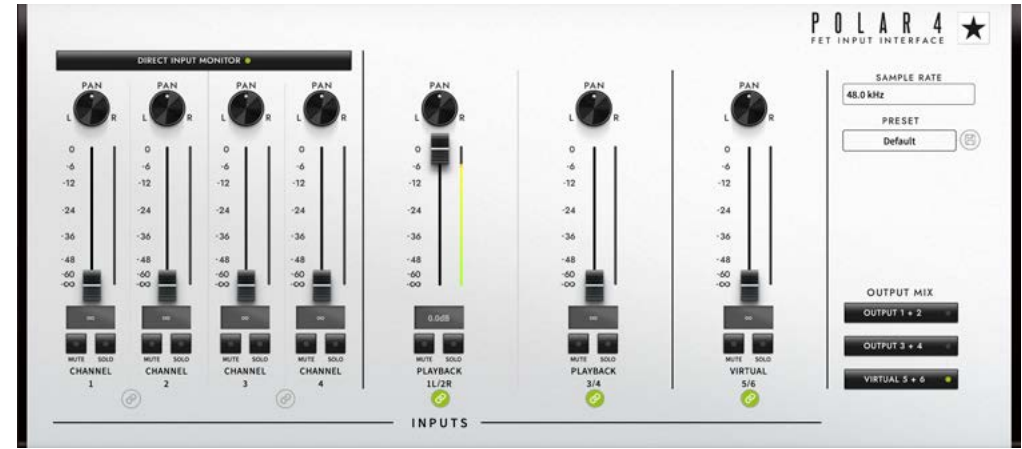
POLAR CONTROL - Examples (cont'd)

This section outlines a few recording setups that will enhance your experience using the Polar Control software.

(3) Loopback

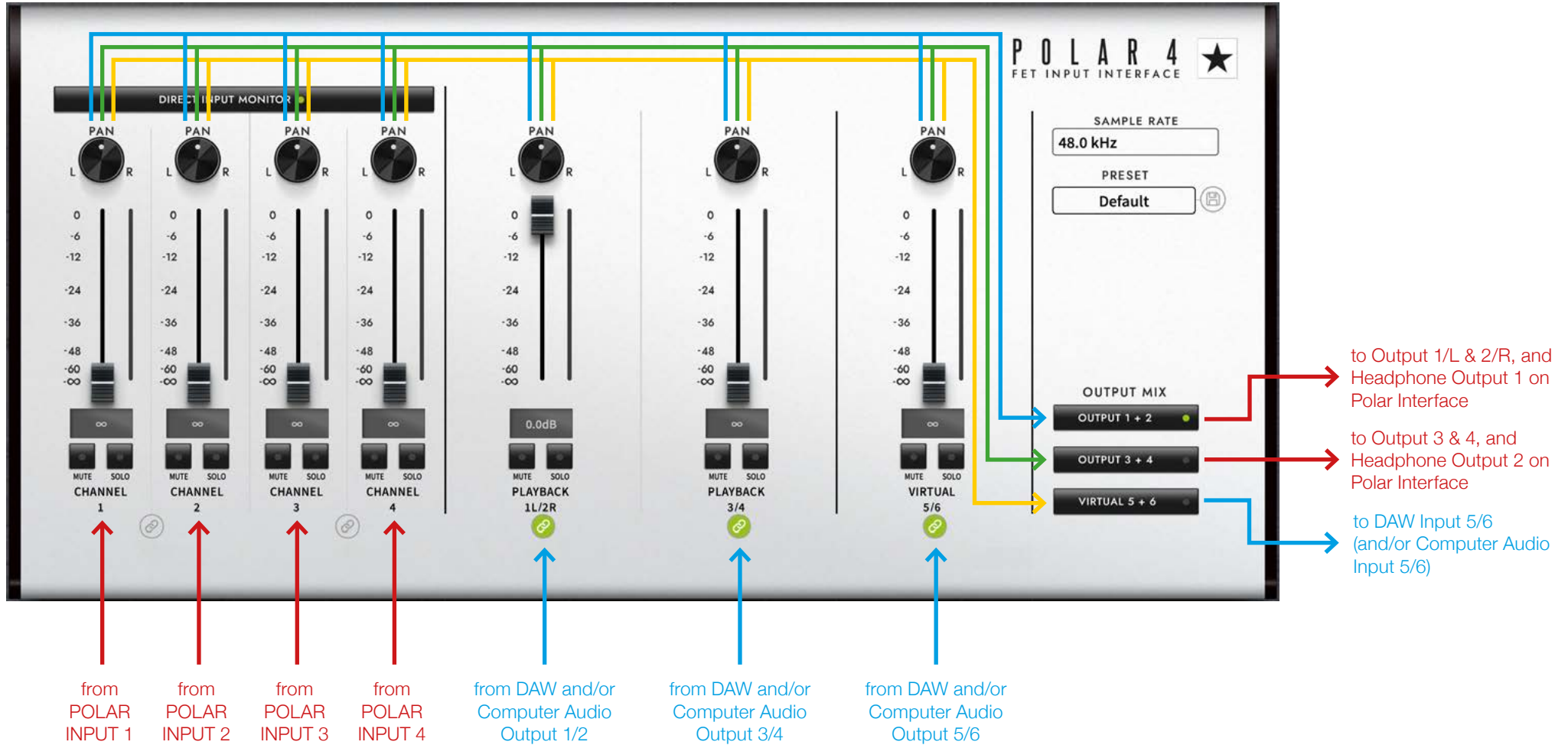
Often called “loopback”, with Polar Control you can route audio from your computer’s output back into your recording software, enabling you to record system audio, streams, or any other audio playing through your computer. This section explains how to set up and use loopback with the Polar Control software.

1. Ensure that Polar is being used for audio output in your computer audio settings. If you have the option, select Output 1/2.
2. In Polar Control software, locate the OUTPUT MIX section.
3. Click on the **Virtual 5+6** button to show the mix for that output (for more info on OUTPUT MIX see page 18).
4. Play audio from your computer. You should see the Level Meter on the PLAYBACK 1L/2R Channel showing signal from your computer audio.
5. Raise the Fader for PLAYBACK 1L/2R to maximum (0.0dB). This effectively routes the audio playing on your computer back into the Polar interface.
6. Stop computer audio playback.
7. In your DAW, create a new stereo track, with inputs set to Input 5/6. Mute this new track in your DAW.
8. Playback your computer audio, you will see the signal appearing in your DAW on the new track.
9. Press the record button in your DAW to capture the loopback audio.



IMPORTANT: When you’re using Loopback, make sure to mute the channel in your DAW so you don’t cause a feedback loop!

POLAR CONTROL - Signal Flow Diagram



iOS

POLAR 4 is compatible with most iOS devices, such as iPhone® and iPad®, providing flexibility for mobile recording and production.

To connect to iOS devices, you'll need some external accessories that are not included with POLAR 4.

Required Accessories:

- Apple® Lightning to USB Camera Adapter or Apple® Lightning to USB 3 Camera Adapter.
- Standard 5V USB power supply

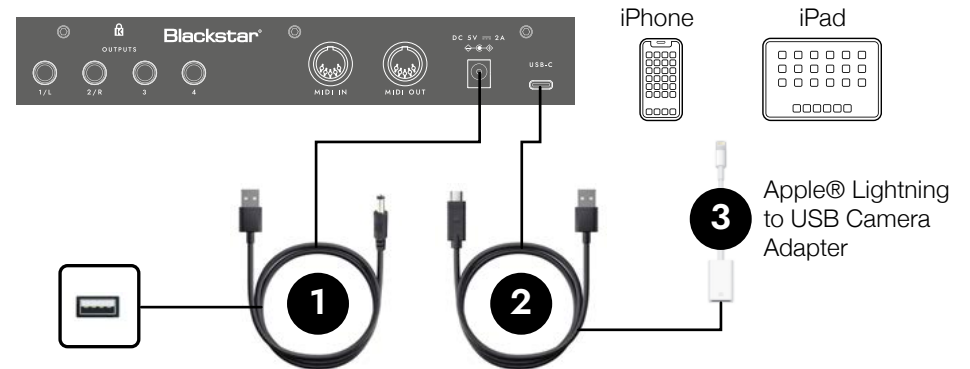
While either Apple® adapter will work, we recommend using the Lightning to USB 3 Camera Adapter, as it allows you to simultaneously charge your iOS device while connected to the POLAR 4 interface.

NOTE: POLAR 4 will not operate without external power. This means that POLAR 4 cannot be powered from your iOS device alone.

3rd party adapters are not supported. Please use genuine Apple® adapters.

TIP: Any standard 5V USB power supply will work, including, for example another phone charger.

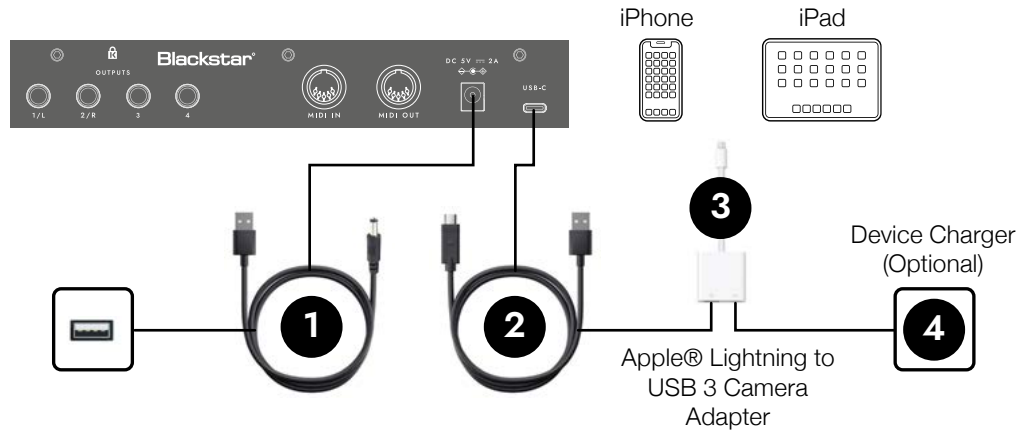
Lightning to USB Camera Adapter



1. Using the included DC to USB-A cable, connect the DC end to the DC 5V port on the rear panel of your POLAR 4. Connect the USB-A end to a **5V USB power supply**.
2. Connect the USB-C end of the **USB-A to USB-C cable** to your POLAR 4. Connect the the USB-A end of the cable to the **Lightning to USB Camera Adapter**.
3. Connect the adapter to your iOS device.

iOS (cont'd)

Lightning to USB 3 Camera Adapter



Operation

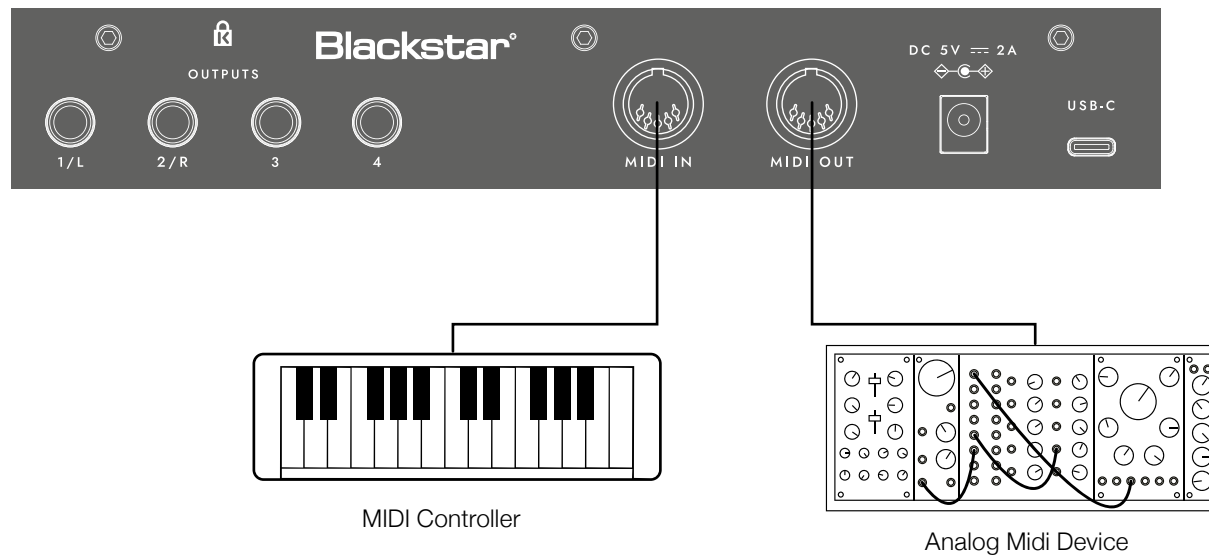
With your POLAR 4 connected to your iOS device, simply open your preferred audio recording app (such as GarageBand®) and start recording and playing back audio.

1. Using the included DC to USB-A cable, connect the DC end to the DC 5V port on the rear panel of your POLAR 4. Connect the USB-A end to a 5V USB power supply.
2. Connect the USB-C end of the USB-C to USB-A cable to your POLAR 4. Connect the the USB-A end of the cable to the Lightning to USB 3 Camera Adapter.
3. Connect the adapter to your iOS device.
4. (Optional) Connect a charger to your iOS device.

MIDI

Using a standard 5-pin MIDI cable, you can enable communication between DAW and MIDI devices and/or controller. The input port receives MIDI data, while the output port sends data.

To use MIDI, select Polar 4 as your MIDI input/output device in your DAW settings or computer settings.



Specifications

Specification	Blackstar POLAR 4
Overview	
Number of Microphone Preamps	4
Phantom Power	Yes, 48V
Instrument Inputs	4
Line Inputs	4
Line Outputs	4
Headphone Outputs	2
Midi	Midi In / Midi Out
Loopback	Yes
Connectivity	USB Type-C
Protocol	USB 2.0
Form Factor	Desktop
Simultaneous I/O	6 x 6 (including Loopback inputs)
A/D Resolution	24-bit/192 kHz
Bus Powered	Yes (tbc)
Supported Sample Rates	44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
Microphone inputs	
Frequency Response	20-20kHz ±0.1dB
Dynamic Range	109dB (A-Weighted)
THD+N	-101dB (-103dB A-Weighted); 0dB Gain, 950mVrms, 20Hz-24kHz BW
Noise EIN	-121dBu (A-Weighted)
Maximum Input Level	2dBu
Gain Range	53dB
Impedance	3.3kΩ
Line inputs	
Frequency Response	20-20kHz ±0.2dB
Dynamic Range	112dB (A-Weighted)
THD+N	-85dB (-85dB A-Weighted); 8dB Gain, 380mVrms, 20Hz-24kHz BW
Maximum Input Level	10dBu
Gain Range	55dB
Impedance	500kΩ

Specifications (cont'd)

Specification	Blackstar POLAR 4
Instrument inputs	
Frequency Response	20-20kHz ± 0.2 dB
Dynamic Range	112dB (A-Weighted)
THD+N	-82dB (-81dB A-Weighted); 3dB Gain, 630mVrms, 20Hz-24kHz BW
Maximum Input Level	10dBu
Gain Range	46dB
Impedance	500k Ω
Line outputs (Balanced)	
Frequency Response	20-20kHz ± 0.15 dB
Dynamic Range	93dB
THD+N	-80dB
Maximum Output Level	12.8dBu
Impedance	1k
Headphone outputs	
Frequency Response	20-20kHz ± 0.15 dB @ 33 Ω / 300 Ω
Dynamic Range	110dB @ 33 Ω 107dB @ 300 Ω
THD+N	-83dB @ 33 Ω -85dB @ 300 Ω
Maximum Output Level	7dBu into 33 Ω 15.2dBu into 300 Ω
Maximum Output Power	85mW into 33 Ω 66mW into 300 Ω
Impedance	10 Ω

Specifications (cont'd)

Specification	Blackstar POLAR 4
Analogue to Digital Converter	
THD+N	-100dB THD+N
Dynamic Range	114dB
Digital to Analogue Converter	
THD+N	-100dB THD+N
Dynamic Range	114dB
Power	
USB	TBC
External (Optional)	4.8W
Accessory	USB A to DC cable, USB A to C cable

Blackstar Amplification Ltd, Beckett House, 14 Billing Road, Northampton, NN1 5AW, UK
For the latest information go to: www.blackstaramps.com

Whilst the information contained herein is correct at the time of publication, due to our policy of constant improvement and development, Blackstar Amplification Ltd reserves the right to alter specifications without prior notice.