# Scarlett 2i2 Studio

# **User Guide**





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## **OVERVIEW**

#### Introduction

Thank you for purchasing the Third Generation Scarlett 2i2 Studio, part of the range of Focusrite professional audio interfaces incorporating high quality Focusrite analogue pre-amplifiers. You now have a simple, compact and complete solution for recording with a microphone or directly from instruments, by routing high quality audio to and from your computer.

In developing the Third Generation series of Scarlett interfaces, we have made further improvements to both performance and features. Audio specifications have been upgraded throughout the unit to give you greater dynamic range and even lower noise and distortion; additionally, the mic preamp now accepts higher input levels.

An important enhancement is the inclusion of Focusrite's AIR function. Individually selectable on each channel, AIR subtly modifies the preamp's frequency response to model the sonic characteristics of our classic transformer-based ISA microphone preamps. When recording with good quality microphones, you will notice an enhanced clarity and definition in the important mid to high frequency range, just where it is most needed for vocals and many acoustic instruments.

We have also enhanced the Direct Monitor feature found on previous Scarletts: now you can monitor as you record in either mono or stereo, with zero latency.

This User Guide provides a detailed explanation of the components to help you achieve a thorough understanding of the product's operational features. We recommend both users new to computer-based recording, as well as more experienced users, take the time to read through the User Guide so you are fully aware of all the possibilities the Scarlett Studio components and accompanying software has to offer. If the main User Guide sections do not provide the information you need, be sure to consult <a href="support.focusrite.com">support.focusrite.com</a>, which contains a comprehensive collection of answers to common technical support queries.

#### **Features**

The Scarlett 2i2 Studio comprises a Scarlett 2i2 audio interface, a Scarlett Studio CM25 MkIII studio quality condenser microphone, a pair of Scarlett Studio HP60 MkIII reference quality headphones and all the necessary software to get you started as quickly as possible.

The Scarlett 2i2 hardware interface is the key component in the Scarlett 2i2 Studio; this provides the means of connecting the CM25 MkIII (or other) microphone, musical instruments or line level audio signals to a computer running macOS or Windows. The signals applied at the 2i2's physical inputs can be routed to your recording software at up to 24-bit, 192 kHz resolution via a USB connection. Similarly, the recording software's monitor or recorded output will appear at the 2i2's physical outputs. (Note - audio recording software is frequently referred to as a "Digital Audio Workstation", or "DAW", and the term "DAW" is used throughout this user guide.)

The physical outputs can be connected to an amplifier and speakers, powered monitors, headphones, analogue mixer or any other analogue audio equipment you wish to use.

#### **Box Contents**

Along with your Scarlett 2i2 you should have:

- Scarlett Studio CM25 MkIII condenser microphone and microphone clip
- Scarlett Studio HP60 MkIII headphones
- XLR microphone cable (3 m)
- USB cable, Type 'A' to Type 'C'
- Getting Started Guide (printed inside the box lid)
- Important Safety Information

## **System requirements**

The easiest way to check your computer's operating system (OS) is compatible with your Scarlett is to use our Help Centre's compatibility articles:

### support.focusrite.com/hc/categories/200693655

As new OS versions become available over time, you can continue to check for further compatibility information by searching our Help Centre at <a href="mailto:support.focusrite.com">support.focusrite.com</a>.

## **GETTING STARTED**

With the Third Generation, Scarlett interfaces introduce a new, faster way of getting up and running, using the Scarlett Quick Start tool. All you need to do is connect your Scarlett 2i2 to your computer. Once connected, you will see the device is recognised by your PC or Mac and the Quick Start tool will guide you through the process from there.

**IMPORTANT**: The Scarlett 2i2 has a single USB 2.0 Type C port (on the rear panel): connect it to your computer using the USB cable provided. Note that Scarlett 2i2 is a USB 2.0 device, and thus the USB connection requires a USB 2.0+ compliant port on your computer.

The Scarlett 2i2 does not need a separate power supply; It gets its power from your computer via the USB connection. However, we recommend when using a laptop, the laptop is powered using its AC adaptor, as otherwise the battery will drain faster than when powering from the laptop alone.

Your computer will initially treat your Scarlett as a Mass Storage Device (MSD), and during its first connection, the Scarlett will be in "Easy Start mode".

#### **Quick Start Tool**

We have tried to make registering your Scarlett 2i2 as simple as possible. The steps are designed to be self explanatory, but we have described each step below, so you can see how they should appear on either a PC or a Mac.

#### Mac users only:

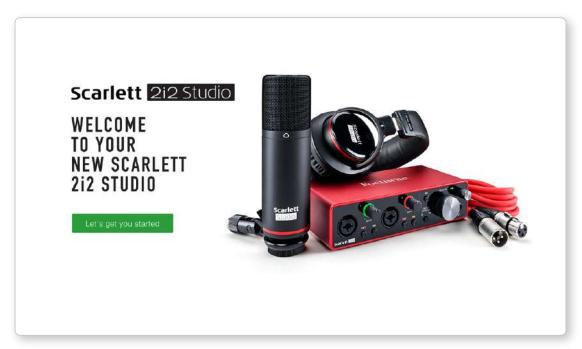
On connecting your Scarlett 2i2 to your Mac, a Scarlett icon will appear on the desktop:



Double-click on the icon to open the Finder window shown below:



Double-click on the "Click Here to Get Started.url" icon. This will redirect you to the Focusrite website, where we recommend you register your device:



Click on "Let's get you started", and you'll see a form which will be partly prefilled for you automatically. When you submit the form, you'll see options to go straight to the downloads to get the software for your Scarlett, or to follow a step by step setup guide based on how you want to use your Scarlett.

Once you have installed the Focusrite Control software to set up and configure your interface, the Scarlett will be switched out of Easy Start mode so it no longer appears as a Mass Storage Device when connected to your computer.

Your OS should switch the computer's default audio inputs and outputs to the Scarlett. To verify this, go to System Preferences > Sound, and ensure the input and output are set to Scarlett 2i2.

For detailed setup options on a Mac, open Applications > Utilities > Audio MIDI Setup.

#### Windows only:

On connecting your Scarlett 2i2 to your PC, a Scarlett icon will appear on the desktop:

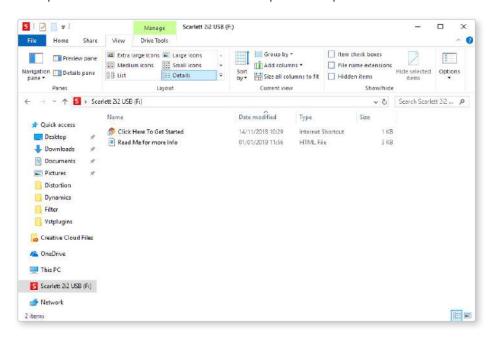


(Note that the drive letter may be something other than F:, depending other devices connected to your PC).

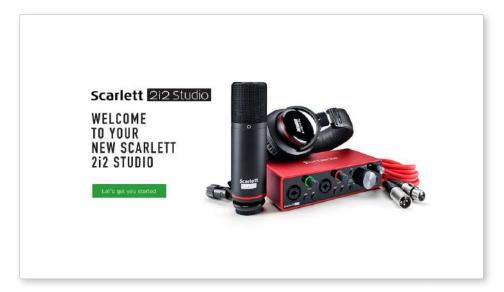
Double-click on the pop-up message to open the dialogue box shown below:



Double-click on "Open folder to view files": this will open an Explorer window:



Double-click "Click Here to Get Started". This will redirect you to the Focusrite website, where we recommend you register your device:



Click on "Let's get you started", and you'll see a form which will be partly prefilled for you automatically. When you submit the form, you'll see options to go straight to the downloads to get the software for your Scarlett, or to follow a step by step setup guide based on how you want to use your Scarlett.

Once you have installed the Focusrite Control software to set up and configure your interface, the Scarlett will be switched out of Easy Start mode so it no longer appears as a Mass Storage Device when connected to your computer.

Your OS should switch the computer's default audio inputs and outputs to be the Scarlett. To verify this, right click on the Sound icon on the taskbar and select **sound Settings**, and set the Scarlett as the Input and Output Device.

#### All users:

Note that a second file - "More Info & FAQs" - is also available during the initial set-up process. This file contains some additional information about the Focusrite Quick Start tool which you may find helpful if you have any issues with the procedure.

Once registered, you will have immediate access to the following resources:

- Focusrite Control (Mac and Windows versions available) see NOTE below
- Multi-language User Guides

You can find the licence codes and links for the optional bundled software in your Focusrite account. To find out what bundled software is included with Scarlett 3rd generation, please visit our website: <a href="mailto:focusrite.com/scarlett">focusrite.com/scarlett</a>

**NOTE**: Installing Focusrite Control will also install the correct driver for your device. Focusrite Control is available to download at any time, even without registering: see "Manual Registration" below.

#### **Manual Registration**

If you decide to register your Scarlet at a later date you can do so at:

#### customer.focusrite.com/register

You will need to enter the Serial Number manually: this number can be found on the base of the interface itself, and also on the barcode label on the side of the box.

We recommend you download and install our Focusrite Control application, as this will disable Easy Start mode and unlock the full potential of the interface. Initially, when in Easy Start mode, the interface will function at sample rates up to 48 kHz. Once Focusrite Control is installed on your computer, you can work at sample rates up to 192 kHz.

If you decide not to download and install Focusrite Control immediately, it can be downloaded at any time from:

#### customer.focusrite.com/support/downloads

To force your Scarlett out of Easy Start mode without first registering it, connect it to your computer and press and hold the **48V** button for five seconds. This will ensure your Scarlett has full functionality. Please bear in mind that should you wish to register your Scarlett after taking this action, you will need to so manually, as explained above.

## **Audio Setup in your DAW**

The Scarlett 2i2 is compatible with any Windows-based DAW that supports ASIO or WDM and any Mac-based DAW that uses Core Audio. After following the Getting Started procedure described above, you can start using the Scarlett 2i2 with the DAW of your choice.

To allow you to get started if you do not already have a DAW application installed on your computer, both Pro Tools | First and Ableton Live Lite are included; these will be available to you once you've registered your Scarlett 2i2. If you need help installing either DAW, please visit our Getting Started pages at <a href="focusrite.com/get-started">focusrite.com/get-started</a>, where Getting Started videos are available.

Operating instructions for Pro Tools | First and Ableton Live Lite are beyond the scope of this User Guide, but both applications include a full set of Help files. Instructions are also available at <u>avid.com</u> and ableton.com respectively.

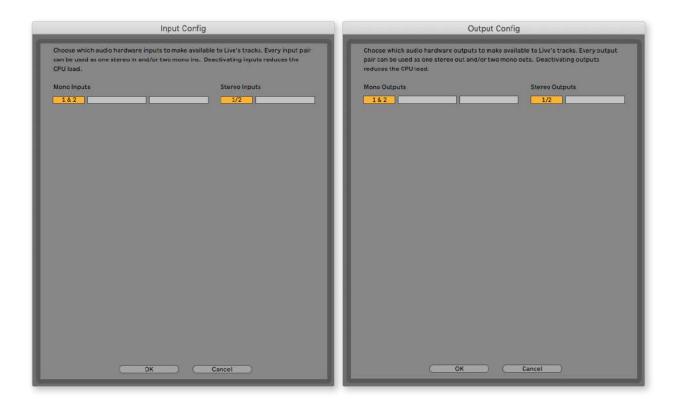
Please note - your DAW may not automatically select the Scarlett 2i2 as its default I/O device. You must manually select Focusrite USB ASIO as the driver on your DAW's Audio Setup\* page. Please refer to your DAW's documentation (or Help files) if you are unsure where to select the ASIO or Core Audio driver. The example below shows the correct configuration in the Ableton Live Lite Preferences panel (Windows version shown).



<sup>\*</sup> Typical names. Terminology may differ between DAWs.

Once the Scarlett 2i2 is set as the preferred Audio Device\* in your DAW, Inputs 1 & 2 and Outputs 1 & 2 will appear in your DAW's Audio I/O preferences. Depending on your DAW, you may need to enable certain inputs or outputs before use.

The two screenshots below show Inputs 1 & 2 and Outputs 1 & 2 enabled Input and Output Config in Ableton Live Lite's Audio Preferences.

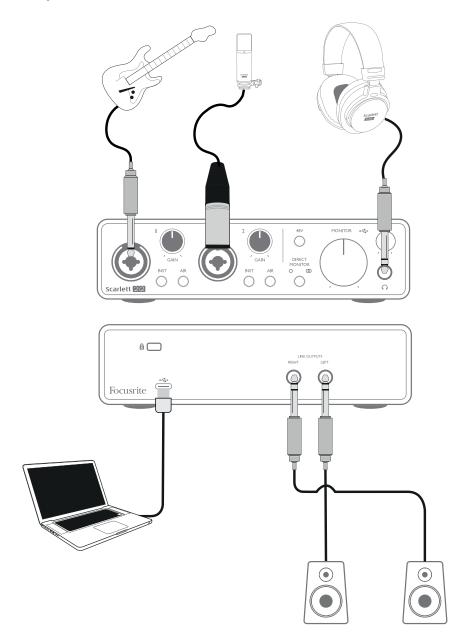


<sup>\*</sup> Typical names. Terminology may differ between DAWs.

## **Examples of Usage**

The Scarlett 2i2 is an excellent choice for several different recording and monitoring applications. Some typical configurations are shown below.

#### Connecting a microphone or instrument



This setup shows the most typical configuration for recording with DAW software on your Mac or PC. You might record guitar through Input 1 and vocals through Input 2 into your DAW, while monitoring the playback from the DAW via headphones (or speakers).

The front panel input sockets are "Combo" type, which accept either an XLR male connector (you will probably have one on the end of your microphone cable) or a  $\frac{1}{4}$ " (6.35 mm) jack plug. If you are using a condenser microphone, you will need to turn on the 48 V phantom power. Phantom power should not be used when other types of microphone – e.g., dynamic or ribbon – are in use.

Note the Scarlett 2i2 has no "Mic/line" switch – the Focusrite preamplifier stage is automatically configured for a microphone when you plug an XLR into the input, and for a line or instrument when you connect a jack plug. Press the **INST** button (illuminates red) if you are connecting a musical instrument (a guitar in the example) via an ordinary 2-pole (TS) guitar jack. When INST mode is not selected, you can connect a line level source such as a keyboard, synthesiser or the balanced output of an external audio mixer via a 3-pole (TRS) jack. Note the Combo connector accepts both TRS and TS types of jack plug.

#### Recording with a microphone

The Scarlett Studio CM25 MkIII microphone supplied with Scarlett Studio is a studio quality condenser mic which is ideal for recording vocals and most acoustic instruments. Connect the CM25 MkIII to one of the Scarlett 2i2's two front panel inputs with the cable supplied.

Condenser microphones (also sometimes referred to as "capacitor" microphones) require a source of DC power to operate. This is almost always supplied by "phantom" powering from the mic preamp to which the mic is connected (early and special-purpose condenser mics might have a separate power supply). For the CM25 MkIII (or any other condenser mic) to work with the Scarlett 2i2, press the 48V button on the front panel (see front panel diagram on page 17 item [3]). We recommend you follow the following sequence:

- Turn the input gain [2] to minimum
- Connect the microphone
- Press the 48V button
- Increase the input gain to the required level

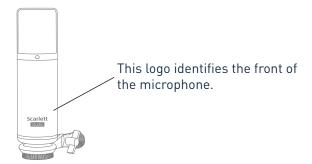
Other types of microphone (including the common dynamic type) do not require phantom power, and may suffer damage if phantom power is applied. Some cheaper condenser microphones are able to operate from a lower phantom power voltage – typically 15 V. You should check the mic spec to see if it is safe to operate it from 48 V; if not, obtain a suitable external phantom power supply.

#### Microphone Dos and Don'ts

A guide to microphone technique is beyond the scope of this User Guide (though many excellent books and online video tutorials on the subject are available), but if you are new to recording with a studio quality microphone, you need to observe a few golden rules.

**DO** use a mic stand. The CM25 MkIII has an industry-standard 5/8" threaded insert which allows it to be mounted on most mic stands. An 3/8" adaptor is included to allow it to be fitted to mic stands that have this thread size. Inexpensive short, long and boom stands are available from music stores.

**DO** observe the microphone's orientation. The CM25 MkIII has a cardioid response pattern; this means it has a "front" and a "back", and if you point it the wrong way round, it will sound odd. The front of the CM25 MkIII can be identified by the CM25 MkIII logo.



**DON'T** ignore the room acoustics. You probably won't have the luxury of a recording studio's perfect acoustics. Be aware of how reverberant the room is. Reverberation is neither good nor bad, but often inappropriate. Some instruments will benefit from being recorded in a reverberant space, others won't. A "dead" acoustic is generally better than a "live" one, because reverberation can be added in the mixing process, but room reverberation on the recording can't be removed.

**DON'T** blow into a microphone to test it! Lightly rub or scratch the grille instead.

**D0** experiment with microphone placement. Remember you will not only be recording the vocal or instrument, but the effect of the microphone position relative to the voice or instrument as well, and this will be affected by the room acoustics. Moving the mic around, and trying recordings at different distances and angles to the source will produce different sounding results, some of which will be better than others.

**DO** use the CM25 MkIII to mic up a guitar amplifier if you want to include the contribution to the sound the amplifier makes. But be aware high sound levels can be produced close to the loudspeaker, and if you need high volume, you may get a better result by moving the mic away from the amplifier. Also, be aware you will get a subtly different sound if you point the mic at the centre of the loudspeaker cone compared to the edge.

**DON'T** forget a microphone is unforgiving – it will not only pick up what you are trying to record, but any other sound source in the room, like a clock, the air con, heating, or a chair creaking. You know how you take those holiday photos of a great bit of scenery and it's only when you look at the pictures later you see the power cables right across the view? It's the same with recording. You might not notice extraneous sounds at the time, but the mic will and you'll hear them on the recording. To remove any unwanted low frequency rumble, it is advisable the High Pass Filter (HPF) on the mic's DAW channel is enabled.

#### **Using Direct Monitoring**

You will frequently hear the term "latency" used in connection with digital audio systems. In the case of the simple DAW recording application described above, latency will be the time it takes for your input signals to pass through your computer and audio software. Latency can be a problem for a performer who wishes to record while monitoring their input signals.

The Scarlett 2i2 is fitted with a "Direct Monitoring" option, which overcomes this problem. Setting the front panel **DIRECT MONITOR** control to either MONO or STEREO will route your input signals directly to the Scarlett 2i2's headphone and main monitor outputs. This enables you to hear yourself with zero latency – i.e., in "real time" – along with the computer playback. The input signals to your computer are not affected in any way by this setting.

In MONO mode, Inputs 1 and 2 are routed equally to the two outputs (both the rear panel outputs and headphones) so they both appear in the centre of the stereo image. This is useful when you are recording two separate instruments or an instrument and a vocal, where there is no need for the two signals to be specifically located in the stereo image. Further examples would be an acoustic and an electric guitar, a bass which is both mic'd and DI'd or two separate mics differently positioned on a guitar amplifier.

In STEREO mode, Input 1 is routed to the left output channel and Input 2 to the right. Use this mode if you are recording something inherently stereo in nature. Monitoring in stereo will give you a more accurate impression of the sound stage. Examples are any situation where two microphones are being used to deliberately capture a stereo image such as a pair of overhead drum mics, a single stereo mic recording an orchestra or other ensemble, or the stereo outputs of an electronic source such as a piano, synthesiser or FX unit.

When using Direct Monitoring, ensure your DAW software is not set to route its input (what you are currently recording) to its output. If it is, you will hear yourself "twice", with one signal audibly delayed as an echo.

Monitoring with **DIRECT MONITOR** set to OFF can be useful when using an FX plug-in to your DAW to create a stereo effect which contributes to the live performance. In this way, you will be able to hear exactly what is being recorded, complete with the FX. However, some latency may result, the amount depending on the DAW's buffer size and processing power of the computer.

#### **Connecting Scarlett 2i2 to headphones**

The Scarlett 2i2 Studio package includes a pair of high quality HP60 MkIII headphones. They are lightweight and durable, and should prove comfortable to wear for extended periods. The headband is adjustable.

The HP60 MkIII headphones have a low noise, oxygen-free copper cable, fitted with a  $\frac{1}{4}$ " (6.35 mm) 3-pole (TRS) jack plug. This should be connected to the socket at the right hand side of the Scarlett 2i2 front panel (indicated by a  $\bigcirc$  symbol). The Scarlett 2i2's headphone output is, of course, suitable for use with other models of headphones: if they terminate in a 3.5 mm TRS "mini jack", use a TRS  $\frac{1}{4}$ "-to-3.5 mm jack adaptor

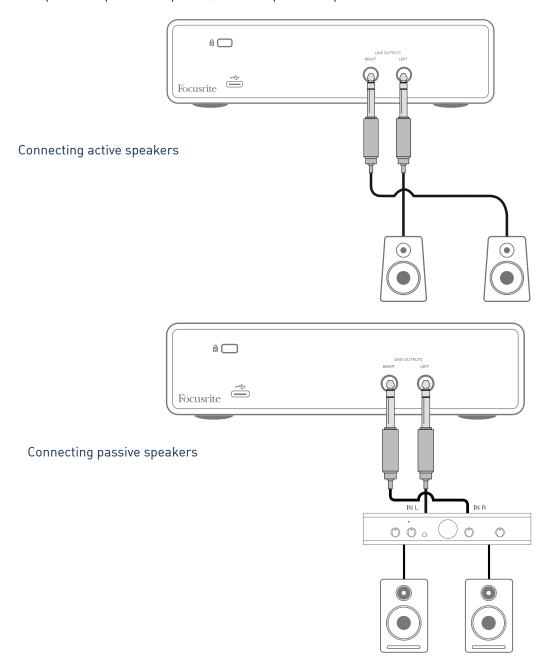
The volume in the headphones can be adjusted by the rotary control above the socket.



Please be aware headphones are capable of generating high sound pressure levels at the ear; prolonged exposure to high sound levels may impair your hearing. Never turn headphones volume up any further than necessary.

#### **Connecting Scarlett 2i2 to loudspeakers**

You can use the ¼" jack outputs on the rear panel to connect monitor speakers. Active monitors have internal amplifiers with a volume control, and can be connected directly. Passive loudspeakers require a separate amplifier; the rear panel outputs should be connected to the amplifier's inputs.



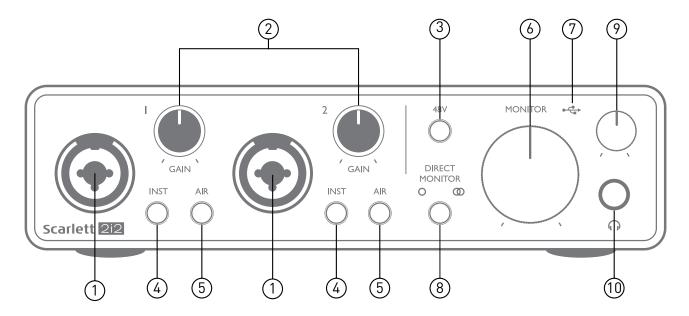
The line outputs are 3-pole (TRS) ¼" (6.35 mm) jack sockets, and are electronically balanced. Typical consumer (Hi-Fi) amplifiers and small powered monitors will have unbalanced inputs, either on phono (RCA) sockets, or via a 3.5 mm 3-pole jack plug intended for direct connection to a computer. In either case, use a suitable connecting cable with jack plugs at one end.

Professional power amplifiers will generally have balanced inputs; we recommend using balanced cables to connect these to the outputs of the Scarlett 2i2.

**NOTE:** You run the risk of creating an audio feedback loop if loudspeakers are active when you are monitoring a microphone! We recommend you always turn off (or turn down) monitoring loudspeakers while recording, and use headphones when overdubbing.

## HARDWARE FEATURES

#### **Front Panel**

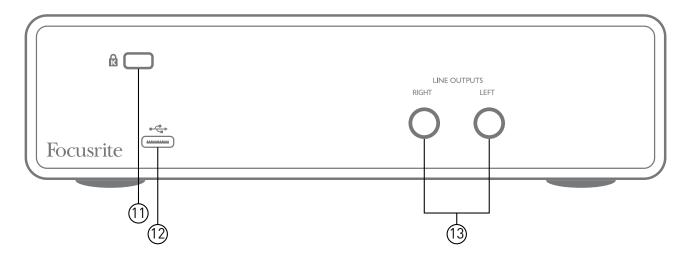


The Front Panel includes the input connectors for Mic, Line and Instrument signals, as well as the input gain and monitoring controls.

- 1. Inputs 1 & 2 "Combo" input sockets connect microphones, instruments (e.g., guitar), or line level signals here. Combo sockets accept both XLR and ¼" (6.35 mm) jacks. Microphones connect using XLR plugs: instruments and line level signals should be connected via ¼" (6.35 mm) jack plugs of either TS or TRS type. The preamp gain is appropriate for microphones when an XLR plug is inserted, and for higher level signals when a jack plug is inserted. Do not connect anything other than a microphone e.g., the output of a sound module or FX unit via an XLR plug, as the signal level will overload the preamp, resulting in distortion; , if phantom power is enabled, you may damage your equipment.
- 2. **GAIN 1** and **GAIN 2** adjusts the preamp gain for signals on inputs 1 and 2 respectively. The gain controls have tri-colour LED 'rings' to confirm signal level: green indicates an input level of at least -24 dBFS (i.e., 'signal present'), the ring turns amber at -6 dBFS to indicate the signal is close to clipping, and finally to red at 0 dBFS (digital clipping).
- 3. **48V** phantom power switch for mic inputs enables 48 V phantom power at the XLR contacts of both Combo connectors.
- 4. **INST** Line/Instrument level switches for each input which alter gain and input impedance to suit either instrument or line level signals. 'INST' illuminates red when Instrument mode is selected. You can also enable INST from Focusrite Control.
- 5. **AIR** two switches enabling AIR mode for each input. AIR modifies the frequency response of the input stage to model the classic, transformer-based Focusrite ISA microphone preamps. 'AIR' illuminates yellow when the mode is selected. Note that AIR may also be selected from Focusrite Control.
- 6. **MONITOR** main monitor output level control sets the output level at the main (rear panel) outputs **LEFT** and **RIGHT**.

- 7. USB LED a green LED illuminates when the Scarlett is connected and recognised by your computer.
- 8. **DIRECT MONITOR** this switch routes the inputs directly to the outputs with three different settings: OFF, MONO and STEREO. When set to OFF, monitoring of input sources is via the DAW; in MONO or STEREO, monitoring is taken directly from the preamp inputs so is free of any latency. The symbols O or illuminate green to indicate selection of mono and stereo modes respectively. When Direct Monitor is on, the signal is combined with software playback.
- 9. Headphone level adjusts the output level at the front panel stereo headphone output.
- 10. Headphone output 1/4" TRS output jack. If your headphones have a 1/4" TRS jack plug, connect them directly; if they have a 3.5 mm TRS "mini jack", use a TRS 1/4"-to-3.5 mm jack adaptor. Note that it is likely headphones fitted with 4-pole TRRS plugs will not operate correctly.

#### **Back Panel**



- 11. **K** (Kensington security lock) secure your Scarlett 2i2 to a suitable structure if desired.
- 12. USB 2.0 port Type C connector; connect to your computer with cable supplied.
- 13. **LINE OUTPUTS**: **LEFT** and **RIGHT** 2 x  $\frac{1}{4}$ " (6.35 mm) TRS jack sockets; +10 dBu output level (variable), electronically balanced. Either  $\frac{1}{4}$ " TRS (balanced connection) or TS (unbalanced connection) jack plugs can be used.

# **SPECIFICATIONS**

# **Performance Specifications**

NOTE: All performance figures measured in accordance with the provisions of AES17, as applicable.

THD+N Outputs (1-2)  20 Hz/22 kHz bandpass filter)  430 Ω  Headphone Outputs  Dynamic Range  104 dB (A-weighted)  7 dBu  THD+N  THD+N  Co.002% (maximum level, -1 dBFS input, 1 kHz, with 20 Hz/22 kHz bandpass filter)	11012:7ttt periorinance ngares	Theasarea in accordance with the provisions of ALSTY, as applicable			
Microphone Inputs	Clock Source	Internal			
Dynamic Range	Supported sample rates	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz			
THD+N	Microphone Inputs				
Co.0012% (minimum gain, -1 dBFS input with 22 Hz/22 kHz bandpass fitter)	Dynamic Range	111 dB (A-weighted)			
Noise EIN  -128 dB (A-weighted)  Maximum Input Level +9 dBu at minimum gain Gain Range 56 dB Input impedance 110.5 dB (A-weighted)  Frequency Response 20 Hz to 20 kHz ±0.1 dB  THD+N  -22 dBu at minimum gain, -1 dBFS input with 22 Hz/22 kHz bandpass filter)  Maximum Input Level -22 dBu at minimum gain Gain Range 56 dB Input impedance 60 kΩ  Instrument Inputs  Dynamic Range 110 dB (A-weighted) Frequency Response 20 Hz to 20 kHz ±0.1 dB	Frequency Response	20 Hz to 20 kHz ±0.1 dB			
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Gain Range56 dBInput impedance3 kΩLine InputsTHD+NTHD+N40.002% (minimum gain, -1 dBFS input with 22 Hz/22 kHz bandpass filter)Maximum Input Level+22 dBu at minimum gainGain Range56 dBInput impedance60 kΩInstrument Inputs110 dB (A-weighted)Trequency Response20 Hz to 20 kHz ±0.1 dBTHD+N<0.03% (minimum gain, -1 dBFS input with 22 Hz/22 kHz bandpass filter)	Noise EIN	-128 dB (A-weighted)			
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Instrument InputsDynamic Range110 dB (A-weighted)Frequency Response20 Hz to 20 kHz ±0.1 dBTHD+N<0.03% (minimum gain, -1 dBFS input with 22 Hz/22 kHz bandpass filter)	Gain Range	56 dB			
Dynamic Range110 dB (A-weighted)Frequency Response20 Hz to 20 kHz ±0.1 dBTHD+N<0.03% (minimum gain, -1 dBFS input with 22 Hz/22 kHz bandpass filter)	Input impedance	60 kΩ			
Frequency Response20 Hz to 20 kHz ±0.1 dBTHD+N<0.03% (minimum gain, -1 dBFS input with 22 Hz/22 kHz bandpass filter)	Instrument Inputs				
THD+N	Dynamic Range	110 dB (A-weighted)			
Maximum Input Level +12.5 dBu at minimum gain  Gain Range 56 dB  Input impedance 1.5 MΩ  Line Outputs 1 & 2 (balanced)  Dynamic Range 108.5 dB (A-weighted)  Maximum Output Level +15.5 dBu; balanced outputs  THD+N Outputs (1-2) <0.002% (maximum level, -1 dBFS input 1 kHz with 20 Hz/22 kHz bandpass filter)  Output impedance 430 Ω  Headphone Outputs  Dynamic Range 104 dB (A-weighted)  Maximum Output Level 7 dBu  THD+N	Frequency Response	20 Hz to 20 kHz ±0.1 dB			
Gain Range56 dBInput impedance1.5 MΩLine Outputs 1 & 2 (balanced)Dynamic Range108.5 dB (A-weighted)Maximum Output Level+15.5 dBu; balanced outputsTHD+N Outputs (1-2)<0.002% (maximum level, -1 dBFS input 1 kHz with 20 Hz/22 kHz bandpass filter)Output impedance430 ΩHeadphone OutputsDynamic Range104 dB (A-weighted)Maximum Output Level7 dBuTHD+N<0.002% (maximum level, -1 dBFS input, 1 kHz, with 20 Hz/22 kHz bandpass filter)	THD+N	· ·			
Input impedance1.5 MΩLine Outputs 1 & 2 (balanced)Dynamic Range108.5 dB (A-weighted)Maximum Output Level+15.5 dBu; balanced outputsTHD+N Outputs (1-2)<0.002% (maximum level, -1 dBFS input 1 kHz with 20 Hz/22 kHz bandpass filter)Output impedance430 ΩHeadphone OutputsDynamic Range104 dB (A-weighted)Maximum Output Level7 dBuTHD+N<0.002% (maximum level, -1 dBFS input, 1 kHz, with 20 Hz/22 kHz bandpass filter)	Maximum Input Level	+12.5 dBu at minimum gain			
Line Outputs 1 & 2 (balanced)Dynamic Range108.5 dB (A-weighted)Maximum Output Level+15.5 dBu; balanced outputsTHD+N Outputs (1-2)<0.002% (maximum level, -1 dBFS input 1 kHz with 20 Hz/22 kHz bandpass filter)	Gain Range	56 dB			
Dynamic Range108.5 dB (A-weighted)Maximum Output Level+15.5 dBu; balanced outputsTHD+N Outputs (1-2)<0.002% (maximum level, -1 dBFS input 1 kHz with 20 Hz/22 kHz bandpass filter)	Input impedance	1.5 ΜΩ			
Maximum Output Level+15.5 dBu; balanced outputsTHD+N Outputs (1-2)<0.002% (maximum level, -1 dBFS input 1 kHz with 20 Hz/22 kHz bandpass filter)	Line Outputs 1 & 2 (balanced)				
THD+N Outputs (1-2)	Dynamic Range	108.5 dB (A-weighted)			
THD+N Outputs (1-2)20 Hz/22 kHz bandpass filter)Output impedance430 ΩHeadphone OutputsDynamic Range104 dB (A-weighted)Maximum Output Level7 dBuTHD+N <a href="2">&lt; 0.002% (maximum level, -1 dBFS input, 1 kHz, with 20 Hz/22 kHz bandpass filter)</a>	Maximum Output Level	+15.5 dBu; balanced outputs			
Headphone OutputsDynamic Range104 dB (A-weighted)Maximum Output Level7 dBuTHD+N<0.002% (maximum level, -1 dBFS input, 1 kHz, with 20 Hz/22 kHz bandpass filter)	THD+N Outputs (1-2)				
Dynamic Range 104 dB (A-weighted)  Maximum Output Level 7 dBu  THD+N	Output impedance	430 Ω			
Maximum Output Level 7 dBu  THD+N	Headphone Outputs				
THD+N <a href="https://doi.org/10.002%">&lt;0.002% (maximum level, -1 dBFS input, 1 kHz, with 20 Hz/22 kHz bandpass filter)</a>	Dynamic Range	104 dB (A-weighted)			
kHz bandpass filter)	Maximum Output Level	7 dBu			
Output impedance $<1 \Omega$	THD+N	<0.002% (maximum level, -1 dBFS input, 1 kHz, with 20 Hz/22 kHz bandpass filter)			
	Output impedance	<1 Ω			

# **Physical and Electrical Characteristics**

Analogue Inputs			
Connectors	XLR "Combo" type: Mic/Line/Inst (Inputs 1-2) on front panel		
Mic/Line switching	Automatic		
Line/Instrument switching	2 x front panel switches or via Focusrite Control		
Phantom power	Shared 48 V phantom power switch for inputs 1 & 2 (XLR connections only)		
AIR function	Front panel switch or via Focusrite Control		
Analogue Outputs			
Balanced outputs	2 x ¼" TRS jacks on rear panel		
Stereo headphone output	1/4" TRS jack on front panel		
Main output level control	On front panel		
Headphones level control			
Other I/O			
USB	1 x USB 2.0 Type C connector		
Front Panel Indicators			
USB power	Green LED		
Gain Halos	Tri-colour LED rings ( with <b>GAIN</b> controls)		
Phantom power	Red LED		
Instrument mode	2 x red LEDs		
AIR mode	2 x amber LEDs		
Direct Monitor mode	2 x green LEDs		
Weight and Dimensions			
WxHxD	175 mm x 47.5 mm x 99 mm 6.89 in x 1.87 in x 3.89 in		
Weight	470 g 1.04 lb		

# **Scarlett CM25 MkIII Microphone Specifications**

Capsule			
Element	Electret Condenser		
Diameter	20 mm		
Polar Pattern	Unidirectional (cardioid)		
Performance and Electrical characteristics			
Sensitivity	-36 dB ±2 dB (0 dB = 1 V/Pa at 1 kHz)		
Frequency Response	20 Hz to 20 kHz		
Impedance	200 Ω ±30% (at 1 kHz)		
Recommended Load Impedance	>10 kΩ		
Equivalent Noise Level	16 dBA (A-weighted IEC651)		
S/N Ratio	74 dB		
Power Requirement	48 V phantom supply		
Current	3 mA		
Performance and Electrical characteristics			
Mounting	Standard 5/8" female; 3/8" adaptor supplied		
Net Weight	496 g, inc. DCZ-16 mic clip		
Body Dimensions	49.5 mm (dia.) x 158 mm (length) 1.95 in (dia.) x 6.22 in (length)		

# Scarlett HP60 MkIII Headphones Specifications

Туре	Closed-back
Drive diameter	50 mm
Impedance	32 Ω
Sensitivity	98 dB ±3 dB
Frequency response	20 Hz to 20 kHz
Max. power rating	1.2 W
Cable length	3 m (approx.)
Connectors	3.5 mm stereo jack, 6.35 mm screw-on adaptor
Weight	288 g (inc. cable)

## **TROUBLESHOOTING**

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

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