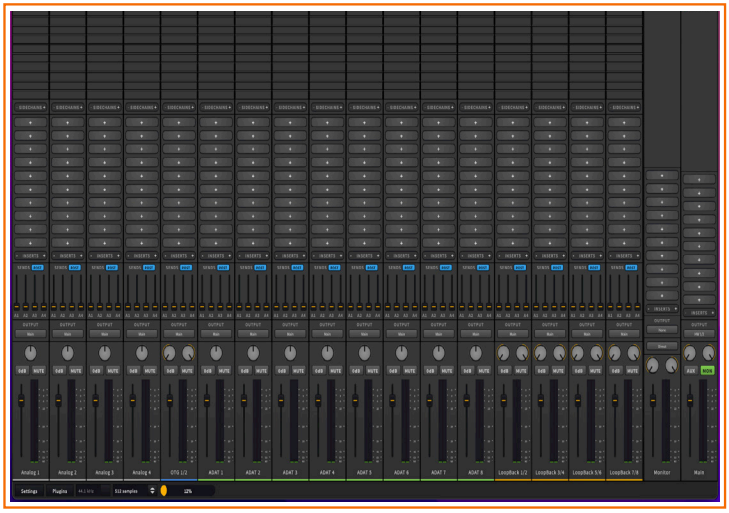
iO Pro

Easy to use. Hard to beat.
Software at the cutting edge that's simple to use!



Presenting the innovative, user-friendly iCON iO Pro software from iCON Pro Audio. iCON iO Pro provides the user with an extensive catalog of tools to create, produce, perform and broadcast, including extensive routing possibilities, the ability to use plugins in real time, and virtual instrument routing.

2nd Edition (2.05)

Contents

iCON iO Pro: An Introduction

Welcome to the manual for ICON iO Pro, iCON Pro Audio's innovative and user-friendly software for stage, studio and streaming.

The iCON iO Pro software allows the user to;

- Route any audio input to any output on your computer,
- Add plugins to individual channels or globally via two Aux channels to enhance and shape your sound,
- Easily change settings such as sample rates and buffer sizes from the front panel as well as monitor CPU usage.

iCON iO Pro can facilitate complex setups or....it can be a simple as you want it to be.

You can simply download the driver for your audio interface from iO Pro's interface and close down the software, (there is no need to have it running concurrently with your hardware) or use it to its fullest potential, utilising the Stinger, for example, to launch short samples when podcasting or Patch for more complex, in-depth plugin chains.

In its default setup state, iCON iO Pro will be able to enable recording, monitoring and playback in your studio DAW setup. For more particular tasks such as broadcasting to social media and using microphone/live instrument inputs using plugins, ICON iO Pro has you covered.

iCON iO Pro is based on a sophisticated simplicity with 'user-friendliness' a by-word in its inception and build. It's highly useable, adaptable and just.....easy to use.

This manual covers the functionality of iO Pro in some depth and should also give you a few ideas in the 'Scenarios' section as to what is achievable. As always, though, experimentation is the key to seeing how the software will work best for

Confused by any of the terms referred to in this manual?

Try the glossary (appendix 5).

Depending on the nature of your audio interface, iCON iO Pro is not necessarily a requirement for users who simply wish to use their audio interface with their DAW on a day-to-day basis, (the exception being those devices that are entirely software controlled i.e. the U44). Equally, it is not required to 'run your audio device'. However, it *is* necessary for Windows users to install ASIO drivers via iO Pro during the initial setup. Subsequent, updated versions of the required ASIO driver may also be downloaded via iO Pro in the future.

In addition to the iO Pro software allowing the user to download and install the latest driver for the given device, it also provides a range of routing opportunities and is especially useful outside of a DAW in a live or semi-live context, for example. iCON iO Pro can be used entirely independently of a DAW utilising available plugins such as reverb, EQ and compression.

Please make sure you have registered your audio device. This will enable you to download the iO Pro software from your 'User Center', as well as relevant manuals for your products and free software by iZotope, Harrison, Tracktion, DoTec, Kilohearts and Bitwig.

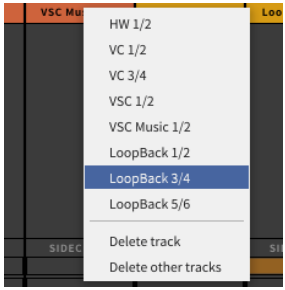
You can register by visiting http:// iconproaudio.com/registration or using the QR code below.

Details on how to register for your 'User Center' are contained within your product manual (usually on page 5).

Overview

The iO Pro graphic user interface (GUI) is presented as a 'mixing desk', such as many musicians, producers and mixers are familiar with. The layout is essentially the same for both Mac and Windows OS. The fundamental difference is that the Windows version of iO Pro has 'virtual channels' and the Mac OS version does not. Please see the section '*Virtual Channels & Mac and Win versions of iCON iO Pro*' for more information on this.

iCON iO Pro is essentially presented in the same way for each device (current iCON Pro Audio devices will be able to use this software). The only difference is the amount of inputs and outputs that will be displayed, which will be reflected automatically in the GUI. For interfaces not equipped with ADAT, for example, this will obviously not be a feature of the iO Pro GUI for that particular interface. Inputs are color-coded for easy identification. The inputs can be changed by right clicking the input source box. The chosen track or all tracks except the chosen track can also be deleted via this drop down menu.



The Default Setup

When you first load iCON iO Pro, the default setting will satisfy most general usages. It should be noted that, although you can load drivers and update firmware via this intuitive and simple to use software, it is not in itself a driver. iCON iO Pro is much more than that!

It offers you the opportunity of using your iCON Pro Audio interface separately from a DAW. It can route any input to any output, allows the user to chain plugins and use virtual instruments as well as launch samples for podcasts and broadcasts.

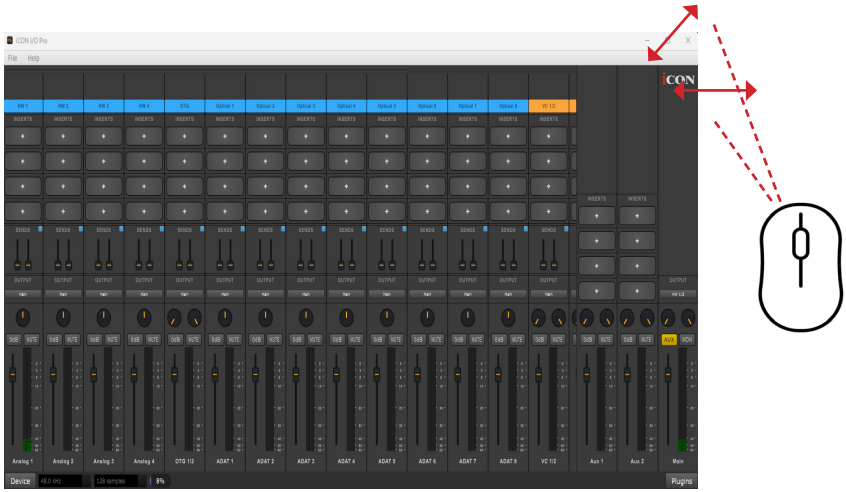
In its default state, iCON iO Pro can be used straight out of the box (or download file!) for DAW recording, playback and monitoring purposes. It is very simple to set up and the user should be up and running within minutes of unzipping!

Its intuitive and user friendly GUI makes it very easy to understand. Change your sample rate, buffer size and monitor your CPU usage from the front panel, (you will of course still be able to do this within the DAW using the iO Pro control panel in the DAW's settings).

For many users, this may be their only requirement in their daily workflow. However, the software offers an array of optional extras. Please read on, to find out more!

Resizing the Screen

Users are able to resize the iCON iO Pro screen.

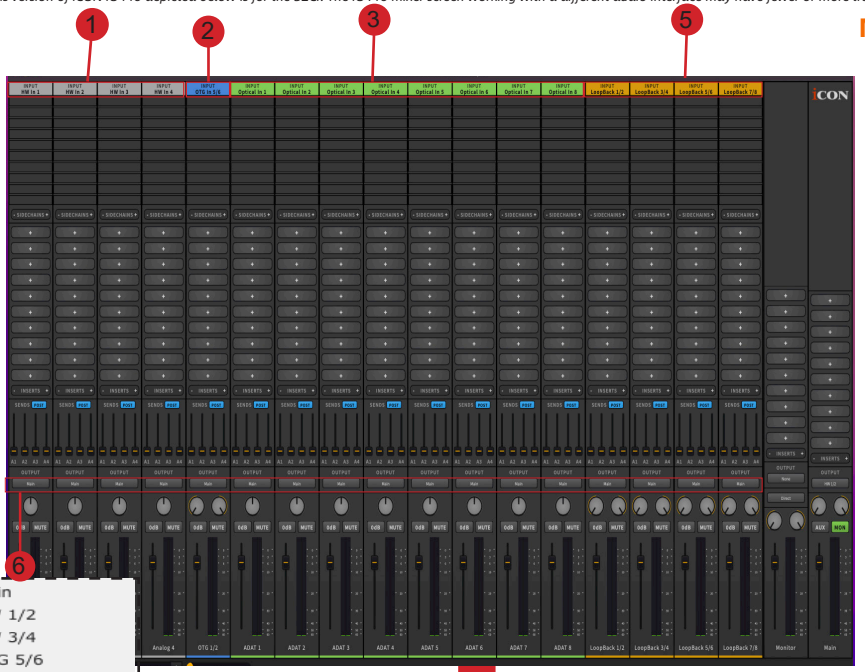


Simply click the side of the mixer view window to drag left and right to resize according to taste.

A Tour of iCON iO Pro

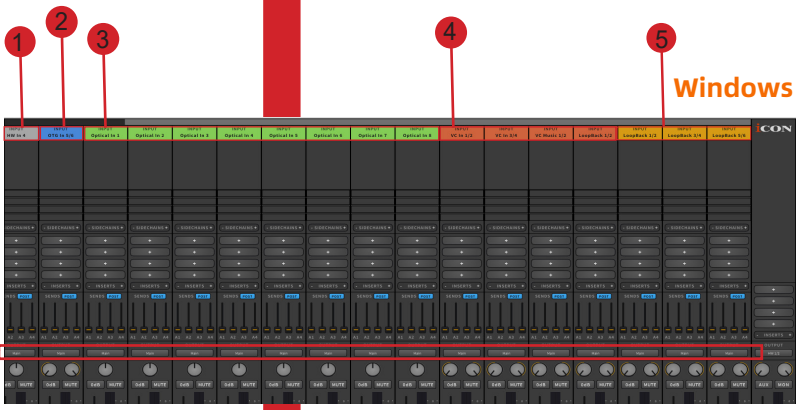
This version of iCON iO Pro depicted below is for the 32Ci. The iO Pro mixer screen working with a different audio interface may have fewer or more tracks.

Mac



- ✓Main
- HW 1/2
- HW 3/4
- OTG 5/6
- Optical 1/2
- Optical 3/4
- Optical 5/6
- Optical 7/8
- LoopBack 1/2
- LoopBack 3/4
- LoopBack 5/6

Windows



- ✓Main
- HW 1/2
- HW 3/4
- OTG 5/6
- Optical 1/2
- Optical 3/4
- Optical 5/6
- Optical 7/8
- VC 1/2
- VC 3/4
- VSC 1/2
- VSC Music 1/2
- LoopBack 1/2
- LoopBack 3/4
- LoopBack 5/6

Note: Windows OS has visible virtual channels (4) - *see below*

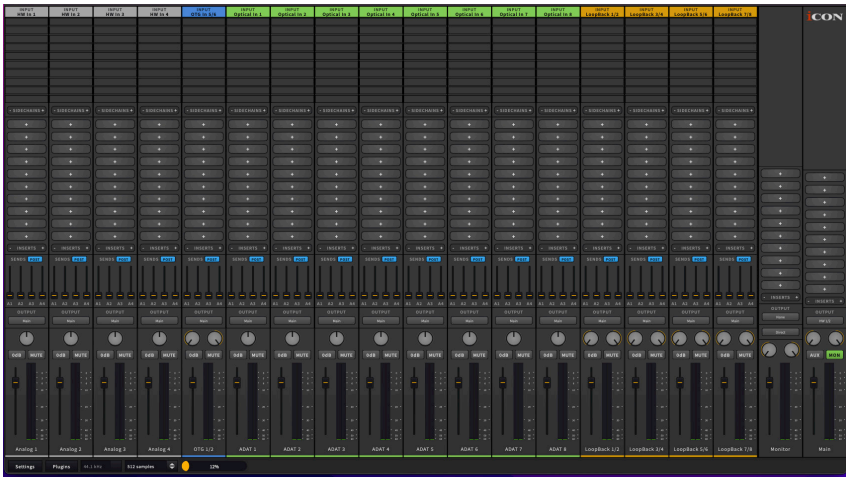
Virtual channels do <u>not</u> feature in the Mac version of iCON iO Pro. The reason why they exist in Windows and not Mac is because the Windows WDM driver is used for daily software such as system audio and media players and the ASIO driver is used in DAWs and applications like iCON iO Pro. In order to convert WDM to ASIO (and therefore, the ability to use it in ICON iO Pro), a kind of 'bridge' is required. This is why virtual channels exist in the Windows version of iCON iO Pro as they fulfil this function. The amount of virtual channels (including loopback) is dependent on the audio device used in Windows.

The Mac OS has one unified driver, so virtual channels are not used, as no 'bridging process' is required. It does have 'loopback channels' (the amount of loopback channels is fixed at 8 with modern macs, no matter the audio device you are using). See section 5.

Larger screenshots of iO Pro (for the 32Ci audio interface)

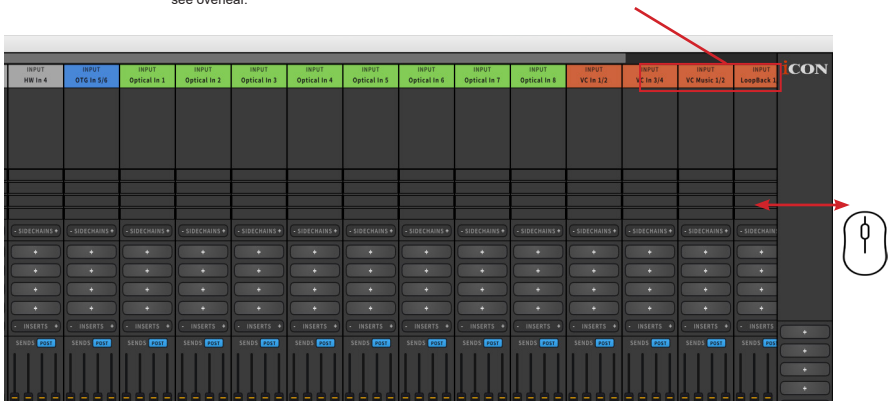
Other versions of iO Pro may have fewer or more tracks.

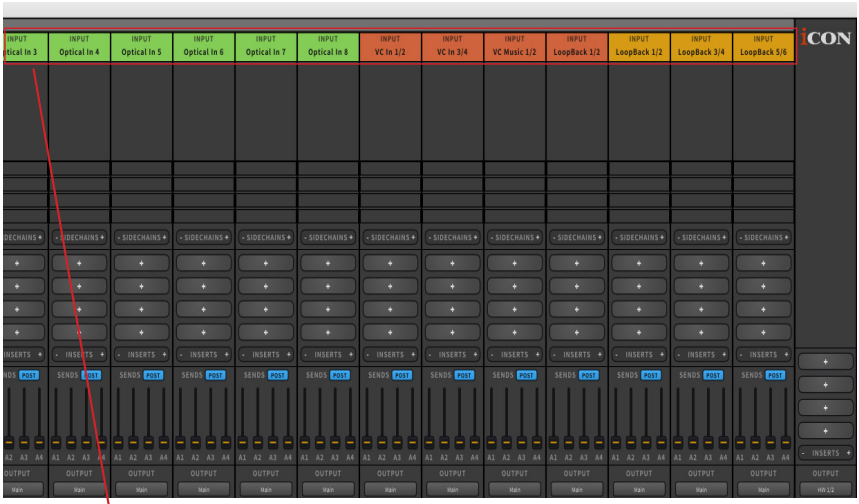
Mac version:



Win version:

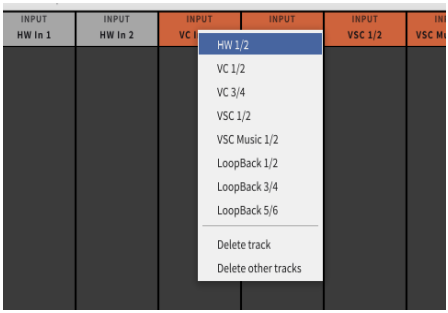
Due to the large amount of tracks for some devices (here. this is demonstrated by the 32Ci version of iO Pro), some scrolling may be required to see the full compliment of channels. Please see overleaf.





As previously explained, the full compliment of tracks may not appear in the software at first glance and the user may need to scroll to view them all. This may be the case especially with Windows versions of iO Pro for iCON audio interfaces with a larger compliment of inputs and outputs, (i.e. ADAT) as the software will also feature additional virtual channels. ***Please note that ADAT device/iO Pro (and/or DAW if relevant) sample rates must match in order to 'sync' ADAT channels.***

The channel 'type' may be changed by right-clicking in the color-highlighted title box i.e. 'OTG In' (depending on your device's inputs). Tracks may also be deleted by selecting right-click. You may also select the chosen track to be the only track <u>not</u> to be deleted ('Delete other tracks').



1. **HW In (Hardware Channel In)**
   This means the hardware input channels including microphones and/or internal input channels. Most typically this will refer to an XLR or 1/4 inch (6.35mm) jack input. The amount of channels of HW IN will depend on your audio device. The iCON Duo 22 Dyna, for example has two, whereas the iCON /Harrison 32Ci has four.

2. **OTG In**
   This shows the hardware OTG ("on-the-go") input. If your device has an 'OTG' port, please refer to the 'OTG' section of your manual for hardware instructions. If your device does not have an 'OTG' port, this channel will not appear.

3. **Optical In**
   This refers to external optical inputs such as ADAT. The amount of available channels will be reflected automatically in the GUI of iCON iO Pro. In ADAT's case, eight optical channels are available. If your device does not have optical ports, (i.e. ADAT, S/PDIF) these channels will not appear.

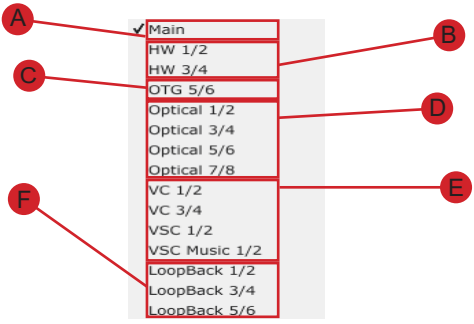
4. **Virtual Channels In (VC In, VSC In, VSC Music In) - Windows only**
   'Virtual' channels are used in Windows for the purposes of the iCON iO Pro software. As explained in the 'Virtual Channels & Mac and Win versions of iCON iO Pro' section, Windows must convert the driver (known as WDM) that is used to power daily software such as media player to ASIO, (the driver that is used to power pro audio software like iO Pro or your DAW). In order for media player to play via iCON iO Pro, (i.e. for use as a backing track using the software, for example), this 'bridging' virtual channel must be employed (so the track can be altered in respect of volume, effects added if necessary etc). The titles 'VC In', 'VSC In' and 'VSC Music In' are there simply for convenience - all virtual channels are exactly the same. The amount of virtual channels you have depends on your audio interface device.

5. **Loopback**
   A loopback channel is, in essence, a virtual channel. A loopback channel 'loops back' internally and is an ASIO channel in Windows. It can be used to record system audio from web applications back into your DAW. This is useful for recording interviews etc. on streaming applications, taking a source such as a YouTube video with a backing track/lyrics & routing this via iO Pro to a karaoke application. Mac users can use a loopback channel for sound files, so these can be controlled in the same way Windows users would use a 'virtual channel', (i.e. so EQ, compression and gain structure can be applied).

6. Outputs

In essence, any input can be routed to any available output. They are automatically routed to 'Main' as a default, which is the main output bus, unless otherwise specified by the user. You will notice below, that the channel outputs are routed to 'Main' as default and that the Main output is routed to H/W 1/2 and the user's 'monitor' speakers ('H/W 1/2' stands for Hardware outputs 1 and 2).

Should you wish to route your input to an alternative output, please click the output drop down menu, Here, you will see a list of available outputs, to which you may route your signal. Below is an example of the 32Ci's available outputs for hardware channel 1 on Windows OS (reminder: virtual channels feature only on Windows OS - on Mac OS, they do not).



Reminder: Labelled 'virtual out' channels exist only in Windows OS.

The amount and type of outputs are dependent on the audio interface you are using and are described in the following list.

A: MAIN

This refers to the "main" stereo out channel, sometimes known as the stereo bus, or "2bus". All channel outputs are routed to this stereo out channel by default. The output of the stereo out channel itself defaults to HW OUT 1/2, (your monitors). You may alter the output destination of the stereo bus. Users are reminded that clicking 'MON' will reveal the Monitor channel which will allow all channels to be monitored separately to the 'Main' stereo out if so desired.

B: HW OUT (Hardware Channel OUT)

This refers to the hardware output channel/s including the headphones and/or line out output channels. In order to route an output to H/W 1/2 (Out), as an example. you can either select 'H/W 1/2' in your channel's output dropdown menu or you can select 'Main' and then select 'H/W 1/2' on the Main output channel. The signal will be directed to the same HW 1/2 output.

C: OTG: "On the Go"

This shows the hardware OTG ("on-the-go") output. If your device has an 'OTG' port, please refer to the 'OTG' section of your hardware manual for further information. If your device does not have an 'OTG' port, this channel will not appear.

D: OPTICAL Outs

This refers to external optical outputs such as ADAT. The amount of available channels will be reflected automatically in the GUI of iCON iO Pro. In ADAT's case, eight optical channels are available. If your device does not have optical ports, (i.e. ADAT, S/PDIF) these channels will not appear.

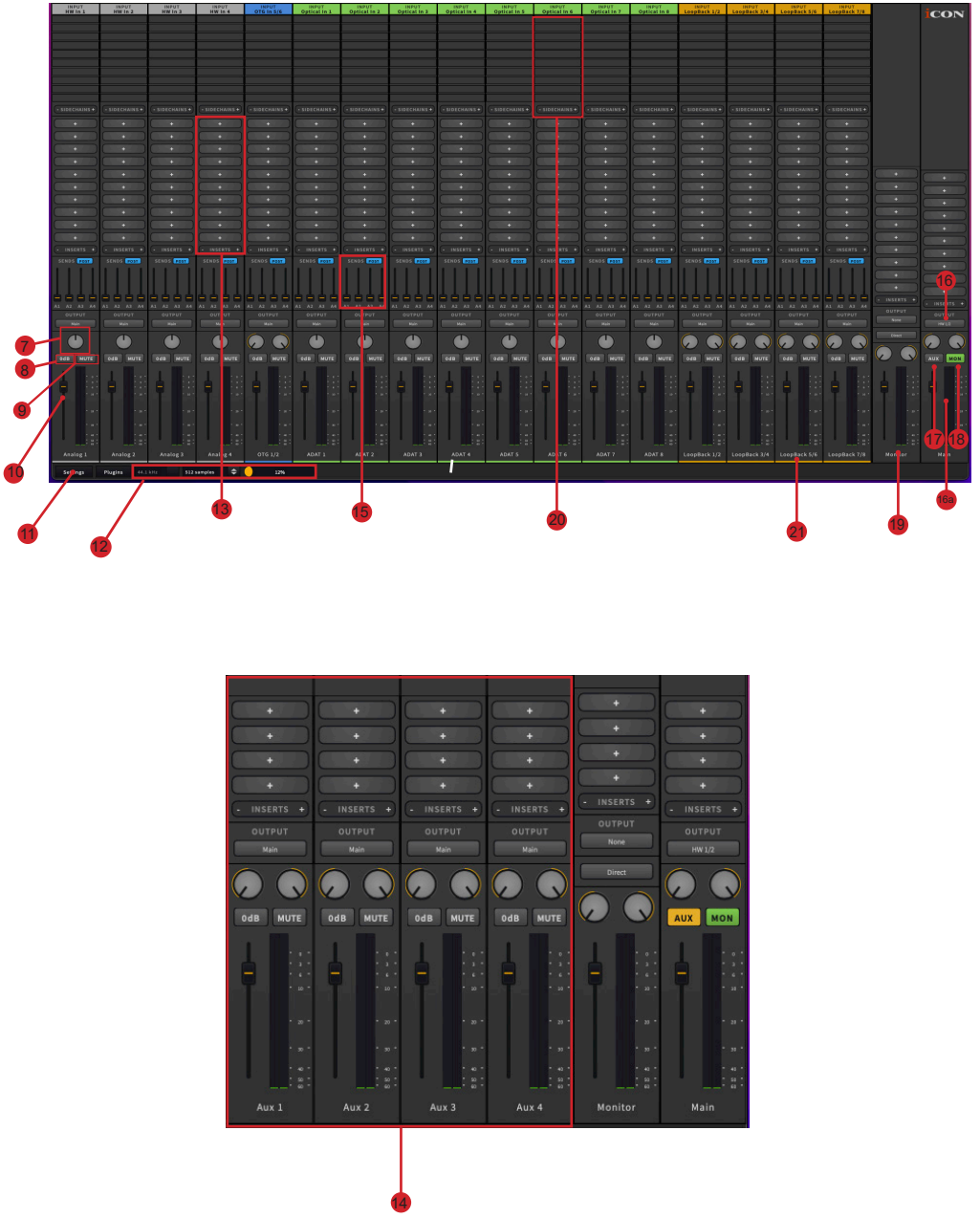
E: Virtual Channels OUT (VC Out, VSC Out, VSC Music Out)

Virtual channels are used in Windows for the purposes of the ICON iO Pro software. As explained in the 'Virtual Channels & Mac and Win versions of ICON iO Pro' section, Windows must convert the driver (known as WDM), that is used to power daily software such as media player to ASIO, (the driver that is used to power pro audio software). A virtual channel acts as a kind of 'bridge' to enable this to happen. The titles 'VC Out', 'VSC Out' and 'VSC Music Out' are there simply for convenience - all virtual channels are exactly the same. The amount of virtual channels depends on your audio interface device.

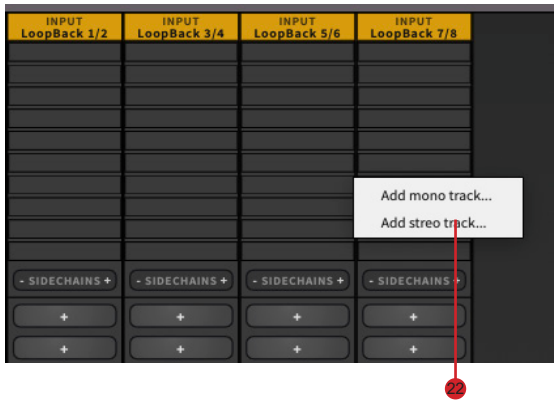
A user may wish to output their chosen signal via a virtual channel to say, a DAW or other software, (i.e. it is not a physical output like a speaker or headphones). If the user wishes to output their source to somewhere other than a hardware output (i.e. speakers or headphones), then a virtual channel must be used.

F: Loopback

This shows the loopback channel’s level metering. The amount of loopback channels depends on your audio interface device.


7
8
9
10
11
12
13
15
20
21
19
16
17
18
16a
Analog 1
Analog 2
Analog 3
Analog 4
OTG 1/2
ADAT 1
ADAT 2
ADAT 3
ADAT 4
ADAT 5
ADAT 6
ADAT 7
ADAT 8
LoopBack 1/2
LoopBack 3/4
LoopBack 5/6
LoopBack 7/8
Monitor
Main

INSERTS
OUTPUT
Main
None
Direct
HW 1/2
0dB
MUTE
AUX
MON
Aux 1
Aux 2
Aux 3
Aux 4
Monitor
Main
14



7. PAN controls - navigate left to right to position the placement of the sound. Mono channels have one PAN control, stereo channels have two.

8. 0dB switch
Switch to instantly adjust the corresponding channel to “0dB” level.

9. MUTE
Click to mute the selected channel.

10. Gain control fader
Slide to adjust the gain level for the corresponding channel.

11. Settings button
Click this button to launch the preferences window, in which it is possible to select various preference options. For example, which device to select for use with iO Pro and which input and output channels to activate or deactivate. Users are able to play an audio test and launch the 'control panel' within which advanced options can be selected, (See 'Control Panel').

12. Other quick settings
Here, you can make quick adjustments to your chosen sample rate and buffer size. You can also check on the CPU usage level of iO Pro.

13. INSERT SLOTS
There are ten INSERT slots per channel. The INSERT slot is denoted by the '+' symbol on the insert slot itself. This is used to indicate that you can 'add' elements here.

Users may add 3rd party plug ins in these INSERT slots, (explained in the 'Allocating plugins' section), as well as the iVerb (iCON Pro Audio's reverb plugin), iO Pro's very own MIDI monitor, a 'Stinger' (a 'sample' trigger), or a 'volume' plugin (useful for gain staging in 'Patch', in which users may construct their own plugin chains. See the 'Patch' section for detailed instructions on how to use 'Patch'.

Clicking the '+' and '-' symbols adjacent to the word 'INSERTS will increase or decrease the amount of INSERT slots viewable, (there is a maximum of ten viewable slots). The available slots will 'accordion out' (or in), depending on the user's requirement. Occupied slots will not be deleted when pressing the '-' button.

14. AUX channels 1-4

Plugins can be loaded on the INSERTS on these channels. These plugins will then be routed to SENDS 1 - 4. In other words, this means that globally set plugins (such as reverb or tape saturation) can be sent to each channel, the amount of which is controlled by the SEND level. This can be helpful in reducing CPU load, continuity in overall sound (i.e. by using one reverb for all channels) and plugin management. Each of these Aux channels has selectable outputs. There are 10 INSERTS per channel. This allows the user to utilize complex plugin chains on each of the AUX channels.
If using OTG, should you wish, you can route all channels used for the purposes of OTG to an Aux track. For example, incoming music via a virtual channel, together with say a mic channel (HW1 for example), both routed to an OTG channel which could, in turn, be routed in turn to an Aux Channel (using the mini faders i.e. A1, A2, A3, A4). In this way, you create a 'master' fader for your OTG audio content.

15. SENDS

SENDS 1- 4 send the signal to the aux inputs. The signal runs through the plugin inserts and out of the aux outputs. Click the button to toggle between Pre and Post fader, (i.e. the signal is routed to the AUXES before its channel fader (PRE) or after (POST). The green light indicates 'pre' fader and the blue light indicates 'post' fader.

16. Main output

This is where the user may set the main output for the iO Pro. Most often the H/W OUT 1/2 would be the preference (speakers) and is the default setting. Control the output volume with the fader directly below (16a).

17. AUX Control switch

This controls the AUX channels' visibility.

18. MON Control switch

This controls the MONITOR channel visibility.

19. MONITOR channel

This can be used as an alternative output, so that an engineer can control the channel they are monitoring through, rather than rely on the main output level. Direct monitoring is also available by clicking 'Direct'.

The box acts as a 'patch grid' with the output routed to outputs 1 & 2, in this example of a two input device, (indicated by the amount of mini faders available). Here, input 1 is being routed to outputs 1 & 2. Simply click the boxes to create the squares (the assignments).

Use the mini faders to control the direct signal volumes to hardware outputs.

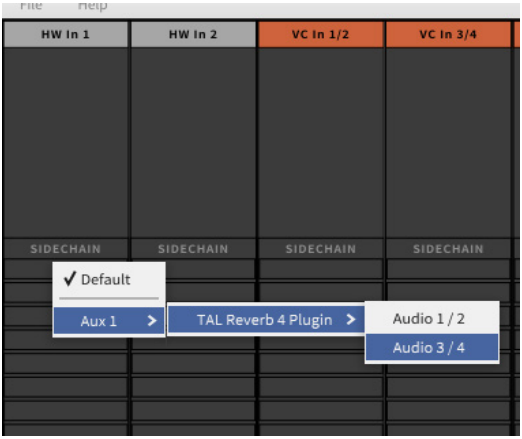
20. SIDECHAIN SLOTS

Sidechaining is a technique used in audio processing where the level of one signal is controlled by another, often to create dynamic effects like ducking or rhythmic pumping. In this section, users can manage sidechain slots, which allow them to route external signals to influence the processing of a given channel. There are ten available sidechain slots per channel. '+' and '-' symbols populate spaces either side of the word 'SIDECHAIN'. Users may click on these symbols to increase or decrease the amount of available slots. The available slots will 'accordion out' (or in), depending on the user's requirement. Occupied slots will not be deleted when pressing the '-' button.

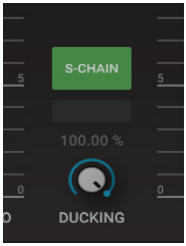
Should you wish to sidechain a plugin, whether it is a compressor, reverb, or indeed any type of plugin, this is entirely possible as long as the plugin itself has sidechain capability. In order to do this, place the plugin on any of the four Aux channels. In this example, we are using Aux channel 1.

Aux 1

Now navigate to your desired track and select one of the SIDECHAIN slots on that track. Select the relevant Aux channel, then the plugin name, then 'Audio 3/4' (which will be present for those plugins with sidechain functionality), as shown in the example below.



Activate the sidechain facility of the plugin on the plugin itself. This may appear in various forms and present different functions depending on the plugin that you are using. Please refer to your plugin owner's manual for specifics about the sidechain functionality of your plugin.



You can control the level of the sidechain via the orange slider in the Sidechain slot;

How you use the sidechain facility is up to you. It will no doubt prove useful for some musicians and DJ's in a live setting!

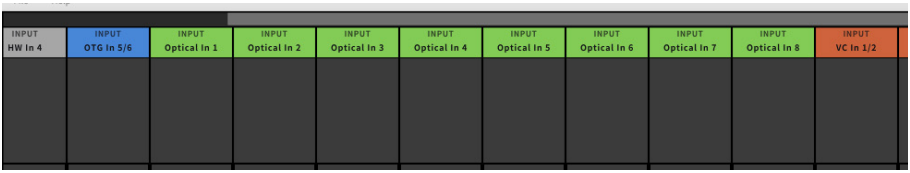
21. Outputs

These output titles can be renamed by clicking the text and inputting your own text via your computer keyboard

22. Add Tracks Menu

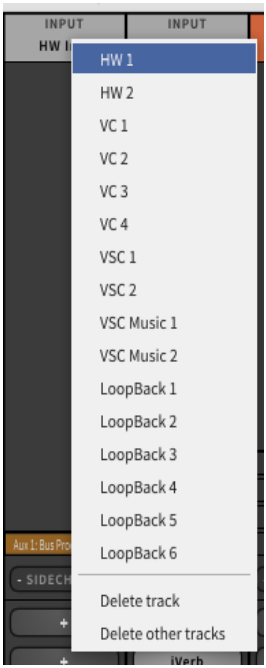
Either MONO or STEREO tracks can be added by right clicking on the unoccupied space on the GUI and selecting ether 'Add mono track' or 'Add stereo track' from the drop down menu.

Options in Mixer View

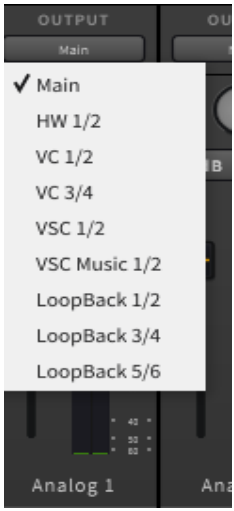


Users will notice that the available inputs are organised in fixed channel columns, dependent on the inputs of the audio device itself. The physical inputs will be reflected here as well as virtual inputs, (please see the previous section on virtual channels for clarification). All of the different types of tracks are color-coded.

The channel columns can be changed by dragging and dropping the track to your desired destination. The 'type' of track can also be changed by right-clicking and selecting the desired input from the drop down menu, as shown in example (1) below. The 'output' section also allows the user to differentiate the output routing. For instance, in the example below we can see HW1 In (Hardware In channel 1) has its output routed automatically to its default state i.e. HW out 1/2, (its 'main' output). In this instance, the user may change the output to a loopback or virtual channel (2), (virtual channels only appear in Windows versions of iCON iO Pro).



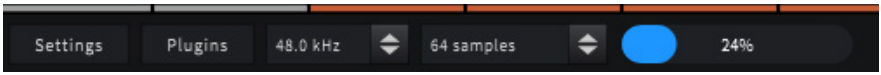
(1)

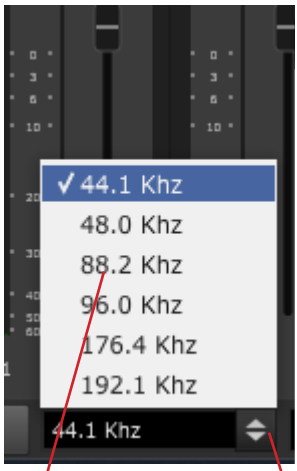


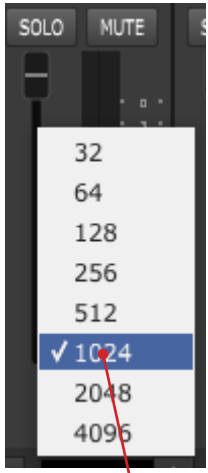
(2)

Quick Settings

Quick adjustments to sample rates and buffer size are made very easily. On the front panel on the bottom left, you will see two drop down boxes with adjustable values;







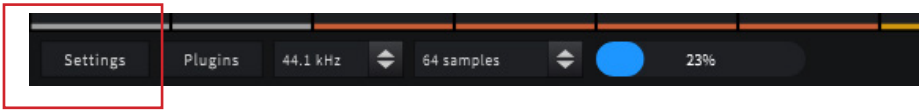
sample rate

click to select from the drop down menu

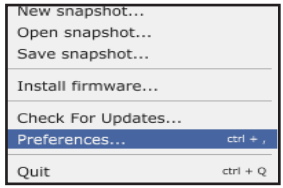
buffer size

Preferences

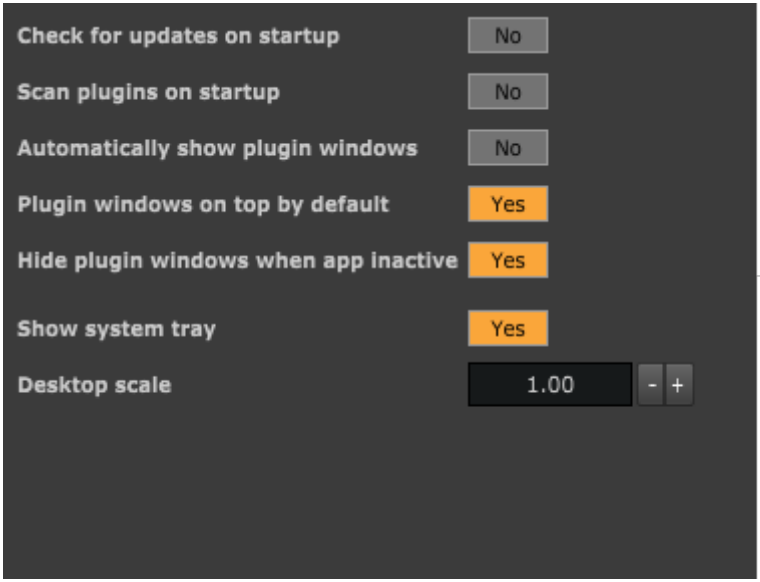
Users may access the preferences window via 'Settings' (bottom left).



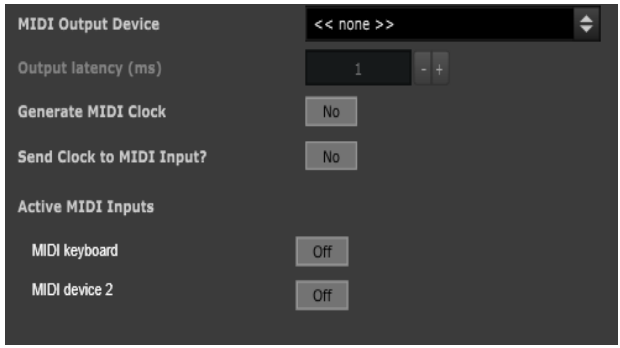
Additionally, clicking on 'File' and then 'Preferences' will result in opening the preferences window.



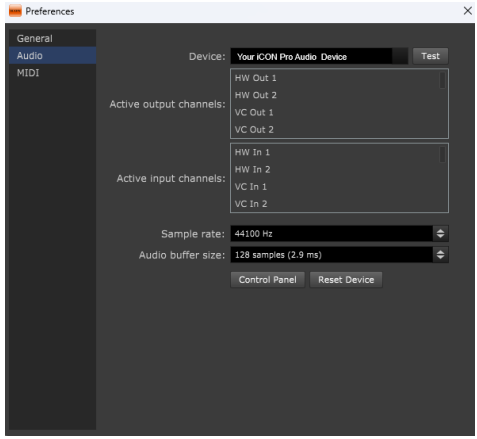
In the 'general' window, several options can be selected such as 'check for updates on startup'. Select or de-select these options according to preference.



Similarly, with MIDI options, some general options are available such as selecting a 'MIDI Output Device'. Also, MIDI input devices can be detected in this window.



In the 'audio' preference window, users may change the visible/operational inputs and outputs they wish to use as well as change sample rates and buffer sizes.



Users can also change the sample rate and buffer size as well as perform an audio test, (i.e. a test tone will be produced - please ensure speakers and headphones are at a reasonably low level before clicking this button).

Virtual Channels & Mac and Win versions of iCON iO Pro

It should be noted that the Mac is different to the Windows mixer view. The reason for this is the two types of Windows sound driver (WDM and ASIO) as previously explained. To recap, in simple terms, WDM is used for daily software such as system audio and media players and ASIO is used in DAWs and applications like ICON iO Pro.

The Mac OS has one unified driver, so it's not quite as complicated.

There are virtual channels in the Windows version of the mixer and loopback channels in both. In short, the virtual channels "convert" the WDM signals into ASIO so that ICON iO Pro can use them.

Some virtual channels are named differently and a good question is 'why is this so?'. To answer, 'VC Music' for example may be used to host the backing music for karaoke applications and is labelled as such to keep things clear for the user. That's the only difference.

In essence, as you may gather, any input can be routed to any output. So, your H/W In 1/2 (let's say a guitar and microphone) can be routed to the physical outputs i.e. HW Out 1/2 (your speakers) as well as virtual outputs which can be assigned to say, another program to record your performance or to stream to social media.

Equally, you can import music from say YouTube or a media player into iCON iO Pro. It is usually best, when routing such sources in Windows, to ensure that WDM sources are launched first (i.e. media players etc.) and ASIO second, (DAWs for example) and to launch iO Pro last, (which is itself an ASIO device).

There follows a section on the 'Control Panel' which appears only in the Windows version of iCON iO Pro. The 'control panel' relates to the ASIO driver in Windows where adjustments can be made to its settings.

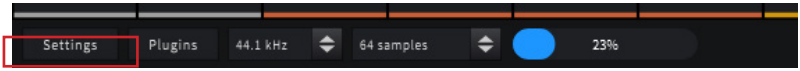
Note: Mac users need not concern themselves with the following section ('Control Panel'), as this does not appear in the Mac version of iO Pro - Mac OS has a universal sound driver which takes care of everything!

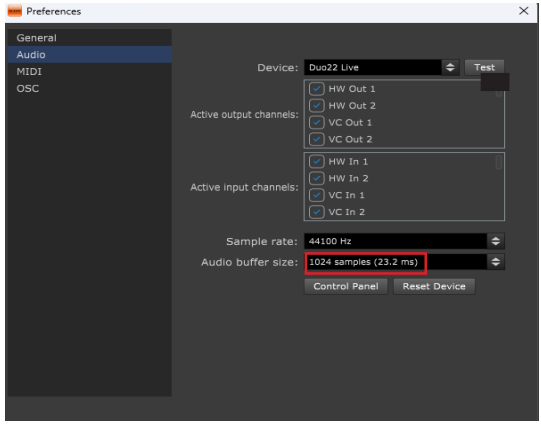
Windows only

Control Panel (Windows only)

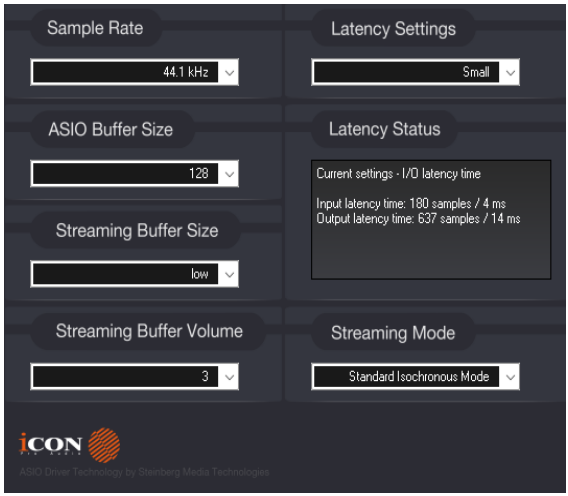
On a Mac, the following settings can be accessed via Applications > Utilities > Audio MIDI.

Setup





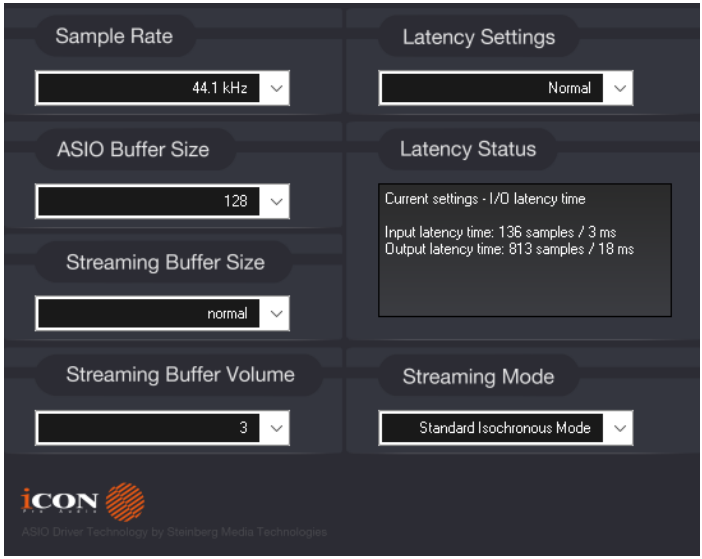
Click on 'control panel' in the preferences window. The control panel will launch, where further adjustments can be made within for the ASIO driver, for example streaming and ASIO buffer size, volume and latency settings.



Windows only

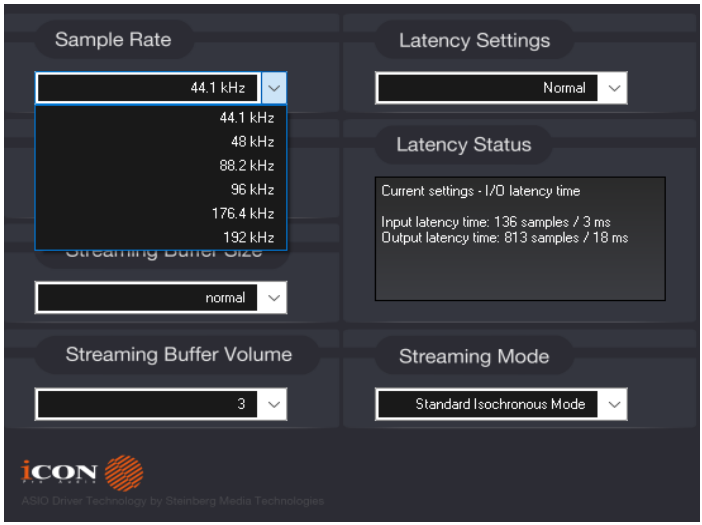
Sample rate and latency settings

Select the appropriate drop down menu and select the value.



Sample rate setting

Select your desired sampling rate from 44.1KHz to 192KHz on the pull down window.

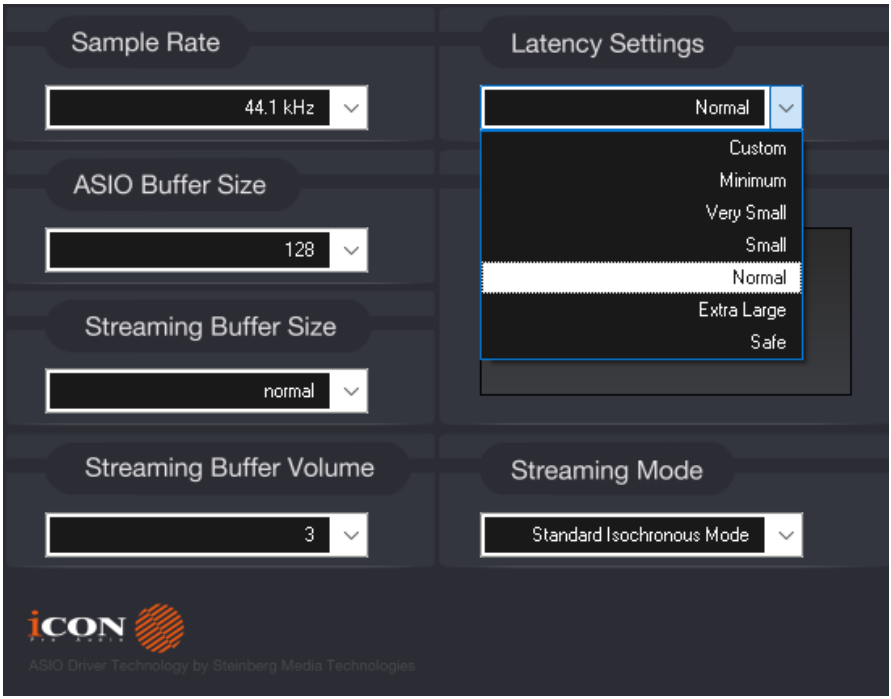


Windows only

Latency settings

There are six standard latency settings to select. If you would like to customize your own latency value, select 'custom'.

- Safe (maximum latency)
- Extra Large
- Normal
- Small
- Very Small
- Minimum (minimum latency)
- Custom



Windows only

The results of adjusting the latency setting 'presets' are changeable and dependent on the sample rate set.

As you will see from the table below, a 'minimum' preset latency setting for a sample rate of 44.1kHz is 32 samples per second, whereas, at 192 kHz, it has increased significantly.

Latency Settings

sample rate	Minimum	Very small	Small	Normal	Extra Large	Safe
44.1 kHz	32	64	128	128	256	512
48 kHz	32	64	128	128	256	512
88.2 kHz	64	128	256	256	512	1024
96 kHz	64	128	256	256	512	1024
176.4 kHz	128	256	512	512	1024	2048
192 kHz	128	256	512	512	1024	2048

ASIO buffer sizes (the amount of time you allow the computer to process the signal) are larger at higher latencies because they are used to buffer and process a larger amount of audio data.

A larger buffer size means that more audio data can be processed at one time, which can help to reduce the processing load on the computer and minimize the risk of dropouts or other glitches. However, a larger buffer size also means that there will be a longer delay between the time the audio is generated and the time it is heard, resulting in a higher latency.

Windows only

ASIO buffer Size

You may adjust the value ranging from 32/64/128/256/512/1024/2048 and 4096.

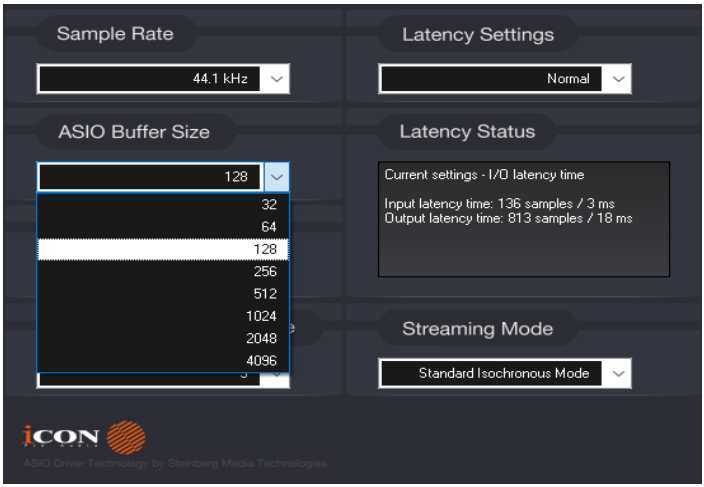
ASIO (Audio Stream Input/Output) is a low-latency audio driver standard used on Windows systems for audio software such as Cubase and iO Pro.

A smaller buffer size means that audio data is processed more frequently, which reduces latency, but may require more processing power from the computer.

A larger buffer size can reduce the processing load on the computer, but can increase latency, (the delay from say, a microphone as it travels through the audio interface, into the computer/device, and back again to the audio device - so it can be heard on headphones or through the speakers/monitors).

In general, a smaller buffer size is preferable for real-time audio recording and playback, as it reduces the delay between the input and output signals.

However, if the buffer size is too small for the computer's processing capabilities, it can result in audio glitches and dropouts. It's important to find the right balance between buffer size and system performance to ensure smooth and reliable audio operation. The optimal buffer size will depend on the specific hardware and software configuration of the computer and audio interface. Finding the right settings is most often a case of trial and error.



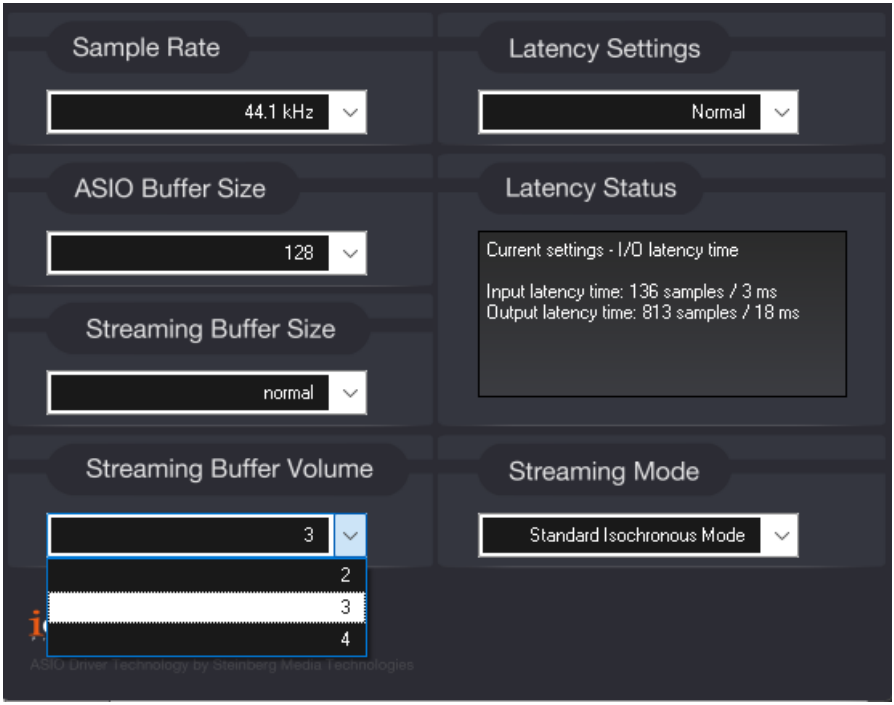
Windows only

Streaming buffer Size

Adjustable settings: Minimum/Low/Normal/High and Maximum.

This is the amount of data that is temporarily stored on a device before it is played back to you. Audio is sent in small chunks, which are then buffered on your device before they are played back.

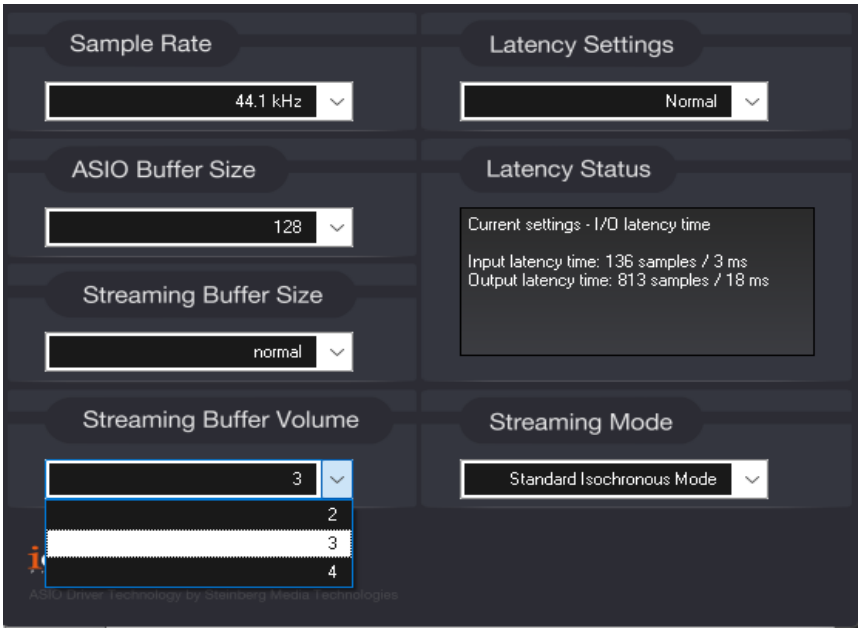
The buffer size determines how much of the content is stored on your device in advance. A larger buffer size means more data is stored in advance, which can help reduce stuttering issues caused by slow internet connections or network congestion. However, a larger buffer size also means that it takes longer for the content to start playing, as more data needs to be downloaded before playback can begin.

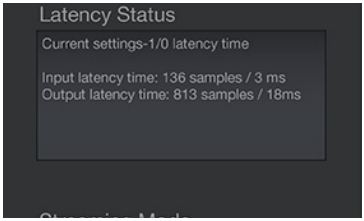


Windows only

Streaming buffer volume

Adjustable values: 2, 3 and 4





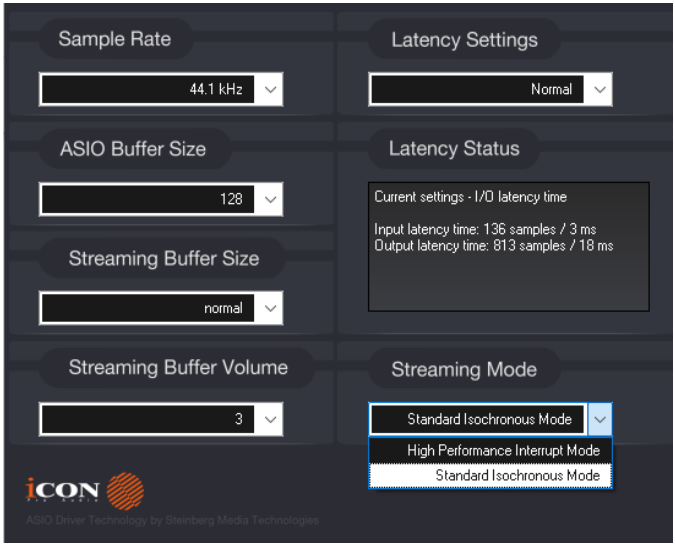
(Note: If a warning message appears on the "Latency Status" windows, please select a larger latency setting).

(Note: If a clicking sound occurs, you should change to a larger buffer size for the settings. If the largest buffer size has been selected and there is still a clicking sound. It means your computer performance is not able to handle the task, (i.e. it is not caused by the iCON Pro Audio audio interface).

Windows only

Streaming Mode

'Isochronous' mode uses fixed timing intervals to transfer data, while 'High Performance Interrupt' mode uses a more flexible and efficient method that adapts to the system's processing resources. 'High Performance Interrupt' mode is generally preferred for professional audio applications where reliability and low latency are critical.



Latency, Buffering and Sample Rates

Firstly, the key thing to remember is that there is no universal or ideal setting - it all depends on your computer, your OS and your internet connectivity (if you are broadcasting on social media, for example). It is a matter of trial and error in most cases and is changeable depending on how you are using iCON iO Pro.

As you develop and progress a recording or mix, you may need to adjust your buffer settings as you go along, for example.

There are plenty of very good websites which describe these constituent elements very well, but to break it down into simple terms;

Latency - the speed, measured in miliseconds (ms), that the audio/MIDI signal travels from the point of creation, (i.e. singing into a mic), through the interface, into and out of the computer and back to the interface to the headphones and audio outs, (speakers).

Sample Rate - this relates to the bit depth/sample rate of a signal (i.e. 16 bit/44.1kHz), the higher the sample rate, the higher the audio quality.

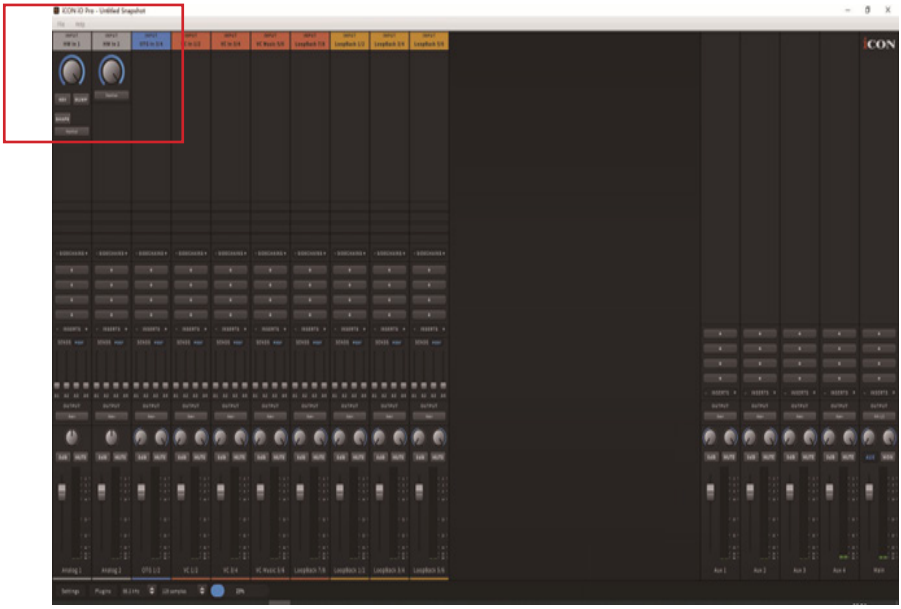
Buffering - basically, the amount of time you allow the computer to process the signal. Try and keep it as small as possible. Too small a buffer size may equate to glitches and drop outs, (the computer cannot process the signal in time). Too large a buffer size and this will loosen the strain on the computer's processing power, although this will increase latency (delay) in processing the signal.

It's all about finding the right compromise for you, so experimentation is the key. Don't become frustrated if the same settings do not apply to all situations. A heavy plugin load may require a larger buffer size to processing audio with minimal requirements. Some have different preferred settings for recording and mixing and indeed, mastering scenarios.

Think of your settings choices as 'fluid' rather than 'static' - iCON iO Pro facilitates these changes via its various options, quickly and with a minimum of fuss.

Controlling iCON Pro Audio Audio Interface Devices

Some iCON Pro Audio audio interfaces feature digital controls. With these devices, you will notice that items appear in the top left hand side of the mixer view in iO Pro. As you will ascertain from the relevant product manual, these are controls for the interface itself. Some devices are controlled entirely via iO Pro (such as the U44, which features a display screen to show changes made via the software). Some devices have a touchscreen and can be controlled via the hardware and/or iO Pro, (Touch 8) and some can be controlled by physical controls as well as the iO Pro software (such as the Cube2NanoS and Cube4NanoS) as they feature encoders which can be 'read' by iO Pro once connected.



The controls are explained in each product manual. The example of iO Pro on the following page (of the Cube4NanoS version), is indicative of the kinds of controls you may expect to find.

This is a screenshot of the input section of iO Pro for the Cube4NanoS device, shown here to provide an idea of the kinds of controls available. Each device will differ slightly - please refer to the individual audio interface manual for the specific details of your device.

+48V Phantom power is switched on and off here, (non-XLR inputs do not feature phantom power*)

The user can control the 'type' of input here i.e. line, mic or instrument

Controls specific to the Cube4NanoS and Cube2NanoS (see this specific manual)

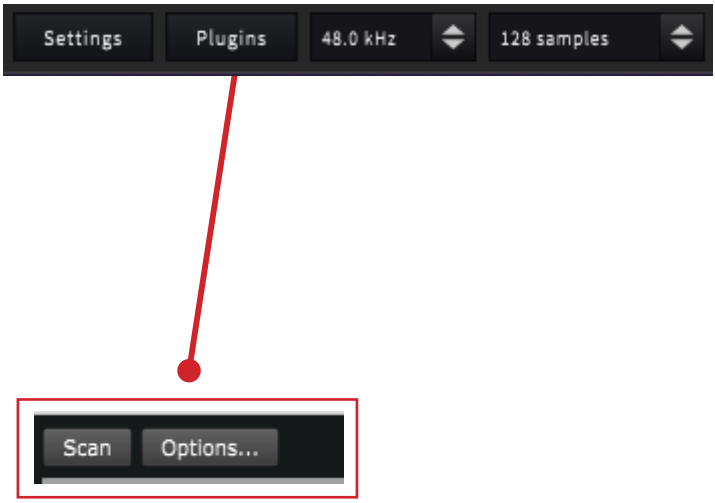
The level of the input is controlled here.

Opens the ‘monitor’ box, allowing control over OTG, headphone levels, and other settings, as well as enabling direct monitoring.

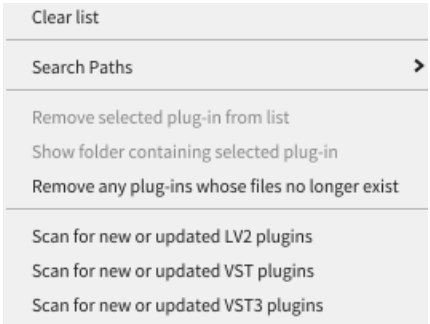
* Please be very careful when using phantom power. It can damage certain ribbon mics. Please consult your microphone manufacturer's documentation before making any such connections.

Import all your available plug-ins

To import all your available plug-ins for use in iO Pro, click the "Plugins" tab on the bottom left corner of the screen. Click "Options". Click "Scan VST" or "Scan VST3" to scan your computer for all the available corresponding plugins automatically. Alternatively, click "Scan" to scan all available plugins. A list of all available plugins will be shown after they have been imported automatically and are ready to be used in ICON iO Pro.



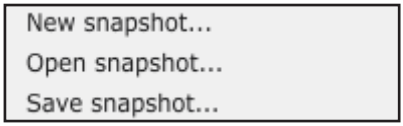
Various selections can be made via 'options';



Snapshots

Think of a 'snapshot' as a preset which you can load and save as desired. Once you have the configuration within iCON iO Pro as you would like it, save a snapshot to your chosen location. You can reset the software by clicking 'New Snapshot' and of course, load your snapshot from the location you have saved to.

You can find the snapshot menu in 'File' dropdown menu;



If you would like to save a snapshot, select 'save snapshot'. This will open the 'Save Snapshot' dialog box where you can navigate to the file of your choosing to save your snapshot.

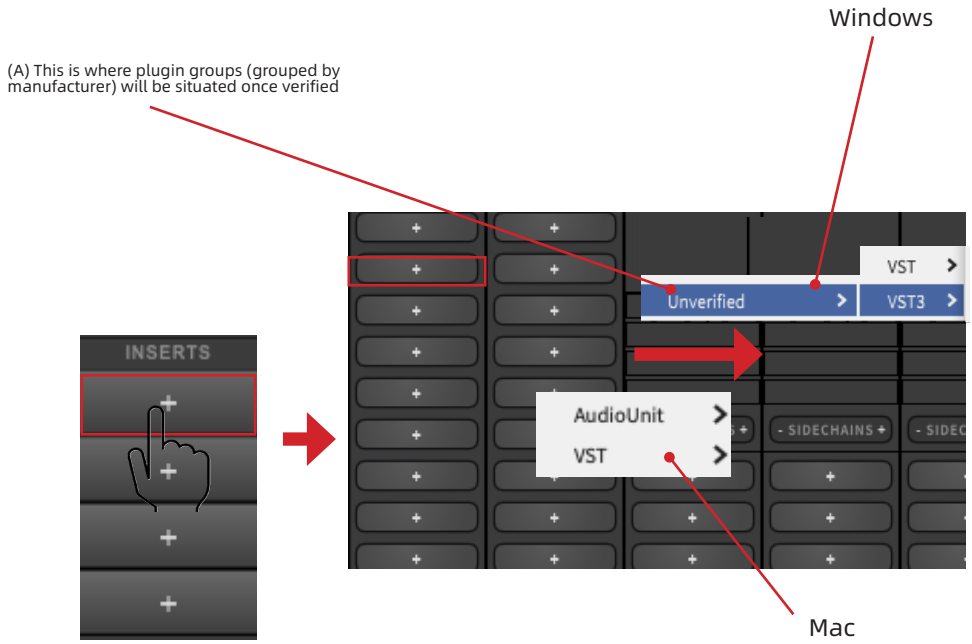
If you would like to open a snapshot, click 'open snapshot'. This will launch the 'Open snapshot' dialog box. Navigate to the file where you have saved your snapshot and select your file. Your 'snapshot' will now load with all your saved settings.

In order to reset to the default setting of iO Pro, simply select 'New snapshot'.

Allocating Plugins

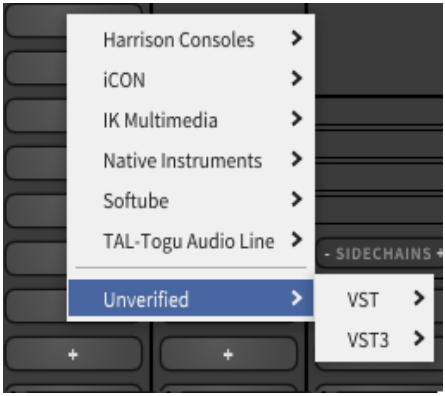
Users will also note the '+' symbols above the faders.

Once scanned, (see previous section), plugins can be allocated here, (in 4 available slots denoted by the '+' symbol). This allows the user to assign plugins to their iO Pro pathways without the need for a DAW. This is particularly useful in a live or semi-live situation when a singer requires compression or EQ for their vocal channel, whilst using other channels for synthesizers, guitars or backing tracks, for example.



Step 1: Select an INSERT slot

Step 2: Those plugins you've used before will automatically load on the dropdown menu, (A). If you have not used the plugin before in iO Pro, select 'Unverified' from the drop down menu, (these are plugins you have not used before - once selected by you, they will be seen in the future by iO Pro as 'verified'). A list of available plugins will load. Select your desired plugin.

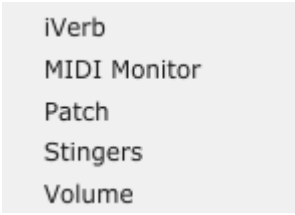


Once selected, the plugin will automatically inhabit the drop down list, along with the iCON plugin set.

Step 3: Click the '+' to launch the plugin GUI, (the '+' will be replaced by the name of the plugin).

iCON Plugin Modules

Clicking iCON' in the drop down list will launch a submenu in which you can select the following iCON modules;



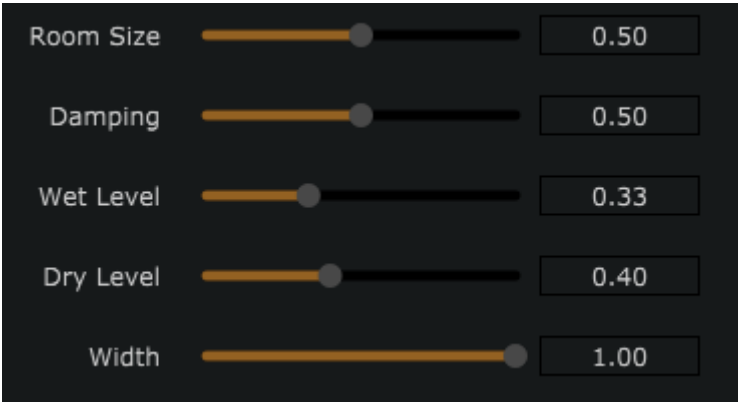
iVerb - iCON Pro Audio's reverb plugin.
MIDI Monitor - monitor your MIDI signals (useful when used 'within' the Patch facility)
Patch - create complex plugin chains, connect virtual instruments and gain stage constituent elements of a chain
Stingers - allocate audio samples to a 'sample trigger' - ideal for use in podcasts and other broadcasts - allocate your QWERTY keyboard keys to trigger samples within the program
Volume - a simple volume 'block' which can be used to gain stage within Patch, (or in an INSERT slot)

More details on the above can be found in the following sections.

iVerb

iCON iO Pro has its own, easy-to-use, dedicated reverb plugin, iVerb. This effectively adds 'reverberation' to your voice, which is especially useful for those who would like to use iO Pro for live performance scenarios without the need for additional plugins.

Simply click 'iVerb' to add your reverb to your track and adjust the settings according to taste.



iVerb will provide a more 'professional' sound - perfect for karaoke and other live vocal performances!

MIDI Monitor

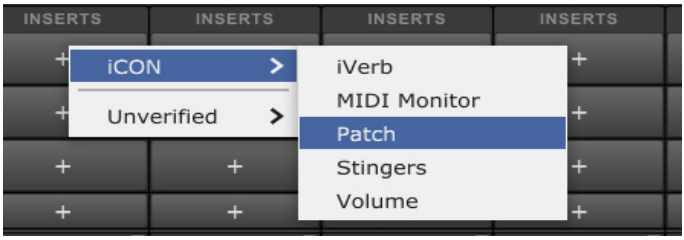
MIDI Monitor is a tool that displays MIDI messages being sent and received within a system. It helps users analyze, troubleshoot, and verify MIDI data from controllers, keyboards, software, and other MIDI-enabled devices. MIDI Monitor is perhaps most usefully implemented within the Patch feature.

Patch

As well as being able to load individual plugins, users are able to link plugins using the Patch.

In essence, this allows you to connect various plugins and to route your signal input and output path within one INSERT slot.

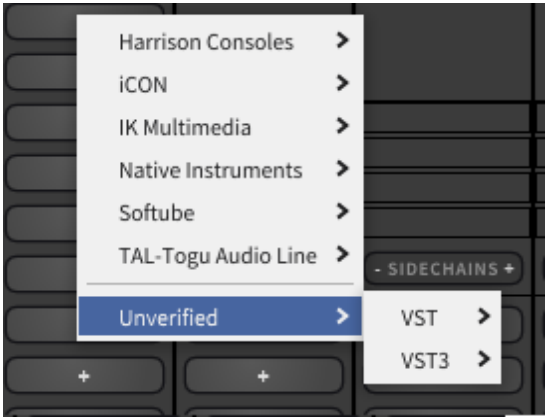
Click the '+' symbol, then click iCON on the drop down box, then select 'Patch'.



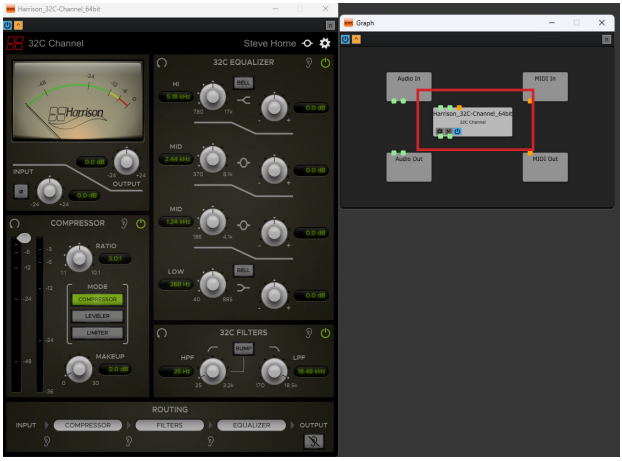
This window loads;

Here, you can add plugins. Just like adding plugins to an INSERT slot, the user will need to ensure that any plugin is chosen from the 'Unverified' list upon first use.
If it has already previously been allocated to an INSERT slot (or within Patch), the plugin will be made available in the drop down box by right clicking inside the Patch window (or any INSERT slot).

Similarly, after selecting a plugin for the first time in Patch the chosen plugin will populate the drop down list displayed when right-clicking 'Patch'.

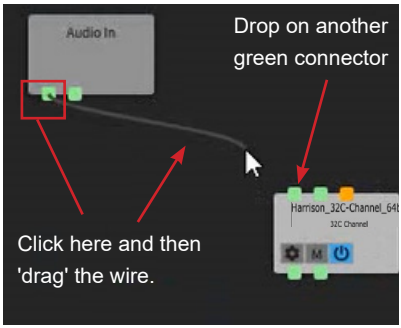


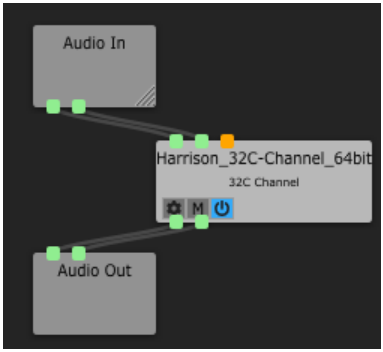
You will then be able to choose from a list of your available plugins (see 'Import all Your Available Plugins'). Your plugin will then populate the window as below. It's GUI will also load separately, after clicking the grey box which is launched in Patch (with the associated plugin name). You can then adjust the parameters to taste.



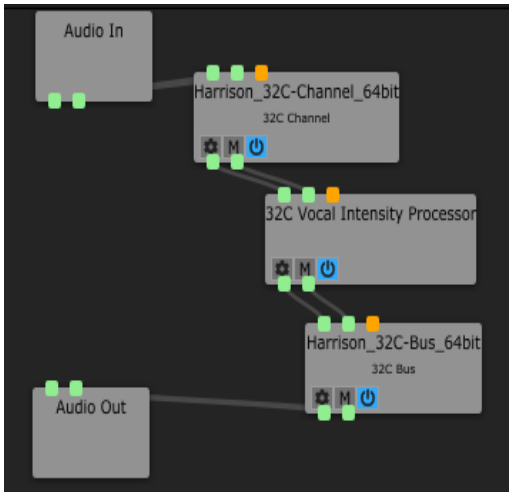
Now it's time to connect the plug in so that the INSERT 'sees' it i.e. we need to connect it to the input and output blocks, (also referred to as 'nodes').

To do this, simply click the green boxes. This will launch a 'wire' which you can 'drag and drop' onto another green connector. Below, we can see that two 'wires' have been connected from 'Audio In' to the plugin (Harrison 32C) and the two green boxes on the bottom of the plugin block have been clicked which has similarly resulted in launching wires which have been dragged and dropped onto the green connectors on the 'Audio Out' block (or 'node').





You can build extensive plugin chains using this method in just one INSERT slot. In the example below, the user has clicked on the two green boxes on the 'Audio In' block, dragged its two wires to connect to the Harrison 32C plugin via its green boxes as before, except this time they have clicked the green boxes beneath the 32C plugin to directly connect to the next plugin they would like in their chain, namely the Harrison Vocal Intensity Processor. The user has connected the 32C Bus plugin as the final stage in their chain using the same method, clicked its two lower green boxes, and dragged and dropped two wires to the 'Audio Out' block (or 'node'), completing the plugin chain.

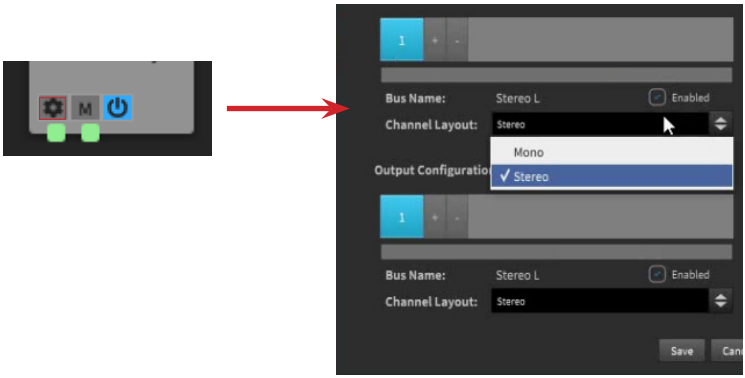


You can manipulate the boxes within the window according to taste and convenience and simply click on the plugin box to launch the GUI.

Various other options are available within the window in respect of, for example, creating a more ergonomic or 'tidy' arrangement within the window automatically, (i.e. 'Change orientation').

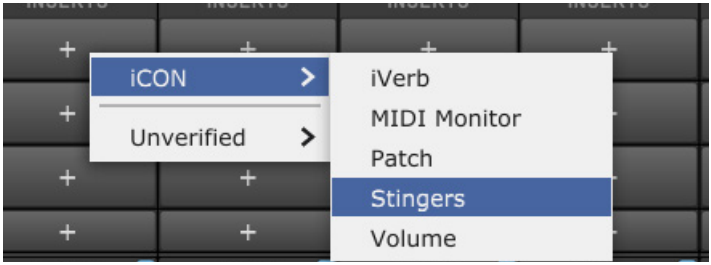
Essentially, the user is free to manipulate the arrangement of plugins according to their needs and taste and, like so many things in music technology, experimentation is key!

Some block/plugin I/O configurations within Patch can be changed by clicking the cog icon (if applicable to the plugin).

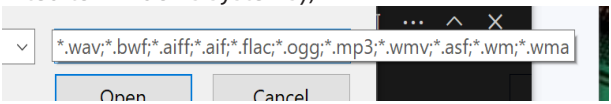


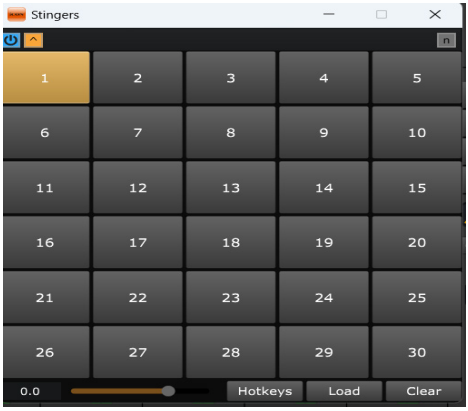
Stingers

Click the '+' symbol, then click ICON on the drop down box, then select 'Stingers'.



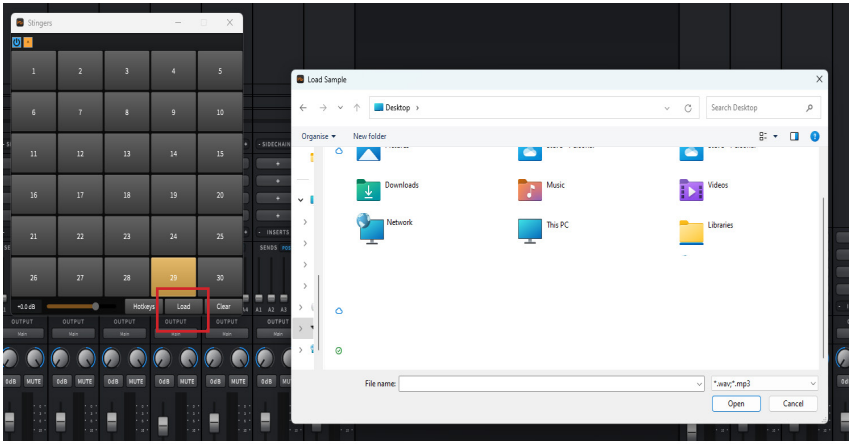
The best way to think of Stingers is as a 'sample player' or 'audio trigger'. That is to say that once loaded, each pad (1-30), will play samples or audio files of your choosing in all common formats, such as .wav files and .mp3 files, (Windows formats are obviously limited to Windows systems);





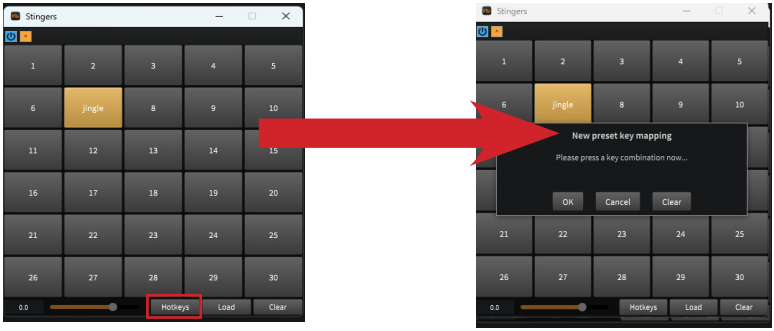
This functionality is probably best suited to podcasts or broadcasts that may require short bursts of sound - for example, the sound of clapping, laughter, an airhorn, a short jingle or other sound fx.

Select the pad first, then simply click 'load' to load your file into the respective 'pad'. Click the pad to play, click 'clear' to delete the sound from Stingers and use the volume slider on the left to adjust volume to taste. Click the pad to pause the audio.

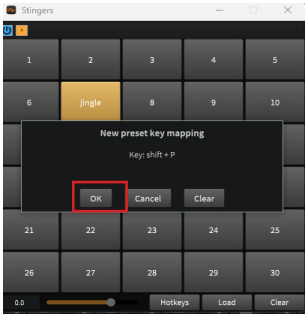


If you would like to use your QWERTY computer keyboard to trigger stingers i.e. press the 'W' key or '2' from the number keypad on your keyboard for example, in order to play a loaded sample, this is possible using 'Hotkeys'.

Let's say we have a jingle loaded in slot 7. Select the 'pad' so it is highlighted. Click 'Hotkeys, (bottom left).



As we can see, this launches a box which prompts you to enter a key combination.
Lets select SHIFT + P on our QWERTY keyboard.

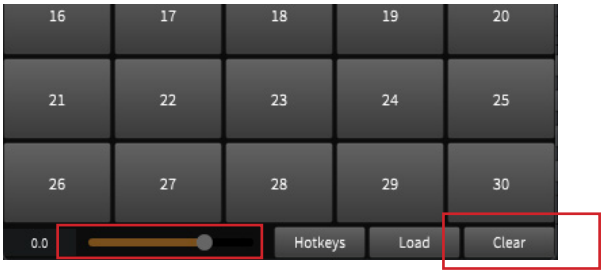


SHIFT + P is reflected in the box. Now press 'OK'.
When pressing SHIFT + P on your QWERTY keyboard, the jingle will be played.

Please note that audio files can be played and paused only. They cannot be rewound or forwarded . Hence, the suitability of this feature for short bursts of audio such as jingles, sound fx etc.

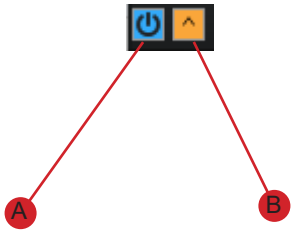
Pads can be cleared by selecting individual pads and clicking 'Clear'. The overall volume can be altered using the 'volume' slider.

To rename samples, navigate to the sample file on your computer and rename it manually (i.e. 'sample.mp3' to 'newsamplename.mp3').



Buttons on all modules

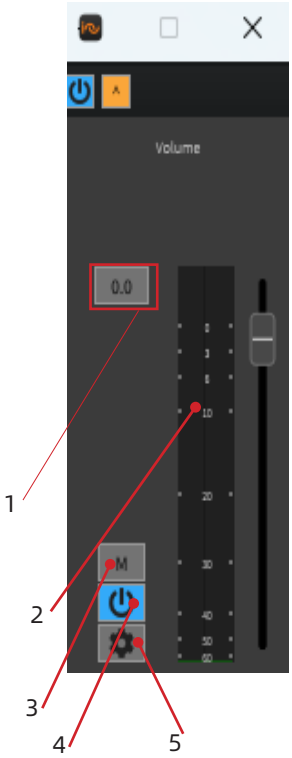
Whether it's a plugin, iVerb, MIDI Monitor, Patch or Stinger you're launching, all module windows have the same two buttons.



Button A:
Turns the module on or off.

Button B:
Ensures the module is placed on top of the other modules.

The Volume Block

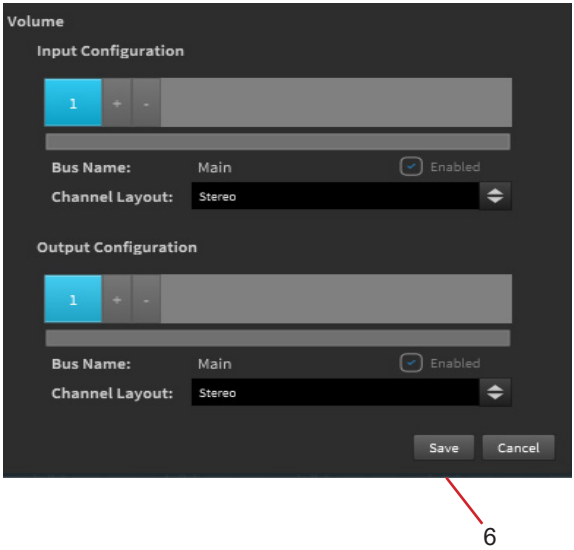


A simple volume block, most usefully used to alter the volume level to and from various modules within the Patch feature. This can be useful for 'gain staging' various plugin chains (altering the volume between each module).

The dB level is clearly readable on the metering (2) as well as the separate readout (1).

The volume block can be muted (3) and turned on and off (4).

The 'cog' icon (5) launches a separate window (6) and allows the users to change input and output configurations if applicable.



The Aux Channel and Sends

Users are able to allocate plugins, (whether third party or iCON's plugin family) via the 'Aux' (auxiliary) channels. These channels mimic traditional mixing board architecture and allow plugins to be universally applied. For example, if the user wishes to apply reverb to several channels, a single instance of reverb can be applied to an 'aux' channel. Then, the amount of reverb per channel can be adjusted via the 'Sends' control, located above the channel faders.

The overall volume of plugins placed on the 4 AUX channels can be controlled by channel SEND volume sliders.

The Floating Icon

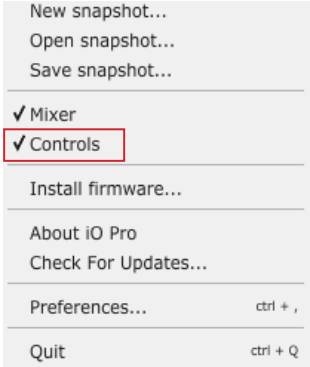
The Floating Icon allows you to assign any two plugins to these two buttons for instant recall or bypass at any given time. This might be useful, for example, when switching between two types of reverb when performing vocals live. One instance of iVerb could be set for ballads, (with a longer reverb tail for example), and one instance of iVerb could be used for uptempo songs, where the reverb will need to be shorter. Switching between the two types of reverb is easy when using the 'float'. Equally, both targeted plugins can be muted, allowing a 'voice over' with no reverb fx. This is just one example of how this functionality can be used.

Launch iO Pro. The Mixer view appears as does the floating icon;

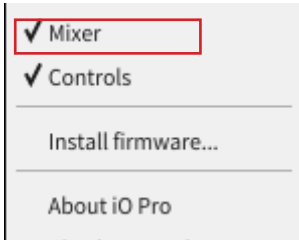
It is easy to move the 'float' around the screen, by simply clicking on it and maneuvering your mouse, dropping it at a convenient position.

Alternatively, right click on the floating icon and uncheck 'Control' if you don't wish to use the floating icon.

You can re-instate the floating icon (or 'float') by visiting the File menu in the Mixer window and selecting 'Controls'.



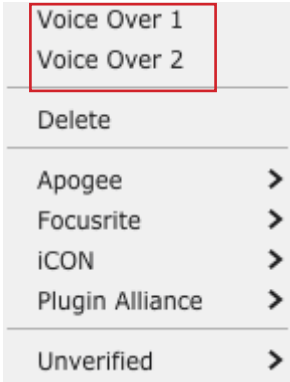
Should the Mixer window not appear when launching iO Pro, simply check 'Mixer' by right clicking the floating icon. This will launch the Mixer window.



You can insert the targeted plugins where you would like. For example, on a hardware channel or on an AUX track, (which could then be sent to the SEND returns, the level of which could be controlled per channel).

The latter example, (using an AUX track) is ideal if you have multiple inputs that you would like to use. For example, if you had multiple hardware inputs on your iCON Pro Audio interface and wanted to use 4 microphones, you could place your two targeted plugins on an AUX track, control the resulting volume of the signal via the SENDs for each channel you are using. Keeping with our example of two instances of iVerb, one for ballads, one for uptempo songs, this means that the reverb 'feed' for all four microphones can be controlled by two buttons on the floating icon. If you were hosting a karaoke evening, this might prove useful. There will, of course, be multiple uses for this functionality, and this is just one example.

Once a plugin is loaded on a channel, an additional entry is made on the dropdown menu of that plugin when you right click it - namely 'voiceover 1' and 'voiceover 2';

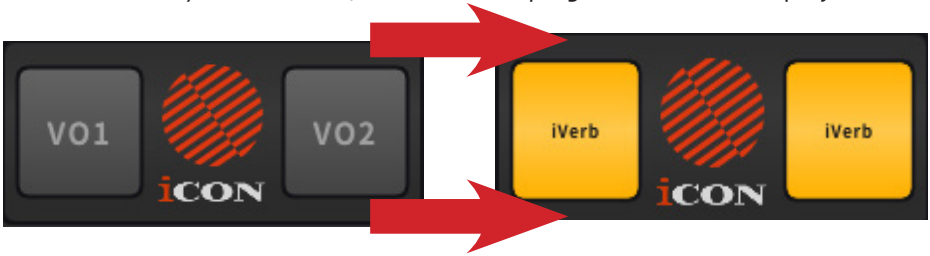


Simply select either Voiceover 1 or Voiceover 2 by right clicking the inserted plugin.

In our example, we are using two instances of iVerb with two different settings. Here, we have right clicked on HW1's first INSERT slot where iVerb no.1 is placed. We select 'Voice Over 1'.

For our second instance of iVerb we choose 'Voice Over 2'.

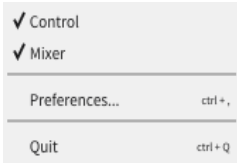
The Float buttons will now illuminate. This indicates that both plugins are targeted, (only one would illuminate if only one plug in was selected for either VO1 or VO2). Furthermore, the title of the plugin itself will be displayed.



By clicking VO1 or/and VO2 on and off on the Float, the targeted plug in is toggled between 'Bypass' and 'On'. If the VO1 or VO2 button is illuminated, the plugin is active. If not, it is bypassed.

Should a subsequent plugin be mapped to VO1 or VO2, iO Pro will retain the most recently mapped plugin.

Usefully, you can Quit iO Pro without having to visit the mixer window by simply right clicking on the floating icon and selecting 'Quit'.



Understanding OTG (On-The-Go)

OTG (On-The-Go) technology allows mobile devices, like smartphones, to function as hosts for external USB devices, such as audio interfaces. This setup can be invaluable for musicians, content creators, and streamers who want high-quality audio in their recordings, live streams, or other media captured on their smartphones. Below is a guide on setting up a phone to accept audio from an iCON Pro Audio interface with OTG capability, such as the iCON Pro Audio 32Ci.

Please note that not all mobile phones are compatible with OTG and that phone settings with compatible phones may need adjustment in order to function with OTG. Please refer to your phone manufacturer's guides/support and/or online help videos for clarification regarding your particular device.

Part A: Connect an iCON Pro Audio Interface to Your Phone with OTG:

Step 1: Gather the Necessary Equipment

- **Audio Interface**: Use an OTG-compatible audio interface, such as the iCON Pro Audio 32Ci.
- **OTG Adapter**: Purchase a high-quality USB OTG adapter to ensure a stable connection to your phone. For iPhones, please use Apple Camera kits for lightning connections. **Please check the compatibility of the adapter with your phone before purchase.**
- **High-Spec USB Cable**: Select a high quality USB cable.**Please check with the USB cable retailer regarding compatibility with OTG and your phone.**

Please see the note on 'Power' at the end of this section.

Step 2: Phone Setup

In short, it is likely that two or more adjustments will need to be made to Android phone settings. Adjust your phone's settings to accept external audio input from the audio interface and its external microphone functionality;

- **Enable External USB Input**: Access your phone's settings and enable the USB port to accept an external microphone. This is typically found in 'Connection' or 'USB settings'. You may need to refer to your phone manufacturer's instruction documentation in order to do this.
- **Enable USB Microphone**: In the sound/audio settings, select **USB Microphone** to enable audio input from the OTG device. Menu/function names may vary by device; refer to the phone manufacturer's guide for precise guidance, or check a relevant online user video tutorial (remembering these are not necessarily endorsed by the manufacturer).

Please note that an example of setting up an Android 14 phone is provided on page 68.

Part B: Routing Audio with iO Pro Software

After the physical connection is established, configure audio routing with the iO Pro software for detailed control over input and output channels.

Let's use an example of a user setting up their mobile phone, an OTG-capable iCON audio interface device and the iO Pro software to create a live performance involving a vocal and backing track.

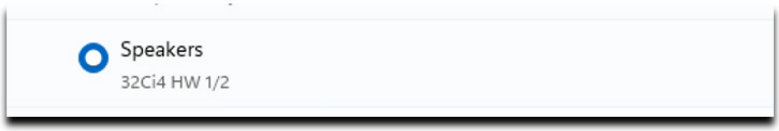
1. **Open the iO Pro Software**:

Launch the iO Pro software on your computer. Ensure the iCON Pro Audio device is recognized by the software and confirm that the backing track and microphone are ready for routing i.e. the microphone is plugged in to the audio interface and its input level is adjusted to taste. Equally, ensure that the backing track is ready to play via a media player on your computer.

2. **Routing Audio Channels**:

Please remember that Windows systems are somewhat different to Mac systems in that "virtual channels" exist on Windows computers and do not on Mac systems (as there is no need for them in the Mac OS). Therefore, you may need to adjust your Windows system input settings to VC (virtual channel) 1/2 or similar.

In Windows 11, in Sound Settings, you can see how this would look for the 32Ci device below;



Default setting – Hardware channels 1 and 2 (i.e. speakers/headphones in most cases)

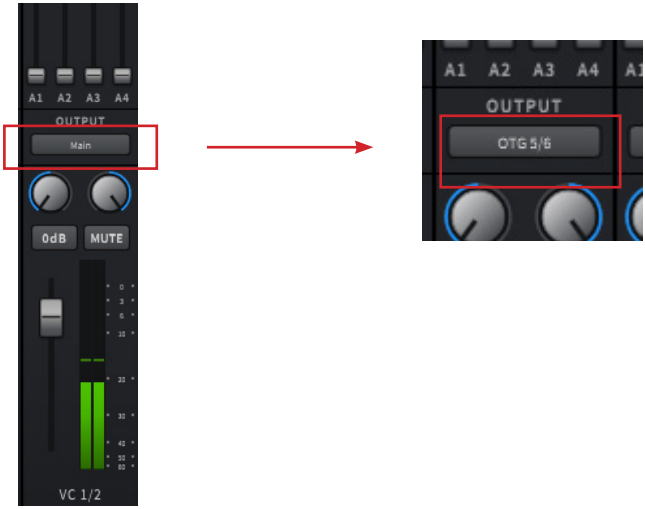
Virtual Channel 1 and 2 selected.

You can also route OTG via specific apps in Windows rather than "Sound Settings". See page 56 for details.

- **Backing Track**:

  In iO Pro, if using Windows, **VC 1/2** will appear as the input channel for the backing track, which can be played from a media player such as Windows Media Player. Mac users' audio can be routed to your desired track i.e. Loopback 1/2.

Change the output from 'Main' (or other destination) of the VC 1/2 track to 'OTG'.

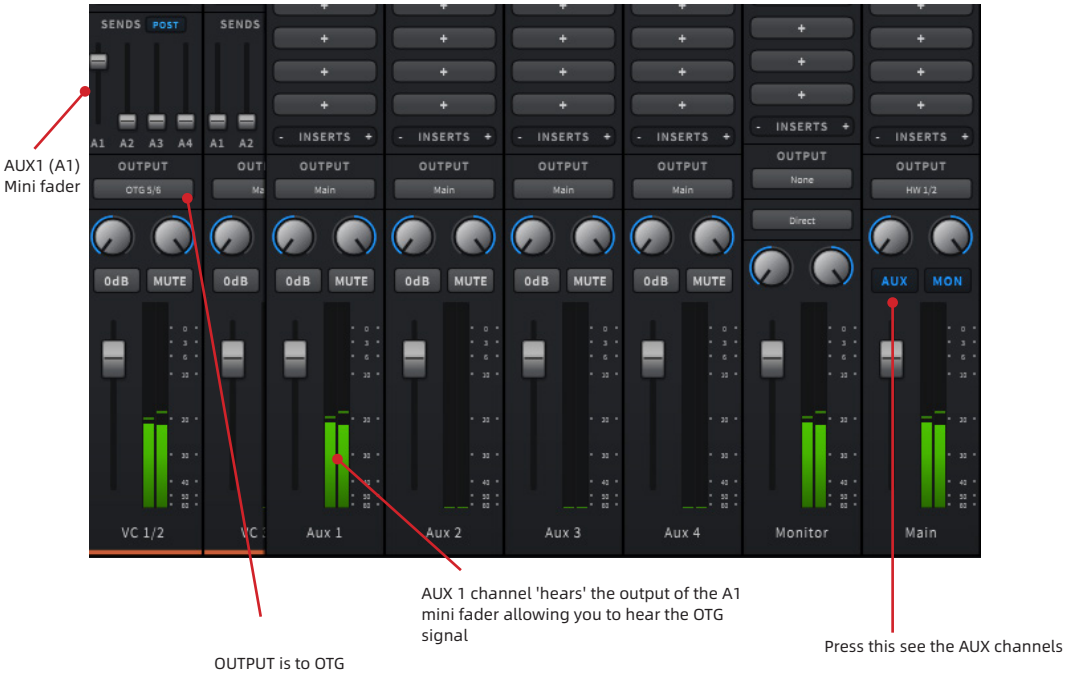


- **Microphone:**

- For the microphone, select a track such as **Analog 1** as the input source i.e. having plugged your microphone into Mic 1 on the device.
- Route Analog 1 to the OTG channel, so your voice is also transferred to the phone.

Monitoring OTG signal

To monitor OTG audio, activate AUX visibility. Choose an AUX channel to monitor the signal through i.e. AUX 1. Adjust the corresponding mini fader - in this case A1 - on the channel concerned as shown in the diagram below;



Recording or Streaming Audio:

Your audio signal should now reach your phone, where you can record using a sound recorder app or capture video with high-quality audio in the camera app.

For live streaming, open your preferred social media app. Some apps may not automatically recognize the external audio signal, so additional streaming software or settings adjustments may be necessary, depending on app compatibility. Please refer to your app's instructions.

Note:

While OTG connections offer enhanced audio quality for mobile recordings and live streams, some social media platforms may restrict external audio inputs. If you encounter issues, secondary apps or specific settings may be required. Further research on app-specific requirements is advised.

See the Scenario section for an example of setting up an Android 14 phone in more detail.

Power:

The use of certain social media apps may drain battery life at a quicker rate than normal, when using OTG.

If available, some users may prefer to use a "Y" OTG cable which allows the user to connect to OTG capable devices whilst simultaneously charging their phone.

If you are having issues using OTG, you may wish to check your phone/device manufacturer's recommendations for its use and/or check out the troubleshooting guide in the appendix of this manual.

Routing OTG via specific apps (a browser) rather than Sound Settings:

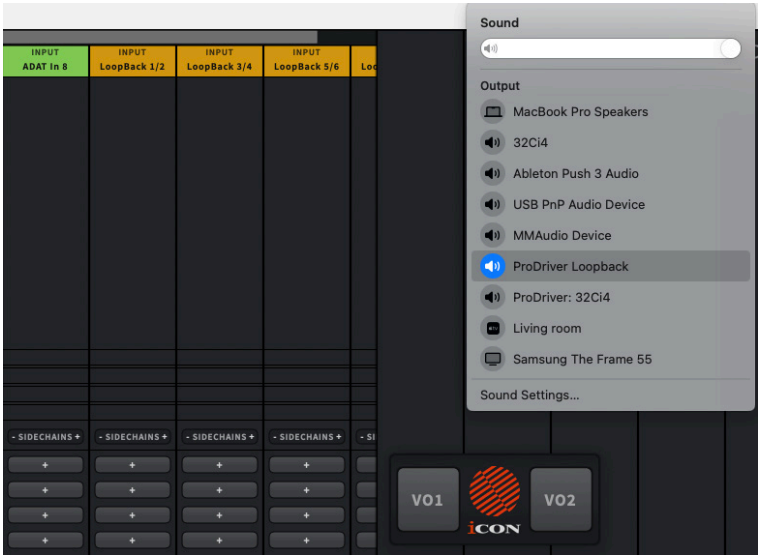
1. Open iO Pro, then launch your browser and play a video on YouTube.
2. Right-click the small speaker icon in the lower-right corner of your computer's taskbar, select "Sound Settings", then navigate to 'App volume and device preferences'
3. Locate the browser you used to open YouTube and set its output to "Speakers (Touch8 VC 1/2)'.
4. Return to the iO Pro interface and locate the "INPUT VC 1/2" track.
5. Click the "OUTPUT" option on the VC 1/2 track, hold down the "Ctrl" key, then left-click "OTG 5/6" with your mouse.
6. The audio from YouTube will now be routed through the OTG output to your phone connected to the audio interface's "UNI OTG" port.

Loopback

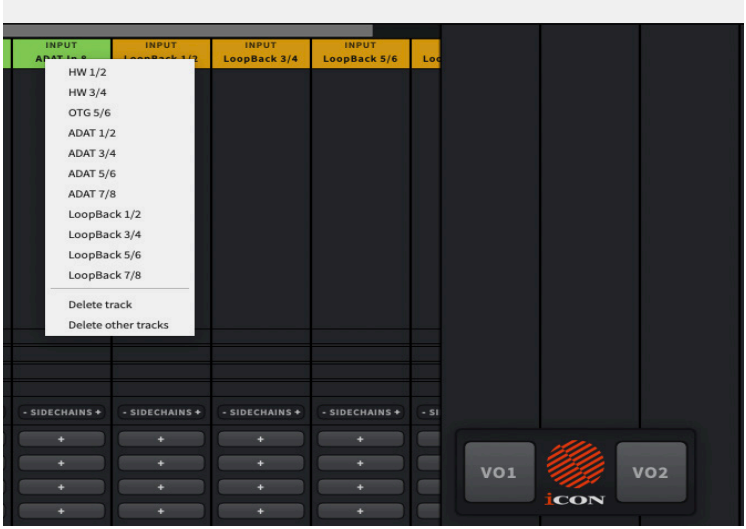
Loopback in iO Pro allows you to route audio from your computer (like system sounds or a DAW) back into the input channels, so you can record or stream it alongside your microphone. This is useful for live streaming, podcasting, and virtual meetings where you want to capture both your voice and computer audio.

To configure Loopback on Mac:

1. Navigate to your computer's audio output and select "ProDriver Loopback".



2. Test to ensure audio is received by iO Pro. This can be achieved by opening a video from YouTube or a similar application in your browser. When you play the selected video, you should see its audio signal in Loopback channels 1/2 in iO Pro by default, (reflected in the meters). To select additional Loopback channel destinations, you can configure the Loopback inputs by clicking at the top of each channel strip in IO Pro.

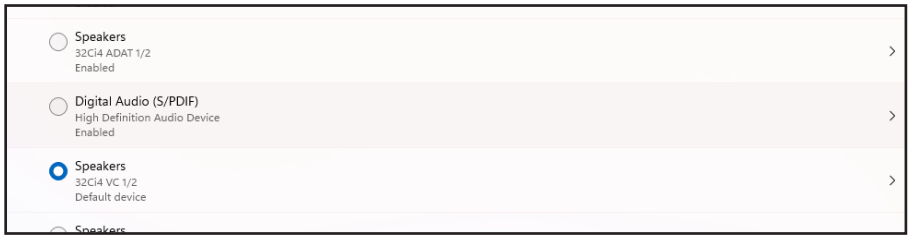


3. To route audio to your DAW, ensure that "ProDriver Loopback" is also selected as an input in your DAW.

To configure Loopback in Windows:

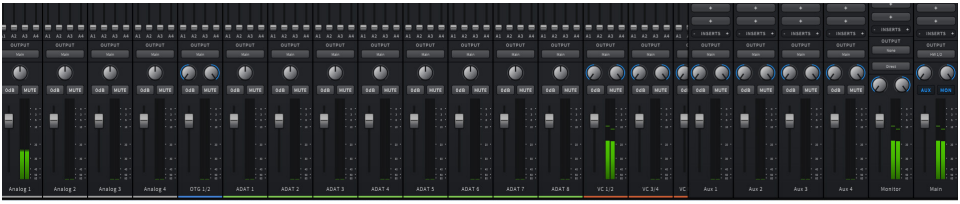
Configuration is slightly different in Windows systems as a result of the different types of audio driver Windows employs.

1. Go to Sound Settings. Select a virtual channel in the output section for your iCON audio interface. In the example below, we have selected VC 1/2 (virtual channels 1 and 2) for the 32Ci audio interface.

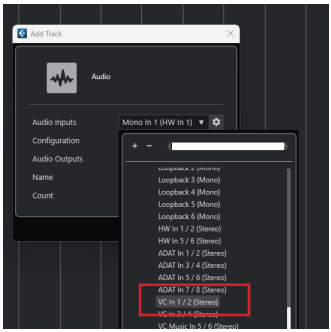


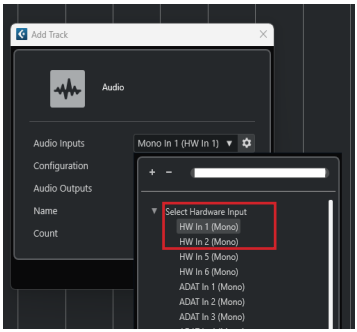
Test to ensure audio is received by iO Pro. This can be achieved by opening a video from YouTube or a similar application in your browser. When you play the selected video, you should see its audio signal in Loopback channels 1 + 2 in iO Pro by default, (reflected in the meters).

You *could* route the signal from the virtual channel (and other channels) in iO Pro to your DAW at this stage. These would be recorded by the DAW successfully.



Example: Cubase





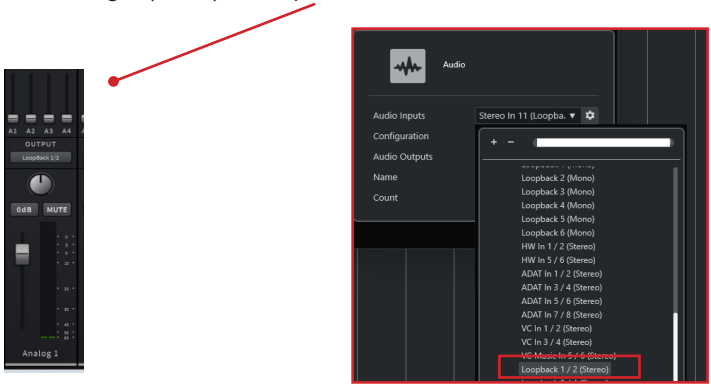
We can see that in Windows, you can route virtual channels and hardware channels such as mic inputs directly into a DAW, but using Loopback in iO Pro offers several advantages:

Loopback simplifies routing – instead of manually assigning multiple virtual channels in a DAW, Loopback automatically combines system audio and microphone input into a single stereo mix, making it easier to manage for streaming or recording.

Loopback works with non-DAW applications – some apps (e.g., Zoom, OBS, Teams) do not support multiple input sources, but Loopback lets you send both system audio and mic input as a single source without additional software.

In order to do this, route your virtual channel audio to a loopback channel. In this case, we will select Loopback 1/2.

We can also route any additional channels Loopback 1/2. In the example below, lets route Analog 1 (a mic) to Loopback 1/2.



We can now configure a track in our DAW with its input as 'Loopback 1/2' which will record 'all' of the signal as a stereo track, (i.e. virtual channel and mic channel) or accept Loopback 1/2 as our input source for various streaming applications, (see individual app instructions for details).

Scenarios

Let's take some real world examples and see how iCON iO Pro might be used for various tasks. Please note that there will most often be alternative routings available - the key 'take away' from these pages is 'experiment, and see what works for you!'. The idea is just to give you a flavour of what can be achieved.

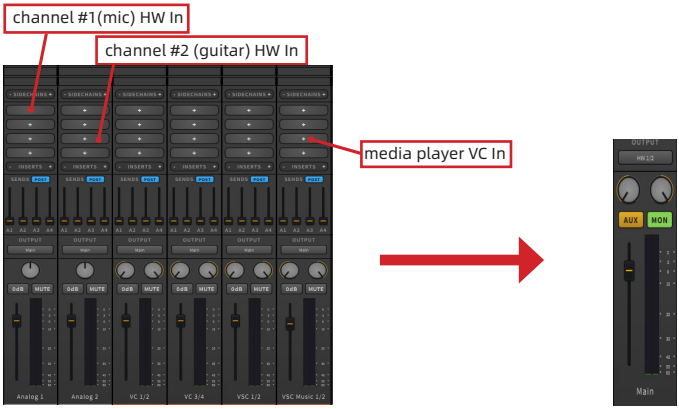
For Mac users, most of the following scenarios should be achievable by simply using the default settings. The exception is 'loopback' where the principles outlined in Scenario 9 are applicable. There is also a Mac specific scenario 7 regarding loopback.

In Windows, if using WDM software (i.e. WIndows Media Player as well as iO Pro, please load the WDM software first, before launching iO Pro). Please see the 'Virtual Channels & Mac and Win versions of iCON iO Pro' section for an explanation of WDM vs ASIO software.

Scenario 1: Basic setup for live work

Vocals and semi-acoustic guitar, with a backing track

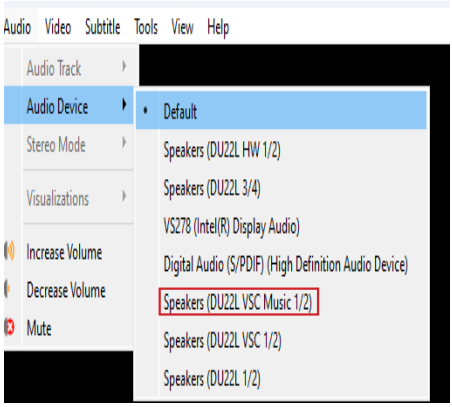
Helga wants to sing and play her semi-acoustic guitar (connected via wired output) along with a backing track to a crowd at a live venue. For this she has her iCON audio interface her laptop, and her iCON microphone. She plugs her mic into input 1, her guitar into input 2. She plays her backing track via a media player such as VLC or Windows media player. The mix she would need to employ may look something similar to this;



In this instance, the mic is routed via channel HW1, the guitar is routed via channel HW2 and the Media player is routed via virtual channel 'VSC Music 1/2'. For Mac users, they may wish to use a loopback channel as no virtual channels exist on the Mac OS version of iCON iO Pro. That is, if the user wishes to have individual control of the iO Pro channel on which the media player backing track is being played, (i.e. for the purposes of using EQ, compression, fader volume etc.).
Please note that the OUTPUT is routed in all cases to 'Main'. In this case, as would ordinarily be the case, the Main OUTPUT is routed to HW1/2 (OUT) i.e. the speakers.

In order to employ the output of a media player on a virtual channel, there are two possibilities in Windows. Some media players have adjustable settings within the program. Here, you can alter the output of the player and configure it to the virtual channel of your choice in the dropdown box.

For example, with the VLC media player, various options are available for output with the Duo22;



In this instance, we are using Virtual Channel 'VSC Music 1/2', so we will select this as the output for the VLC player. The signal from the player should then be inputted into the 'VSC Music 1/2' iO Pro mixer.

Given that three channels are employed, two physical and one virtual, the meters should look something like this;

Scenario 2: Advanced set up for live work

Plugins used for vocals and instruments

Continuing with our example from scenario 1, Helga now adds some plugins to her vocal channel to enhance her vocal performance. Please see the 'Allocating plugins' section for step-by-step instructions on how to do this.

In this example, Helga wants to add some EQ and compression to her vocals, using the Harrison 32 Channel plugin. She adds some 8k and 4k and uses the filters to remove 95Hz in order to smooth and sweeten her vocal. She adds some light compression and some subtle saturation. All of this is operated in real time with the user being able to directly access the plugin GUI's controls.

She can similarly add EQ and compression or whatever plugin to her guitar channel, (this could be a specific guitar-based plugin for example) and has the option of adding tape saturation, stereo widening plugins and so on to the virtual channel).

She can also add plugins to the Aux channels which will be universally applied to all channels according to the corresponding volume of the two SENDS channels.

Clicking any of the plug in blocks will result in the GUI being launched, wherein the user can alter parameters, the results of which can be heard in real time.

Scenario 3: Broadcasting to Social Media

Singing songs to a backing track on YouTube and broadcasting to a social media/streaming site.

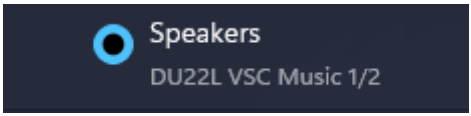
Ben would like to sing live to his favorite backing tracks on social media. This is how he might arrange it.

His backing tracks are all on YouTube on a Windows computer which complicates the matter somewhat as he has to route both the music from YouTube and his voice to iO Pro via his audio interface. Then, he needs to broadcast this to social media. This is how it is done.

Step 1:Ben ensures that iCON iO Pro is **not** running, (and checks which apps are running in the 'background' to ensure this).

Step 2: Ben loads YouTube in Chrome. He selects his backing tracks from the many available videos on the site. **Ben adjusts the settings in his social media/ streaming application, remembering that applications need to be set up before launching iO Pro.**

Step 3: As Chrome does not have an individual sound source setting that he can choose, he changes his Windows system setting to his desired 'virtual setting'. In this case, Ben chooses VSC Music 1/2;



Step 4: Ben launches his social media website and navigates and adjusts settings as appropriate.

Now, Ben can move on to iCON iO Pro to configure his settings.

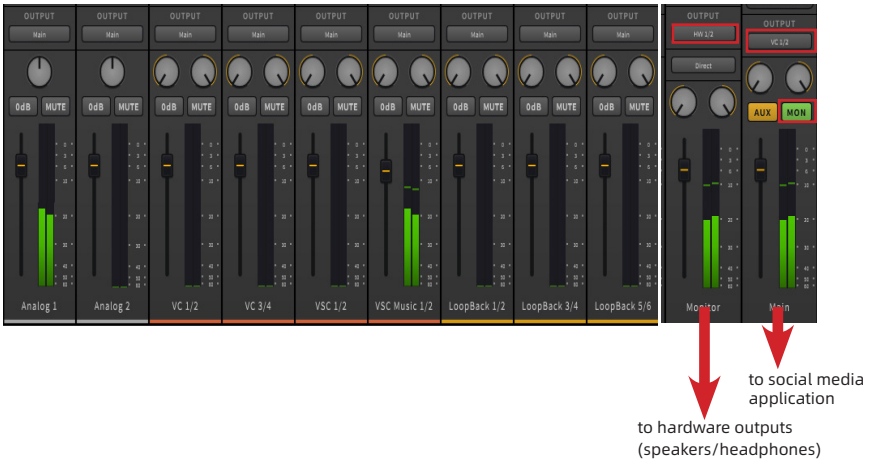
Step 5: He launches the iO Pro software with his set up as follows;

His microphone is connected via one of the XLR inputs on his device. This is represented by the 'hardware In' channels in iCON iO Pro. The meters are therefore activated here as we can see below.

The VSC Music is where he receives his YouTube signal. We can see the meters activated here too.

Both channels are routed to 'Main', (the main stereo out channel). However, we will switch the 'Main' output to VC 1/2 (virtual channel out 1/2), which we will feed into the social media application.

In order to monitor the signal effectively, we will choose HW Out 1/2 after we click 'Mon' (Monitor) and select HW 1/2 as its output. We can therefore, hear the output on headphones and also broadcast to his social media application via VC Out 1/2.



Scenario 4: Performing vocals in a Live Setting (YouTube or similar)

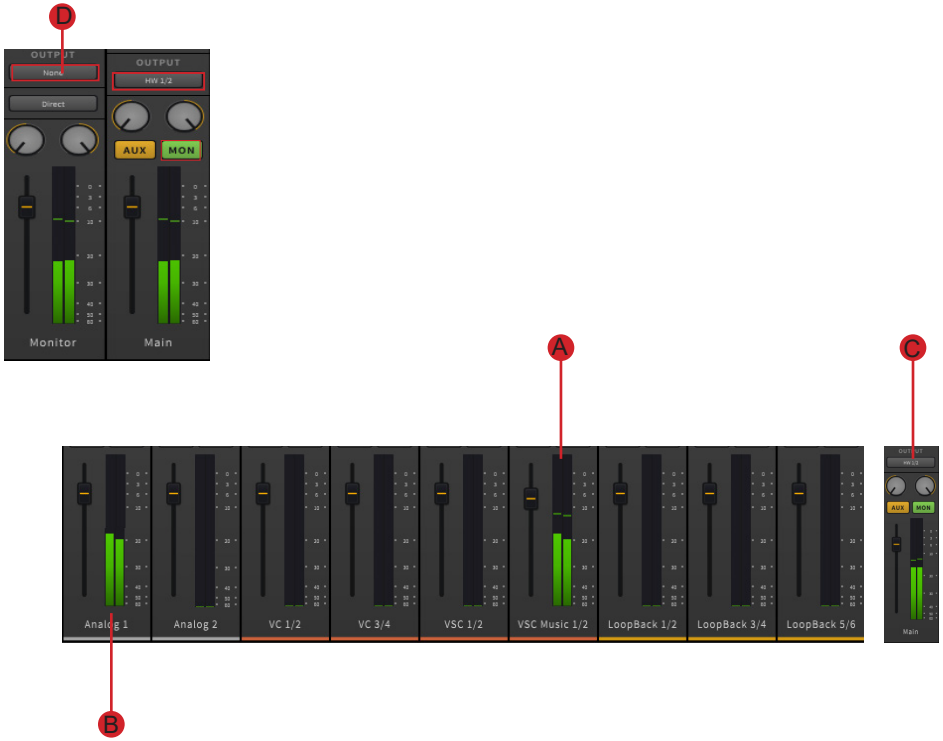
Karaoke-style performances live (vocals and backing track) using YouTube video (or similar website) as backing tracks

Sam wants to sing karaoke songs using YouTube videos as her backing tracks at a party she is hosting with her friends. She does not wish to broadcast this on social media as there is likely to be some questionable singing.

Having set her Windows sound setting to VSC Music 1/2 (A), she configures iO Pro as below.

As we can see, Sam has routed her Windows 'sounds' i.e. YouTube via VSC Music 1/2 (A). She has her microphone inputted via HW In 1 (B).

This means that both the mic and the YouTube backing will be outputted on the same channel - namely HW Out 1/2 (C). All channels are routed to the 'main output' which is HW 1/2 (C), which feeds directly to the L and R outputs of her audio device and are connected to her speakers. There is no need to monitor the signal in this instance and she has clicked the 'Mon' button to collapse the Monitor channel after selecting 'None' (D) in the output settings of this channel.

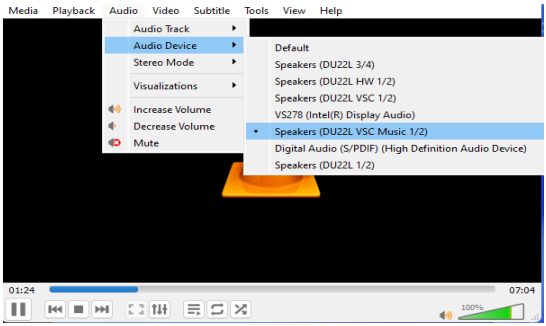


Scenario 5: Performing vocals in a Live Setting (Media Player)

Live performance of vocals and backing tracks played via a media player

Fred wants to sing live to backing tracks his band have created on a media player in order to practice for an upcoming concert. His media player of choice is VLC Media Player.

He will have his incoming music file routed via VSC Music 1/2. However, he needs to make sure iCON iO Pro can 'see' the incoming file from the VLC Player. As this is from a specific media player program which has it's own sound settings, he can adjust setting like so;



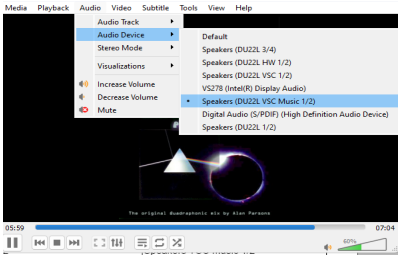
The configuration below, in iCON iO Pro should therefore work, if outputting to a pair of speakers or a PA connected to the interface;

We've used VSC Music as our example, but remember: it doesn't really matter how virtual channels are labelled - they are essentially all the same.

Scenario 6: Broadcasting vocal performances to Social Media (Media Player)

Singing live to a backing track from a media player and broadcasting live to a streaming application.

Fred wishes to broadcast his vocal "skills" to the world via a streaming social media platform. He chooses 'Speakers VSC Music 1/2' in VLC Player and sets up his iCON iO Pro in exactly the same way as Scenario 5.



HW Out 1/2 is routed to the speakers and headphones. VSC Out 1/2 will be routed to the streaming platform. Fred adjusts the settings in his streaming platform in order to facilitate this, (see the social media app's instructions for how to route incoming audio).

Scenario 7: Setting up OTG for recording a music video or streaming to social media using an Android (14) phone (using a computer, computer media player and microphone).

Please note that some phones do not have OTG functionality - please check with your manufacturer. Additionally, please also note that some social media platforms and phones do not allow external mics to be used and some may require further software and/or processes to enable OTG.

iPhone users

In most cases, an iPhone will automatically detect the OTG connection and external mics. Please check compatibility with cables/adapter before purchase. Contact Apple Support for assistance if required.

You will require:
Apple Lightning to USB Adapter or USB-C to USB Adapter (depending on your iPhone model).

For Lightning iPhones: Use the Apple Lightning to USB 3 Camera Adapter (preferred, as it allows for power pass-through).

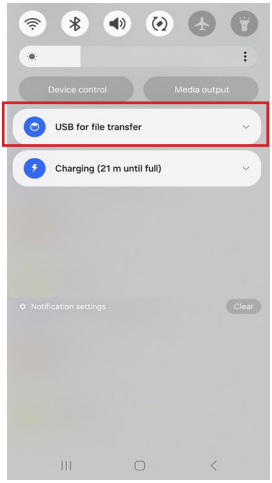
For USB-C iPhones: Use a USB-C to USB Adapter.

Android users

In this scenario, Susan has a Samsung A55 5G phone which uses Android 14. She wishes to sing a song to a backing track and broadcast this live to social media and later, record a similar performance to the video camera app on her phone. Whilst other Android phones may be similar, they may not be exactly the same. Therefore, the following is provided as a general 'rough guide' and not prescriptive advice.

As the process is a little complicated, a brief visual rough guide of the steps Susan takes follows.

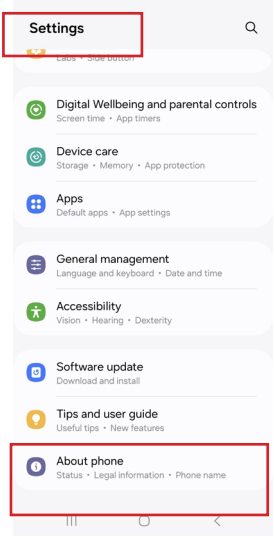
Step 1 (Android 14):



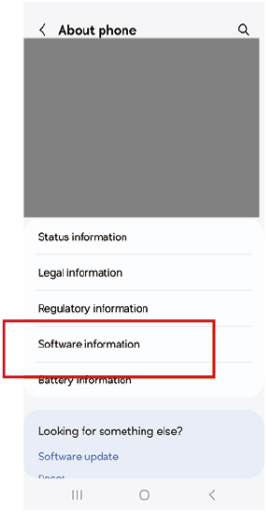
To enable OTG she must ensure that her USB-C port's default setting is 'File Transfer'. She swipes down on her phonescreen to notifications whilst charging her phone and can determine whether her USB port defaults to this setting by the notifcation 'USB for file transfer'.

If this is not enabled, she must activate 'Developer options'.

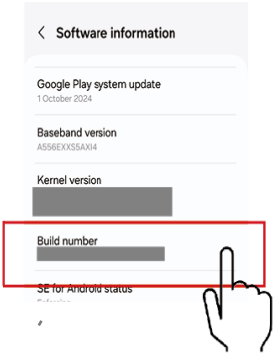
Please be aware that after the task is completed, 'Developer options' should be disabled to mitigate security risks, potential data loss etc. **Making any changes to your phone in this mode can potenitally lead to unintended device behaviour and it is recommended you only use this mode when absolutely necessary.**



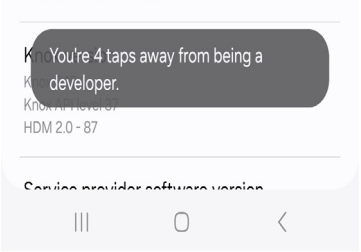
Let's assume that Susan's phone does not have USB for file transfer enabled. She follows the following process to enable 'USB for File Transfer'.



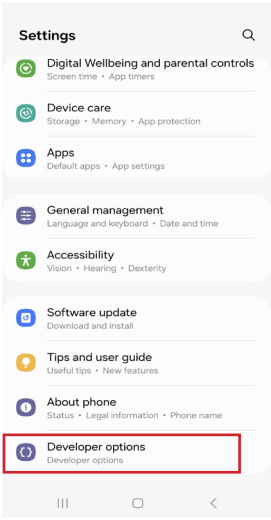
Susan selects 'Software Information'.



On this page, Susan can see she can see the build number of her phone. Susan presses this 7 times.



After 3 presses, this warning appears.

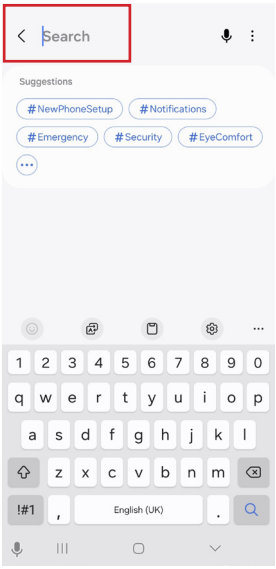


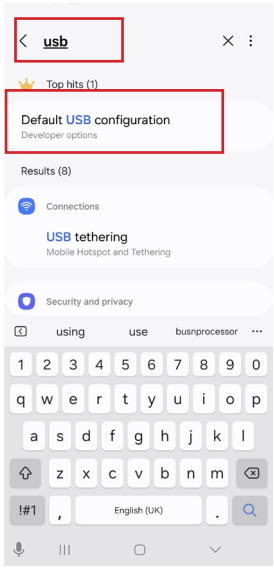
She enters her pattern, PIN or password to enable the 'Developer options' menu.

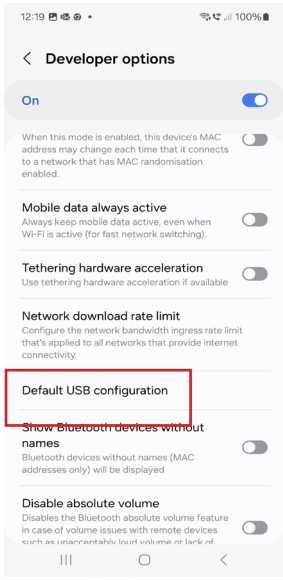
She navigates to 'Developer options', which now appears in the main 'Settings' menu.

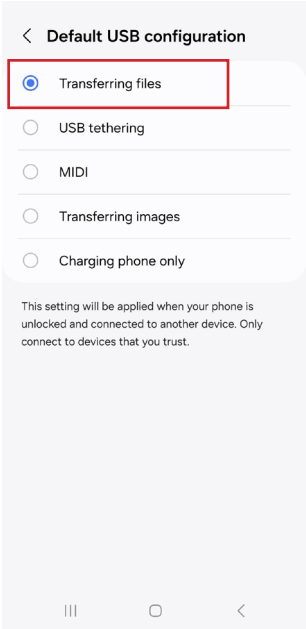
Susan types 'USB' into the search bar. From the search results, she selects 'Default USB configuration' from the possible choices.

She then selects 'Default USB configuration' again from the results, (overall selecting 'Default USB Configuration' twice).



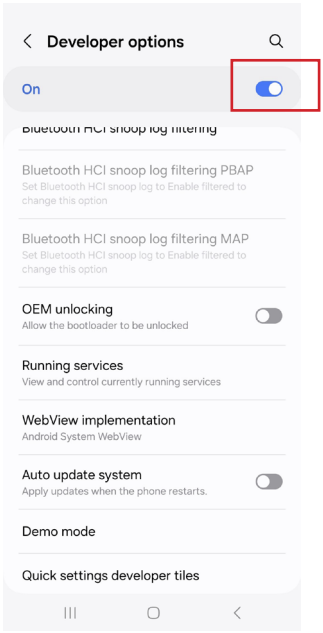


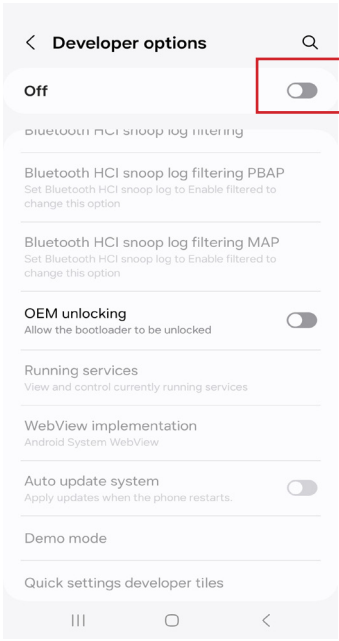




Susan selects 'Transferring Files' from the possible choices.

She navigates back to 'Developer options', selects it, then selects 'Off' at the top of the page.





Step 2 (Android 14):
Susan has enabled the USB port to receive 'information', but she still has to enable the phone to use external microphones via the USB-C port.

Susan navigates to 'Settings'. She selects 'Advanced Features'.

She scrolls down and selects 'Screenshots and screen recordings'.

She then selects 'Record sound'.

She selects 'Media and Mic' and closes Settings.

Her phone is now enabled to use external Mics and receive an OTG signal. As this is an Android phone, similar android phones are likely to have equally similar navigation.

Step 3: Setting Up iO Pro
Susan has set up iO Pro software, her iCON Pro audio interface, her microphone and backing track as outlined in 'Understanding OTG (On-The-Go) for High-Quality Audio Streaming and Recording' (Pg 55).

To re-cap:

Susan has a microphone as her first hardware input (Mic 1/Analog 1) on her audio interface. For the purposes of this example, lets say she is using a 32Ci device as pictured below.

She inserts her condenser mic into the XLR port Mic 1.

Susan is using a PC. She changes the sound settings on her computer, so that the backing track which she will play on her Windows Media Player is played via a 'virtual' channel and will therefore be recognized by the iO Pro software. Mac users need not worry about this, but Windows users do, as WDM software (i.e. domestic type software like Windows Media Player) needs to be converted to ASIO software (professional audio grade software) in order to be recognuized by iO Pro.

In this case, Susan changes the 'Speakers' soundsetting to VC 1/2 (Virtual Channel 1/2). Once changed, the signal for the Media Player should appear in iO Pro. Equally, the signal for her microphone will also be viewable, (regardless of the changes she has just made).

Susan can add various plugins to her channels which will affect the output of the signal. In this case, Susan decides to use an EQ, compressor and a touch of iCON's own iReverb on her vocal channel, (Analog 1).

Now, Susan needs to route the media player and microphone signal so that they are not only recognized by iO Pro, but by her phone as well.

She sets up her OTG cabling arrangement - typically an OTG adapter and very high quality, OTG capable USB lead to her phone from the OTG port on the 32Ci, (some ports on devices are labelled as UNI OTG - this indicates extremely high speed, high quality OTG connectivity - the 32Ci has this, but only 'OTG' is printed on the device).

She then routes her Analog 1 and V/C 1/2 channels to OTG;

At this point, the signal is transmitted through the OTG connection on the 32Ci to Susan's phone. However, she will most likely not be able to hear the signal. In order to 'monitor', the signal, Susan decides to use AUX channel 1.

She activates her AUX visibility setting on the master channel and adjusts the A1 mini faders on both her Analog 1 and V/C 1/2 channels, which results in the AUX 1 channel becoming active and reflecting the outgoing OTG signal.

Step 4: Broadcast to social media and Video recording app

- She sets up her social media app to broadcast live and proceeds when ready, (this should be relatively straightforward for many apps).

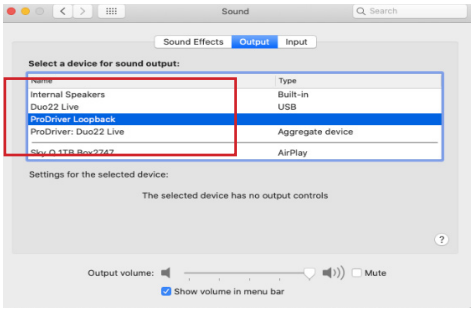
- Later, Susan sets up her phone video camera app and presses record when ready. The audio content will be sourced from the OTG signal.

Scenario 8: Recording Live Performances to a DAW (Mac)

Using the Mac specifically to record a vocal and backing track from YouTube direct to a DAW using loopback

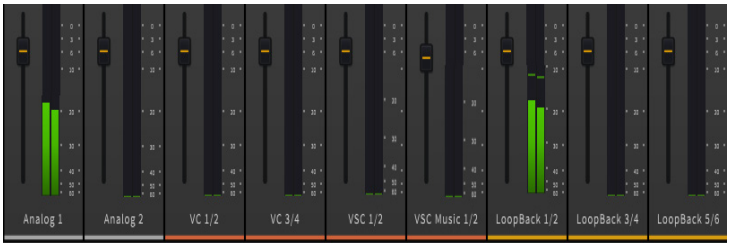
Raj wants to record his vocals and a backing track from YouTube to a DAW (in this case, Reaper) on his Mac. For this, he can regard his 'loopback' channels as 'virtual' channels in iCON iO Pro.

First, he goes to his sound settings. He selects 'loopback' in his outputs.



He checks to see that the YouTube audio is being received by iCON iO Pro as well as making sure he routes the loopback into his HW Out so he can hear on headphones and his speakers.

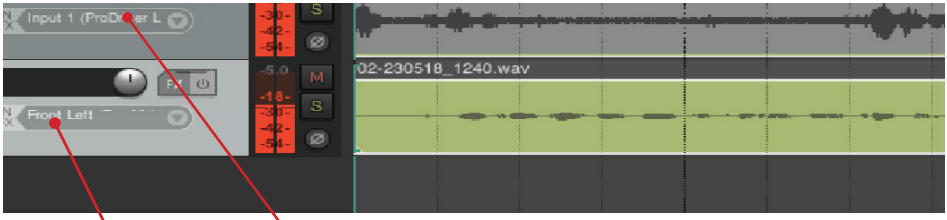
He also ensures he has routed his mic via HW In 1 and can see that it is reflected in the metering. He also routes this to HW Out 1 so he can hear on his headphones and through his speakers.

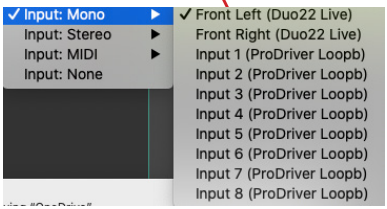


Tip: Using headphones eliminates the possibility of feedback when recording live vocals (as it removes speakers from the equation).

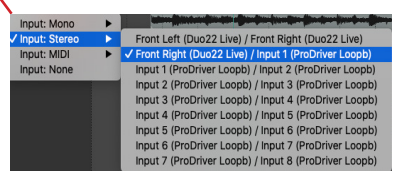
Raj now goes to his DAW, Reaper.

He allocates the relevant outputs of iCON iO Pro to the tracks in Reaper and groups the tracks together before recording both sources at the same time;





The vocal



YouTube Audio

Note: In Reaper, you must 'record arm' the tracks before you can allocate inputs for each track.

Raj can now record his vocals to his favorite YouTube audio and can be mixed later.

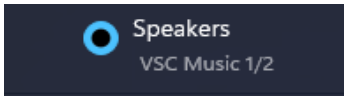
Scenario 9: Recording streaming applications to a DAW

Using Loopback to record an Interview on a streaming app and recording this on a DAW on separate channels

Loopback can be used to, for example, record system audio from web applications back into your DAW. This is useful for recording interviews etc. on streaming apps or recording a vocal to a YouTube karaoke track. It is very similar to a virtual channel. However, for the benefit of explaining how loopback works in simple, practical terms please read on.

Helen is going to interview a politician on a streaming app for her podcast. The interview will be pre-recorded and played back during her live broadcast.

Helen sets up her system audio first, opting to use the virtual channel VSC Music for her system audio setting;



Here, we can see that Helen has routed her system audio (which is set as VSC Music 1/2) via Loopback 1/2 (A).

The signal travels to the Loopback 1/2 channel, which is routed to 'Main', (B).

Main is routed to HW 1/2, (C).

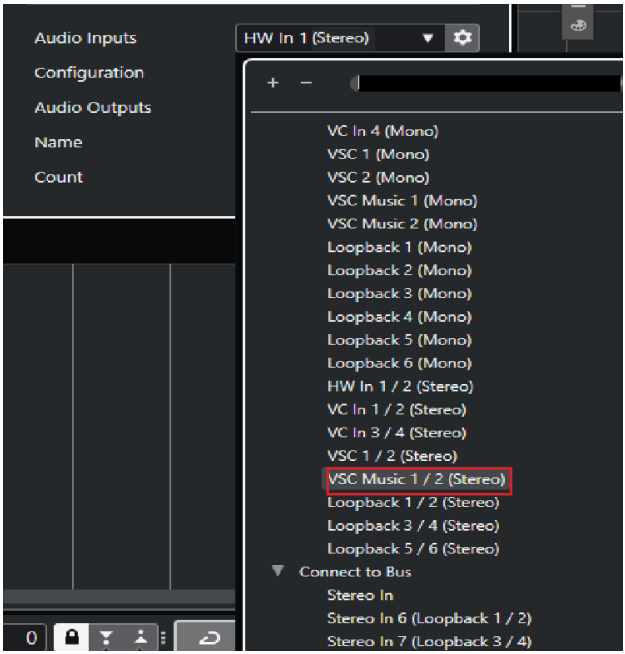
In order to route the Loopback 1/2 channel to HW 1/2, Helen could also have simply selected HW 1/2 in her output selector drop down box (D).

Helen now goes to her streaming app and adjusts her settings.

She selects VSC Music 1/2 as her speaker output in her streaming app, which is the same as her system audio settings and the same as her selected source in iO Pro.

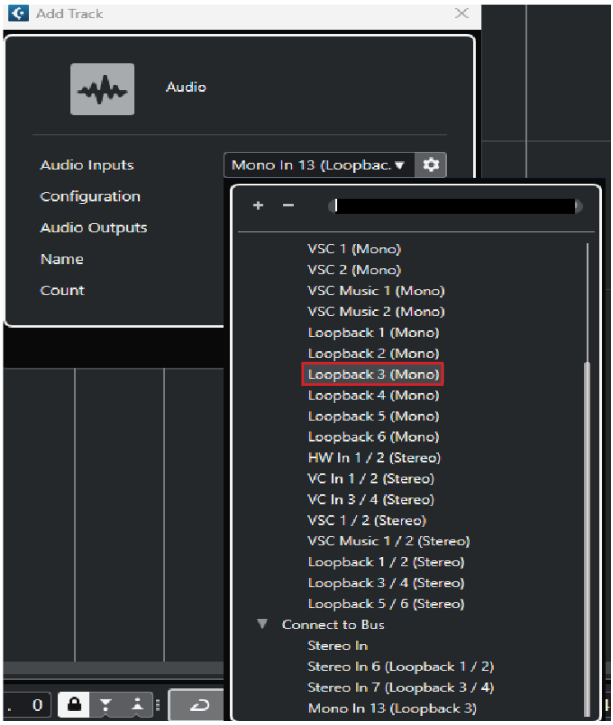
Now, Helen needs to set up her DAW. In this case, she wishes to record the interview in Cubase.

Helen configures each track she is recording on. The first, a stereo track, will record the system audio. She configures it as shown below.

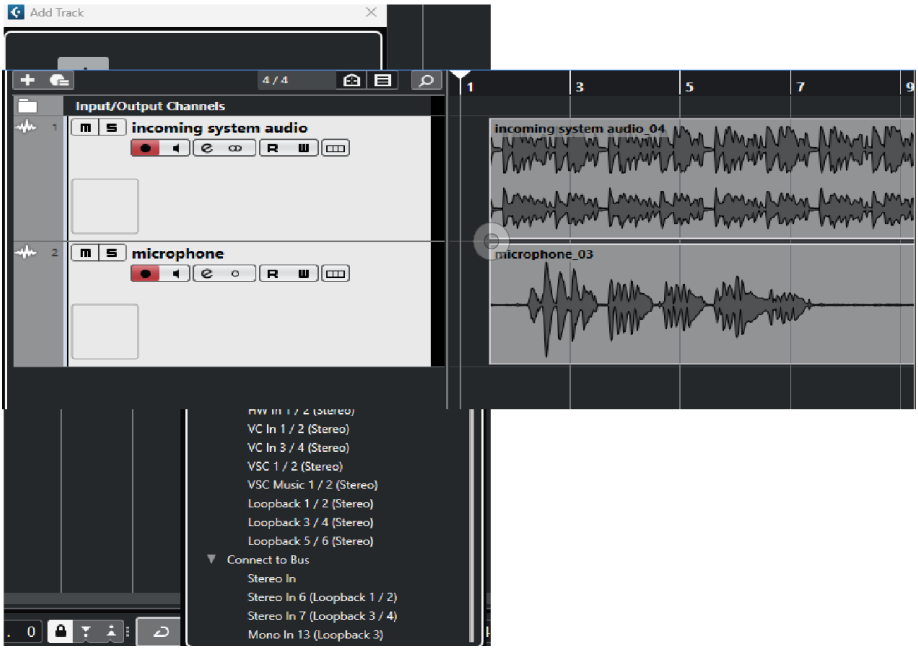


The second track Helen is going to add, is going to record her voice - so the input will be HW In.

This will be a mono track as she is actually only using loopback 3 (not 4), because it is a single microphone on a single channel and therefore mono. It looks like this;



Helen allocates both channels to record together and checks the signal.

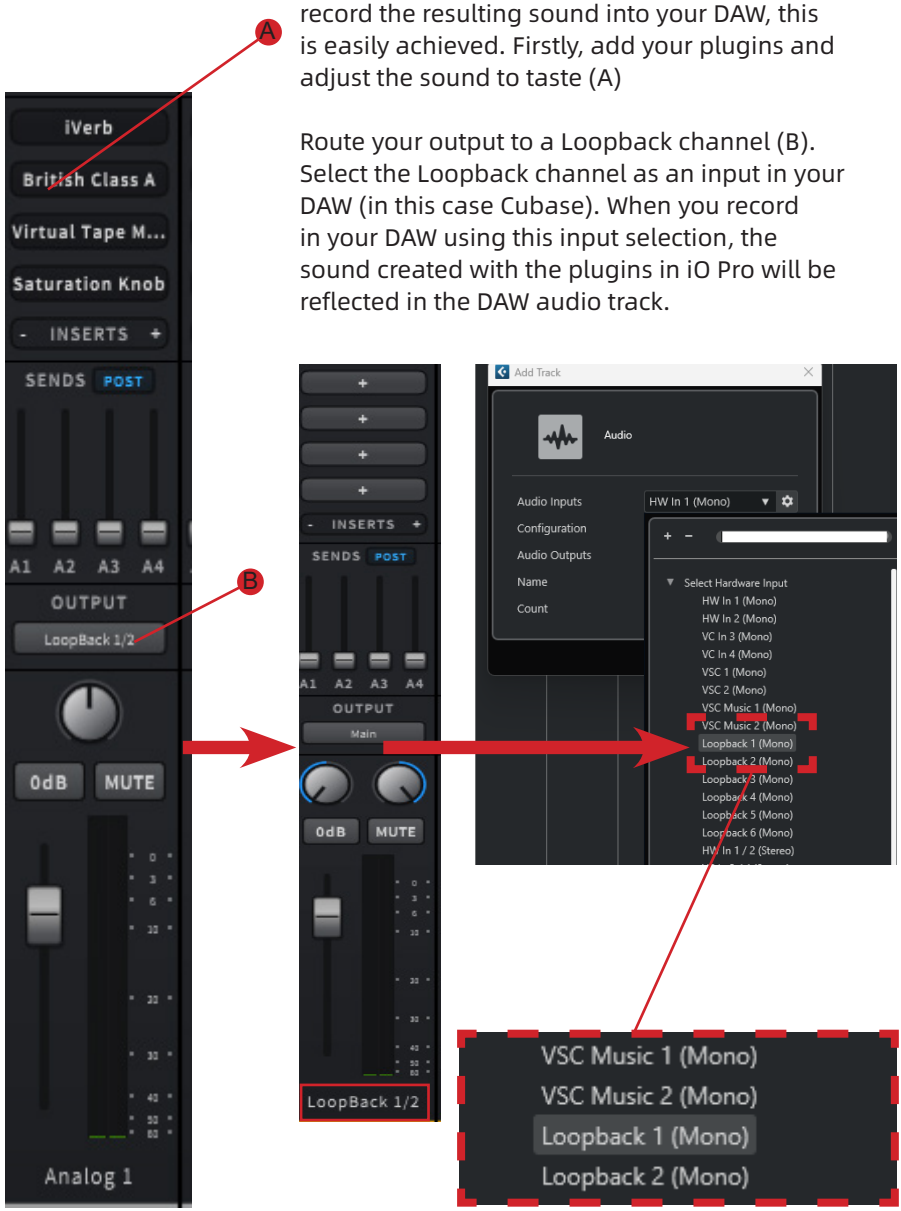


The configuration in other DAWs may differ slightly in respect of the how this procedure is set up. However, the principles will remain largely the same.

Scenario 10: Using plugins in iO Pro and recording to a DAW

Should you wish to use iO Pro with plugins and record the resulting sound into your DAW, this is easily achieved. Firstly, add your plugins and adjust the sound to taste (A)

Route your output to a Loopback channel (B). Select the Loopback channel as an input in your DAW (in this case Cubase). When you record in your DAW using this input selection, the sound created with the plugins in iO Pro will be reflected in the DAW audio track.



All of the scenarios explored over the last pages should give you a good idea of how to explore various options within iCON iO Pro. It is likely that the exact configuration of what you would like to achieve is a derivative of, or similar to, the examples provided.

iCON iO Pro is a simple to use, intuitive piece of software - as always, experimenting and seeing what is achievable for your own specific requirements is key.

Windows users are reminded that WDM software should be launched first, before iO Pro when implementing media players etc.

Support

If you have issues with your copy of iO Pro, please read the FAQ/ Troubleshooting section in the manual and then check our online Help Center at

http://support.iconproaudio.com, for resources such as FAQ and video tutorials.

Most often you will find solutions on these pages. If you don't find a solution, create a support ticket at our online Help Center at the link below, and our technical support team will assist you as soon as we can.

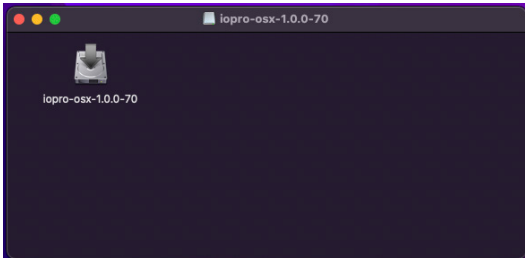
Navigate to **http://support.iconproaudio.com** and then sign in to submit a ticket.

Once you have submitted an inquiry ticket, our support team will assist you in resolving the issue.

Appendices

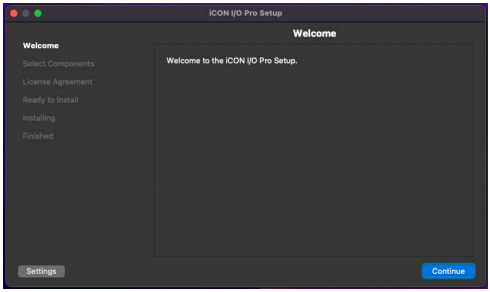
Appendix 1: Mac driver installation

1. **Connect your device - the intended hardware interface must be connected first before running the iCON iO Pro installer. The installer will identify the device first, then download the appropriate drivers, (you must be connected to the internet when installing iO Pro). Now, download iCON iO Pro (Mac) from your "User Center" page for your audio interface. It will also be available from the product page of your audio device in the downloads section.**
2. **Double click the file that you just downloaded from your iCON User Center, (please note that the version of the file will update over time).**

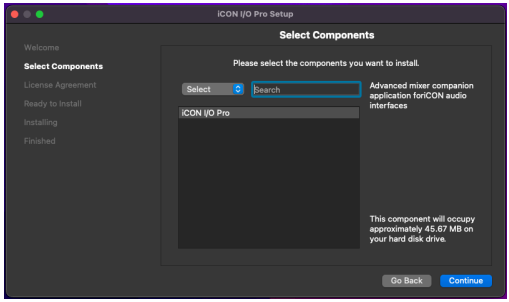


3. **Double click the icon to start the iCON iO Pro installation.**

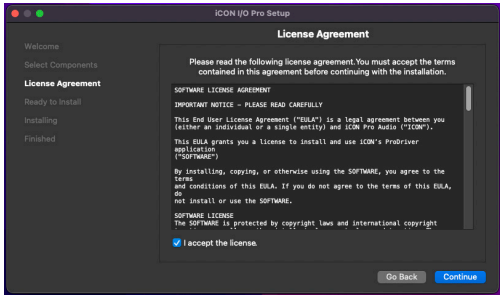
4. Click "Continue"



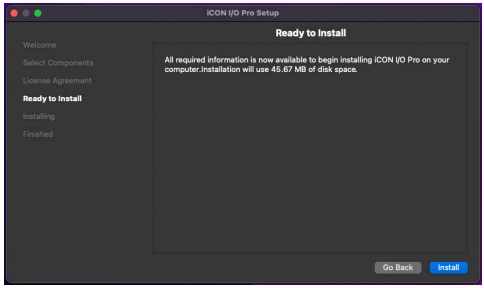
5. Click "Continue"



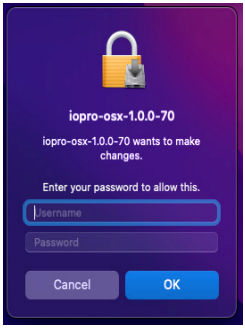
6. Read the license agreement carefully. Click "I accept the license" and click "Continue" to start the installation



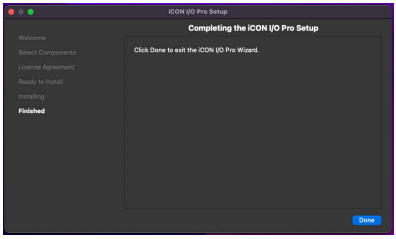
7. Click 'Install'



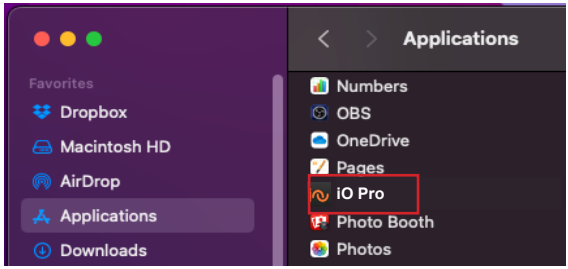
8. Input your password or tap your finger print to start the installation. Click "Install"



9. Click 'Done'



10. iCON iO Pro appears in your 'Applications folder'. Launch the program.



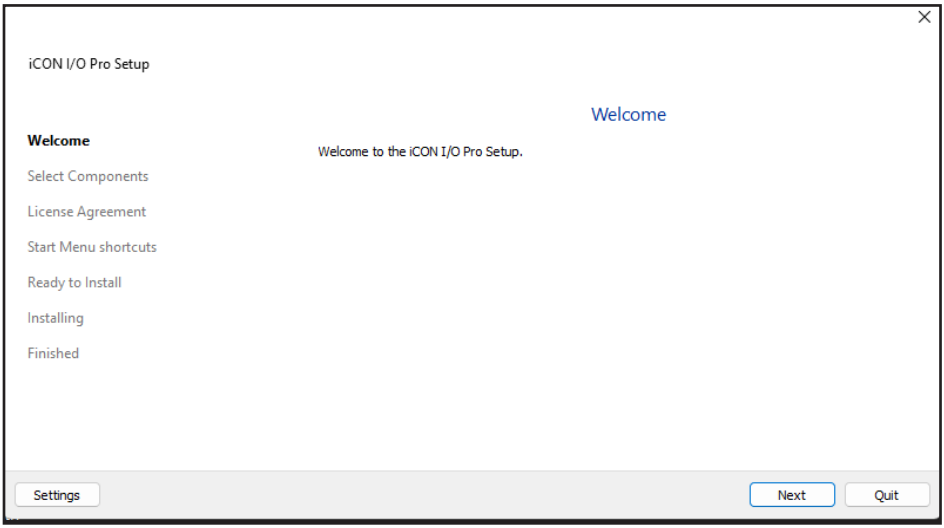
Appendix 2: Windows driver installation

Please follow the step-by-step procedures below to install the iCON iO Pro software.

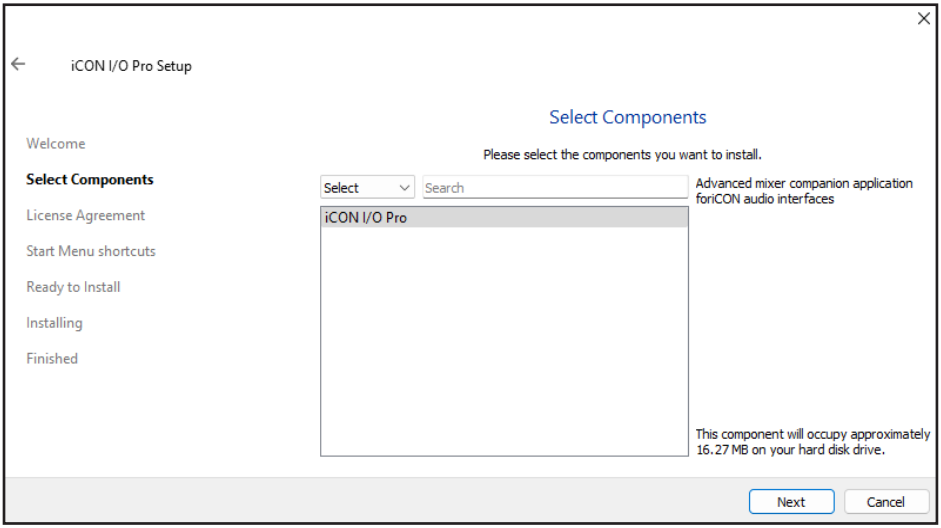
1. **Turn on your computer & ensure the intended hardware interface is connected first before running the iCON iO Pro installer. The installer will identify the device first, then download the appropriate drivers, so please ensure you are connected to the internet. iO Pro will also be available from the product page of your audio device in the downloads section.**
2. **Download ICON iO Pro from your "User Center" at www.iconproaudio.com or the product page of your audio interface device. It will also be available on the downloads page of your audio interface product page at www.iconproaudio.com**

After you have downloaded the file, please click it to start the installation process.

3. Installation Wizard appears
Click next.



4. Select Components
Select the components you would like to install. In this case, it is ICON iO Pro.

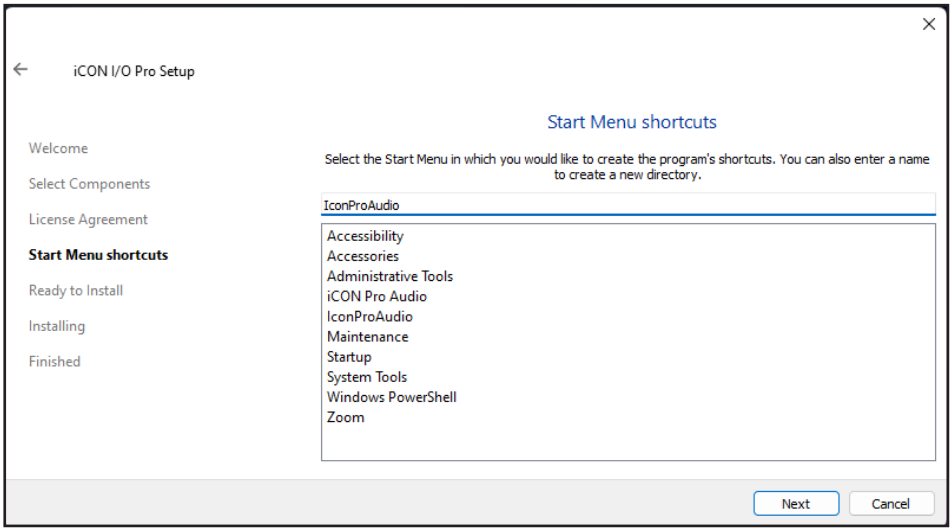


5. License Agreement

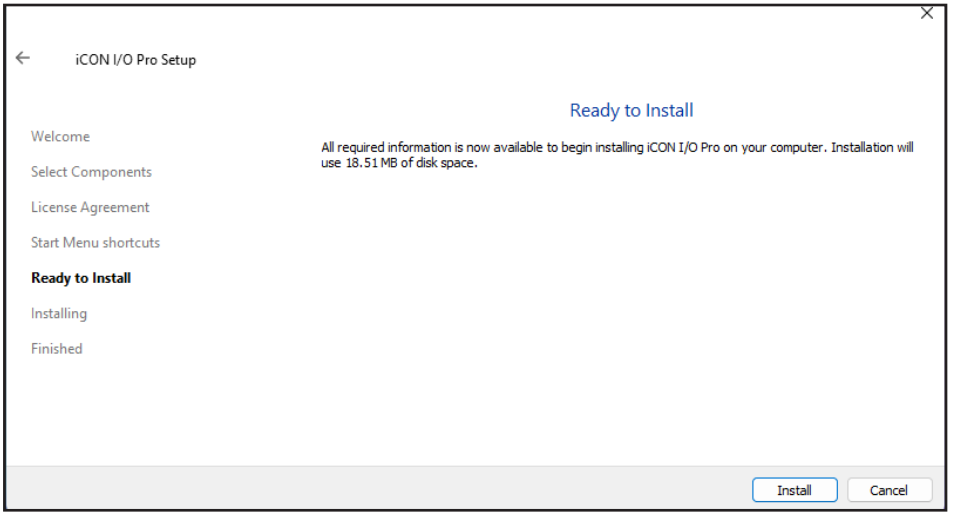
Read the license agreement carefully, then click 'I accept the license' and 'Next' to proceed.

6. Start Menu Shortcuts

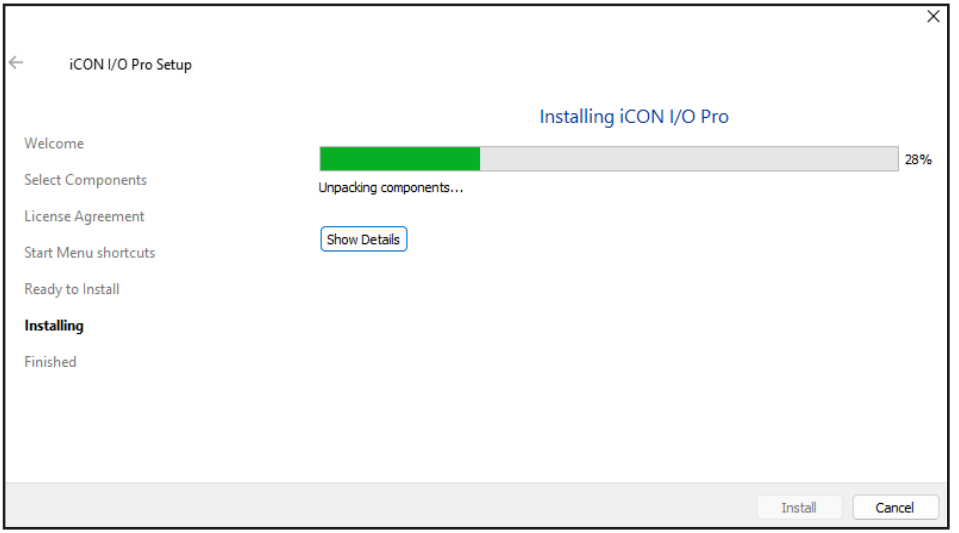
Select where you would like to place ICON iO Pro's shortcuts.



7. Ready to Install
Click 'Install' to install ICON iO Pro.

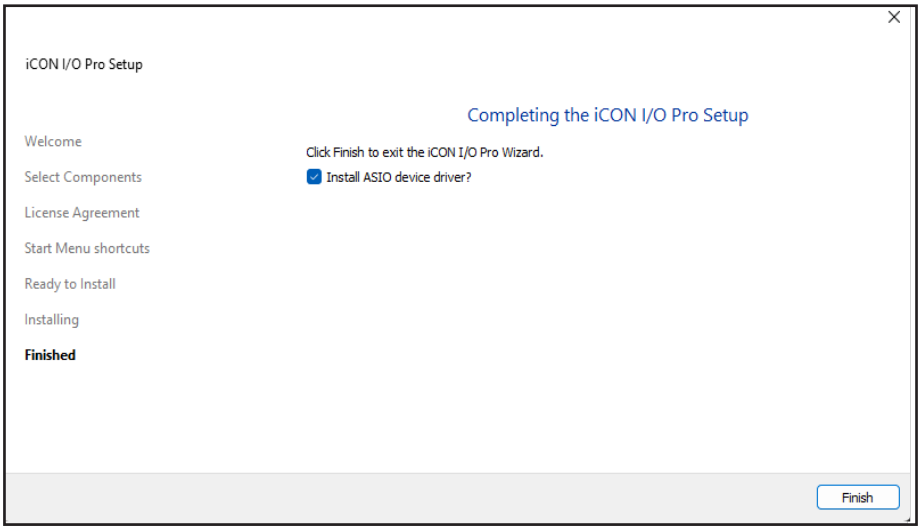


8. Installation
ICON iO Pro will install

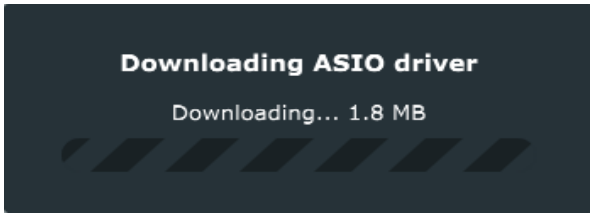


9. Install the ASIO driver

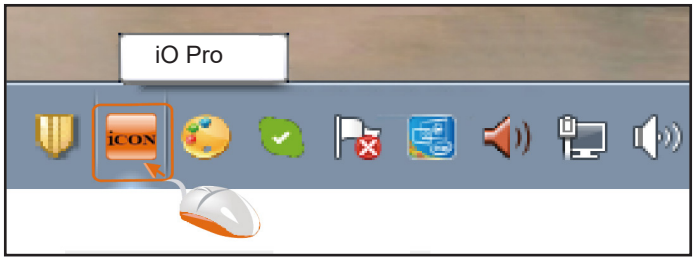
Click the box and then 'Finish'



10. The ASIO driver installs



11. Launch ICON iO Pro via shortcuts or the start menu



Appendix 3: FAQ + Troubleshooting

I am having issues with setting up configurations such as those described in Scenarios 4, 6 & 8, (i.e. that use both ASIO and WDM software)

Windows machines utilise two types of driver, ASIO and WDM. WDM is generally used in Windows 'domestic' products such as streaming programs, media players and so on. ASIO is used for more 'professional' software such as DAWs and iCON iO Pro.

iCON iO Pro uses ASIO, so must 'convert' WDM signals to ASIO signals using 'virtual' channels.

If you are having issues setting up configurations such as those described in scenarios 4,6 & 8 (i.e. those that employ both WDM and ASIO software), please ensure that WDM software is running before ASIO software is launched (including iCON Pro iO) and that you launch iO Pro last.

I am still experiencing issues with setting up more complex configurations using ASIO and WDM software

If you are still experiencing issues, please ensure you close all software, saving any settings you wish to retain, (please beware of software that appears closed, but is still open in the background - this can cause issues).

Once you are certain all relevant software is closed, please relaunch the WDM software first and set up it's WDM audio.

Now start the ASIO applications, with iCON iO Pro launched last.

Am I required to use iCON iO Pro in order to use my audio interface?

No. iO Pro offers various routing possibilities and allows you to use plugins, virtual instruments etc. separately from your DAW. It is useful in that you may download the latest driver/firmware etc. via iO Pro, but it is **not** a requirement to run this software in order to use your audio interface. It **is** a requirement to run iO Pro to install the ASIO drivers in Windows, however. You can simply download and install the relevant firmware/drivers for your device and close iO Pro if you have no need for it.

I enjoyed the workflow of the 'Rack Window' in Pro Driver 4. Is there similar functionality within iO Pro?

Yes! Our development team have worked hard to retain this functionality within the new software, for those that enjoyed this and found it useful. Please refer to the section entitled 'Patch'.

iO Pro has not loaded the mixer desk GUI (graphic user interface)

Please ensure that you connect the USB cable from your device to your computer, *before* running iO Pro. Additionally, the 'mixer' and 'float' options may not be selected, although the program may still be running 'in the background'. In this case, please check your task manager/task bar.

I can't install the appropriate mixing desk GUI for my device in iO Pro

Please note that the intended hardware must be connected *first* before running the iO Pro installer. The installer identifies the device first, then is able to download the appropriate drivers.

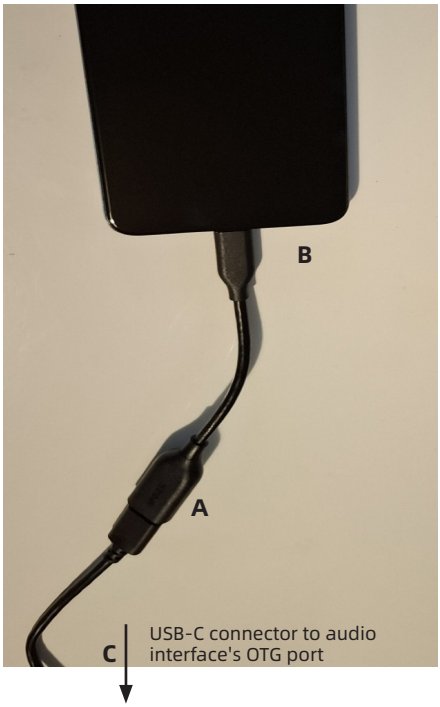
Appendix 4: OTG Troubleshooting

If your OTG connection does not function correctly, please check that;

- Your phone is compatible with OTG (most smartphones manufactured from 2020 onwards are).
- Your phone has been properly configured for OTG. Most Apple phones are pre-configured for use with OTG, but some Android phones need to be configured. You may wish to contact your phone manufacturer's support service for documentation specific to OTG as every model and manufacturer is slightly different.
- You have connected the cables correctly.

It is often the case that an OTG compatible single cable (USB-A to USB-C) is used together with an OTG adapter.

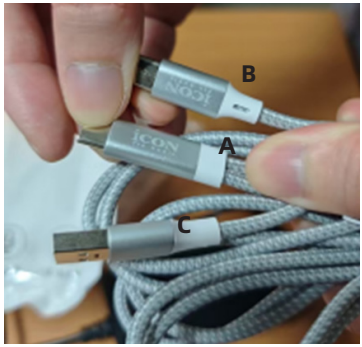
In this case, make sure that the USB-A end of the OTG compatible USB cable is connected to the OTG adapter (A). The OTG adapter's USB-C connector should be plugged into the phone (B) and the other USB-C connector should be connected to the audio interface (C).



It is important to remember that a standard USB cable will not work with OTG - an OTG compatible cable *must* be used.

Please note that if using a "Y cable", the two USB-C connectors are slightly different;

The end where two cables are combined into one (A) is for connecting to the phone/OTG adapter, the other end with a Type-C connector (B) is for connecting to the OTG socket of the audio interface, and the USB end (C) is for connecting to a charger to power the phone.



How to know if the OTG connection is successfully established:

After the phone is successfully connected, when you play music or videos on the phone, the sound is not transmitted out of the phone's speakers.

What to do if the OTG cannot be connected (and the sound is coming out of the phone's speakers)?

Problem 1: Incorrect connection. *Solution:* Make sure the connection is correct.

Check with your phone's manufacturer's instructions/support team for specific advice on your phone's make and model if necessary.

Problem 2: The OTG switch is not turned on. *Solution:* For certain Android brands, such as OPPO and VIVO, you need to enable the OTG switch in the phone's settings before connecting the OTG cable for it to work.

Check with your phone's manufacturer's instructions/support team for specific advice on your phone's make and model regarding switching on OTG functionality.

Problem 3: The sound still comes out of the phone's speakers even after correctly connecting and repeatedly plugging and unplugging the OTG cable.

Troubleshoot: Try using a different phone or OTG cable/adapter to find which one is faulty. Contact your phone manufacturer's support team.

Appendix 5: Glossary

ADAT (Alesis Digital Audio Tape) – A digital audio transfer protocol that allows up to eight channels of audio to be transmitted over a single optical cable. Used for expanding audio interface inputs and outputs.

ASIO (Audio Stream Input/Output) – A low-latency audio driver standard for Windows that allows professional audio software to communicate efficiently with audio interfaces.

AUX Channels (Auxiliary Channels) – Additional channels used for routing effects and plugins to multiple tracks. Commonly used for global effects like reverb or delay.

Buffer Size – The amount of time allocated for the computer to process an audio signal. Smaller buffer sizes reduce latency but increase CPU load, while larger buffer sizes reduce CPU strain but increase latency.

DAW (Digital Audio Workstation) – Software used for recording, editing, and producing audio files, such as Cubase, Ableton Live, or Pro Tools.

H/W In (Hardware Input) – Physical audio input channels on an audio interface, such as microphone (XLR), instrument (1/4" jack), or line inputs.

H/W Out (Hardware Output) – Physical audio outputs on an audio interface, such as speaker outputs, line outs, or headphone outputs.

Hotkeys – Custom key commands used to trigger actions such as playing "Stinger" sound effects (using the computer keyboard)

Insert Slots – Locations in a signal chain where plugins (such as EQ or compression) can be added to individual channels.

Latency – The delay between an audio signal entering a system (e.g., a microphone) and its output (e.g., through speakers or headphones).

Loopback – A feature that allows the internal routing of audio signals within software, often used for recording system audio back into a DAW.

Main (Main Output) – The primary stereo output bus where all channels are summed before being sent to speakers or an external audio device.

MIDI (Musical Instrument Digital Interface) – A protocol that enables communication between electronic musical instruments, computers, and audio devices.

MON (Monitor) Control Switch – A setting in iO Pro that controls the visibility and routing of monitor channels.

OTG (On-The-Go) – A feature allowing mobile devices to connect directly to USB peripherals, such as audio interfaces.

Pan Control – Adjusts the placement of an audio signal in the stereo field (left or right).

Patch – A feature in iO Pro that enables complex routing and plugin chaining for advanced signal processing.

Sample Rate – The number of samples of audio carried per second, measured in kHz (e.g., 44.1kHz, 48kHz). Higher sample rates provide better sound quality.

Send Channels – Channels used to route a portion of a track's audio signal to an auxiliary effect, such as reverb or delay.

Sidechain – A technique where the level of one audio signal is controlled by another, commonly used in dynamic processing like compressors for effects such as "ducking."

Snapshots – Saved configurations of a project that can be recalled later for different setups.

Streaming Buffer Size – The temporary storage amount for streamed audio data, helping reduce interruptions from slow connections.

VC/VSC (Virtual Channels / Virtual Sound Card Channels) – Software-based audio channels used in Windows to bridge system audio and ASIO environments. They allow playback of system audio (e.g., from a media player) through iO Pro for further processing and routing.

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