

RESPIRO

Wind-Synth for iOS

© 2017 – 2021 All rights reserved to Rudy Verpaele BVBA Imoxplus BE 0886 809 533

Developed in partnership with NUSofting – Luigi Felici; and JB audio– Jelle Bakker

Inspired by Pedro Eustache

Nothing in this manual may be copied or reproduced without expressed permission from Imoxplus.

TABLE OF CONTENTS

INTRODUCTION.....	3
ABOUT RESPIRO FOR MAC /WINDOWS.....	4
MIDI CONTROLLER OPTIONS	5
INITIAL SETUP.....	7
CONTROL MODE.....	9
MULTIPLE INSTANCES, ENSEMBLE POLYPHONY, NOTE QUEUE.....	11
VOLUME AND REVERB.....	12
PITCH-BEND INDICATOR	12
BROWSING INSTRUMENTS/VARIANTS	13
TRANSFER LIBRARY TO iOS DEVICE	14
COMPATIBILITY BETWEEN PLATFORMS	16
CONTACTS / ACKNOWLEDGEMENTS	17

INTRODUCTION

Respiro Wind-Synth is a monophonic virtual instrument for iOS that uses advanced physical-modeling, wavetable synthesis, and signal-processing to produce the dynamic tone and expressive behavior of woodwind, brass and other instruments.

This free iOS standalone app and AUv3 plugin includes six fully functional instruments with no ads or "nags". After making a few settings, you'll be able to use an on-screen keyboard or your MIDI controller to play the included sounds.

The user interface (UI) is simple, with only essential settings, and no editing features. However, under the hood it contains the full Respiro modeling engine.

In addition to providing a fully useable demo of Respiro, this iOS app and plugin is also designed as a companion "player" app for owners of the paid Mac/Windows version of Respiro. A selection of your favorite instruments and variants can be transferred from the Mac/Windows version to the iOS version. These instruments and variants play with their same sound, features, and response on your iOS device for more portable live performance, and mobile music production.

This manual will guide you through the features, settings and options to get the most out of this powerful instrument.



ABOUT RESPIRO FOR MAC/WINDOWS

Respiro for Mac/Windows is the paid version of the virtual instrument which includes a standalone app, as well as 64-bit AU and VST3i plugins.

Respiro allows musicians, composers and producers to explore a wide array of new and expressive sonic timbres. The sounds can range from traditional to wildly experimental. Though Respiro is not designed to replicate any specific acoustic instruments, it provides a massive variety of richly dynamic timbres that sound and behave like real physical instruments.

Respiro uses complex modeling that faithfully renders many aspects of real wind instruments. Imoxplus developers have crafted and fine-tune a wide variety of instruments and variants. Each has been adjusted note-by-note to sound natural and to respond musically, evolving smoothly across a wide range of pitches and dynamics.

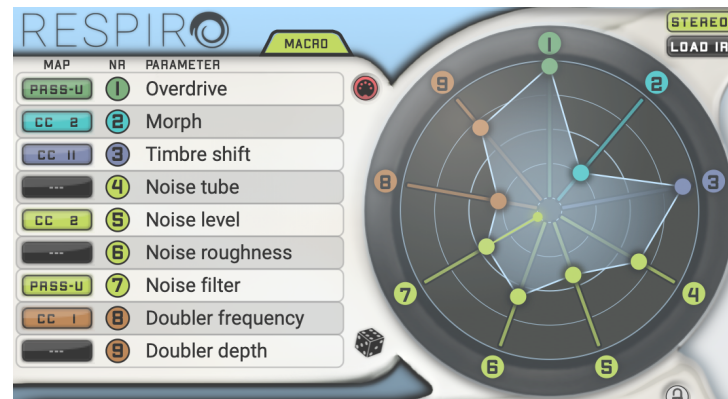
With Respiro's intuitive editing interface, you can customize your sounds and assign realtime controls. You can fully adjust the instrument's behavior, tonal qualities, pitch-bend, glide, convolution reverb, dynamic compression, vibrato, tremolo, and microtunings. You can set up detailed realtime modulation mappings with custom response curves. You can save all your customized sounds as variants.

The Mac/Windows version has an extensive and growing library of instruments that have been rigorously tested by experienced artists to produce marvelous playing results using popular wind-controllers, continuous expression controllers, and standard MIDI keyboards.

IMPORTANT: Owners of the Mac/Windows version can transfer a library of their favorite instruments and variants to play in the iOS version.

For price and other information about the Mac/Windows version of Respiro please visit:

<https://www.imoxplus.com>



MIDI CONTROLLER OPTIONS

Respiro supports the use of MIDI wind controllers, continuous expression controllers, and MIDI keyboards– with or without breath controllers.

Respiro can respond to several combinations of MIDI notes, velocity, aftertouch, and MIDI Continuous Controls (CC), to provide realtime control of the instruments. The Control Mode sets the source of MIDI data that controls virtual air pressure in the synth model. Choose a mode and CC number that matches your controller.

Respiro applies a responsive smoothing algorithm to all MIDI control to ensure glitch-free natural sound.

High-resolution (14-bit) MIDI CC is also supported.

(See [CONTROL MODE](#))

IMPORTANT NOTE: MIDI Channel Aftertouch, or Polyphonic Aftertouch are commonly referred to as "Pressure". However, in this manual and in Respiro, the term **PRESSURE** refers to virtual "air flow" within the physically-modeled instrument and the MIDI source assigned to control it. We will always refer to MIDI "Aftertouch" rather than "pressure" in this manual to avoid confusion.

WIND CONTROLLERS

Respiro is fully compatible with the following wind controllers:

Aodyo Sylphyo

Akai EWI

Berglund NuEVI

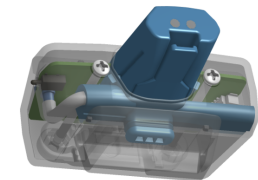
Emeo digital saxophone (includes lite version of Respiro)

Roland AE

Warbl

Yamaha WX

*Photon



Wind-controllers typically send note on/off, along with breath and pitch-bend data. Respiro's smoothing algorithm removes jagged steps in the modulation from some older wind controllers.

(See [CONTROL MODE](#))

NOTE: The Aodyo Sylphyo works well with Respiro. It is adjustable, precise, and has very low latency. Its various sensors can be mapped to multiple Respiro parameters.

* Photon (pictured) is a high-resolution, multi-dimensional breath control device that is currently in development.

CONTINUOUS EXPRESSION CONTROLLERS

Respiro supports MIDI processing for continuous expression controllers such as ROLI Seaboard and Roger Linn's Linnstrument. To use MPE, choose the pressure input mode CE. Respiro will automatically set MPE Aftertouch as the CC, by default (which is at the bottom of the CC list), but you can choose a different CC in this mode.

(See CONTROL MODE)

NOTE: A wide bend range may cause some Respiro instruments to sound unstable due to constraints within the physical model.

STANDARD MIDI KEYBOARDS

Respiro supports any standard MIDI keyboard controller. With VC mode, Respiro controls virtual pressure with MIDI velocity alone. However, to realize the full expressive potential of Respiro, a continuous control source is recommended.

MIDI Breath Control (CC02), Expression (CC11), Mod Wheel (CC1), aftertouch, or any other MIDI continuous control can be assigned to control the breath pressure. An actual breath controller (like the TEControl BBC2) can provide an even more realistic experience. The Photon (currently in development), is an advanced, hands-free controller with mouthpiece that allows for multi-dimensional, high-resolution control of Respiro while playing a keyboard or wind controller! Another option is the Expressive E Touché which provides several methods of realtime control.

NOTES: Some MIDI CC numbers in Respiro are reserved for specific functions. Respiro can receive note input from one MIDI device and pressure input from a separate MIDI device. To do this, you can set up multiple MIDI input devices in the Audio & MIDI Settings window.

(See CONTROL MODE)



INITIAL SETUP

1. Tap the Respiro app icon to launch the app.
2. Tap the MIDI plug icon at the top to access...



AUDIO & MIDI SETTINGS

At the top of the settings pane, choose an audio OUTPUT device. If your audio interface has multiple outputs, another list may appear below allowing you to check a box to select a specific output pair.

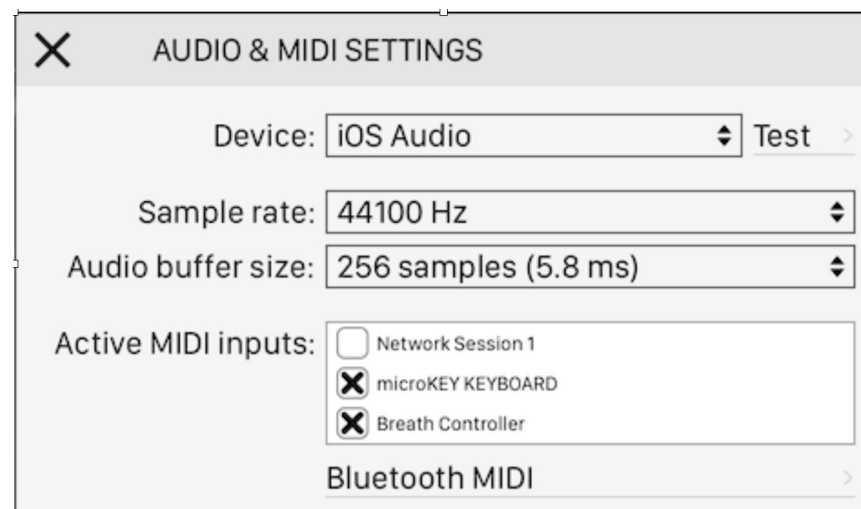
The Test button will produce an unobtrusive tone to confirm the selected output.

The **Sample Rate** has five options to match your project's rate. This can usually be left at 44100 or changed as needed.

The **Audio Buffer** size affects how quickly Respiro responds. However, very low settings may cause audio glitches on older/slower devices. Start at 128 samples and adjust up or down to balance response speed with glitch-free performance. Note disabling reverb can help reduce glitches if a lower buffer setting is needed.

Select the **MIDI inputs** by checking a box next to one or more keyboards/devices/ports in the list. If you have a Breath Controller via a separate USB device, make sure it is also checked in the list.

Close the Audio & MIDI Settings window. Now test your MIDI controller.



The "O" in the logo on the right edge is a MIDI activity indicator, it flashes red.

Don't worry if you don't hear the instrument sound yet. You may need to set the Control mode and Pressure CC before sound is produced. (See next step.)



3. Tap the cog icon to access the...



GLOBAL CONFIGURATION

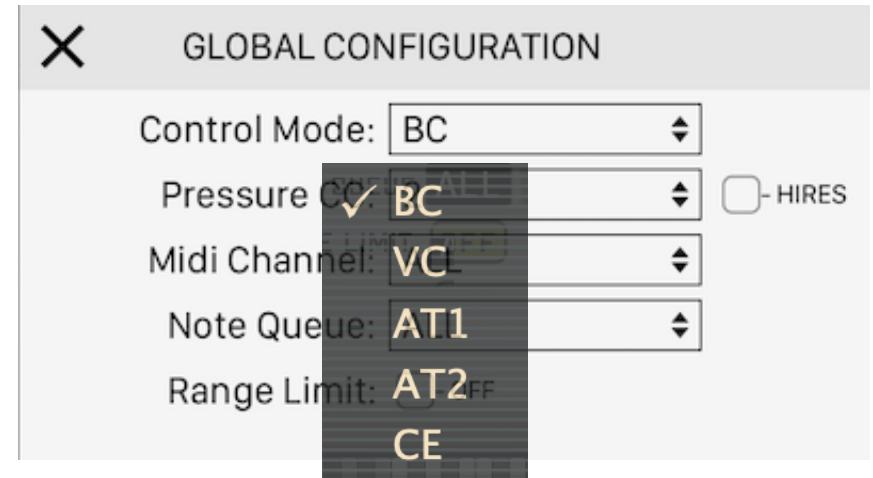
Control Mode selects way Respiro Wind-Synth will respond to your controller. Pressure CC allows you to choose which MIDI CC will control virtual air pressure in the model. The MIDI CH can be set to respond to **ALL** channels. However, if you are controlling multiple instruments, you can set the CH to an individual MIDI channel from 1–16.

(See the CONTROL MODE section for more details).

The Note Queue is a special function that allows multiple instances of Respiro to play in a coordinated way for polyphony.

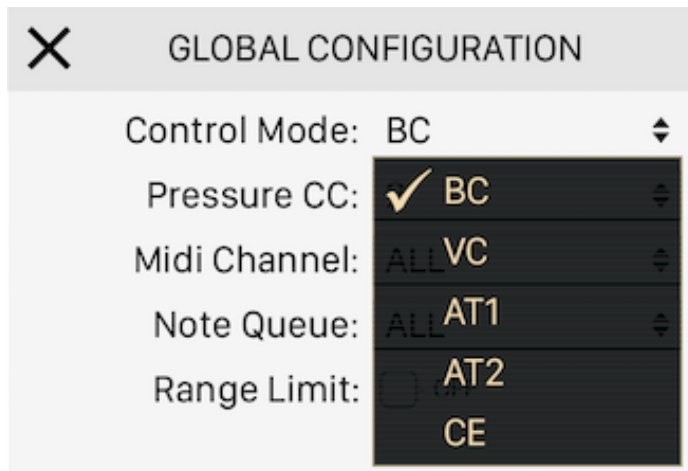
See MULTIPLE INSTANCES , ENSEMBLE POLYPHONY, AND NOTE QUEUE for further details.)

The Range Limit check box limits the playing to a "sweet" zone that is determined by the instrument. The last, in-range, played pitch will continue to sustain when subsequent out-of-range notes are played. This functionality was requested by some EWI players to help deal with incidental out of range notes.



CONTROL MODE

Respiro provides different options for controlling the "air pressure" within the modeling synth. This is essential to unlock the expressive capabilities of every instrument. The choices have to do with the type of MIDI controller you are using, what kind of data it is sending, and how Respiro responds to changing notes.



BC = Breath-Control

for a wind-controller or a MIDI keyboard with a breath-controller.

The default CC is CC02. Choose any CC to control pressure. If your wind controller transmits aftertouch, choose MPE Aftertouch from the bottom of the list.

VC = Velocity Control

for a MIDI keyboard without a breath controller.

Note velocity sets the initial model pressure value for each note. The chosen CC can be assigned to scale the values generated by velocity.

AT1 = Aftertouch

for a MIDI keyboard that transmits aftertouch.

Aftertouch alone controls the model's pressure.

AT2 = Aftertouch + Velocity

for a MIDI keyboard that transmits aftertouch and velocity. Velocity sets the initial value, and aftertouch provides continuous control during each note's sustain.

CE = Continuous Expression

for a continuous expression controller with MPE.

CC defaults to MPE Aftertouch, but the CC can be changed.

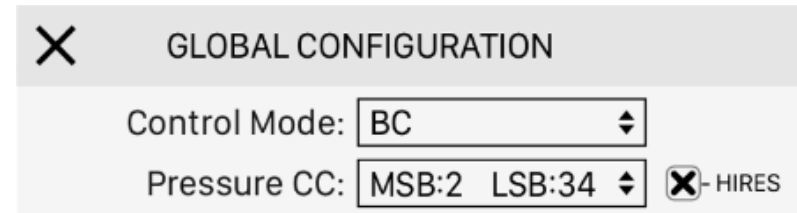
Respiro uses a special MPE engine to respond correctly to complex MPE data streams. Choosing CE mode automatically sets the pitch-bend range to +/- 24 ST by default. You can override these settings as needed.

VC, AT1, AT2 and CE modes are intended for use with MIDI keyboards without an added breath-controller. Respiro detects fast note transitions to trigger glides/glissandos. Virtual air pressure is retriggered for each new note.

Users of wind-controllers and MIDI keyboards with breath-controllers should choose BC mode which keeps the glides/glissandos active. Virtual air pressure remains continuous and is not retriggered for each new note. Set the CC option to CC01, CC02, CC11, AT, or whatever CC your wind-controller transmits. Refer to your wind-controller's documentation to find which CC is transmitted.

NOTE: If your wind-controller transmits aftertouch, for best results don't use either AT1 or AT2 modes, instead choose BC mode with the CC set to MPE Aftertouch at the bottom of the list.

IMPORTANT: MPE Aftertouch is functionally identical to normal Aftertouch. However, MPE devices deliver aftertouch data on rotating MIDI channels based on incoming polyphonic notes/voices. Users of MPE controllers must choose CE mode along with MPE Aftertouch to make full use of the MPE functionality in Respiro. Users of non-MPE controllers that transmit aftertouch should choose BC mode and choose MPE Aftertouch from the CC list.



Respiro Wind-Synth is also compatible with high-resolution (14-bit) CC. If your controller supports 14-bit control, check the HIRES box.

This will enable a pair of CC's, one for MSB (Most Significant Byte) and one for LSB (Least Significant Byte). The combined values from MSB and LSB provide the full 14-bit resolution. The LSB CC number is always 32 higher than the MSB CC number (for example MSB CC 2 and LSB CC 34). This behavior is fixed to ensure consistency with MIDI standards.

Set the MSB CC to match what is sent by your controller. Refer to your controller's documentation for further information.

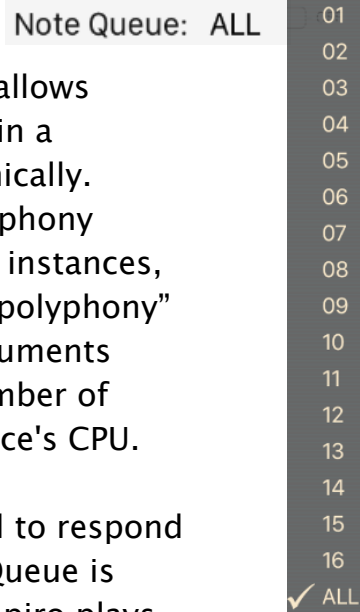
MULTIPLE INSTANCES, ENSEMBLE POLYPHONY, NOTE QUEUE

Running the standalone version of Respiro wind-synth allows for one "instance" of the instrument. However, using a host DAW or the AUM app from Kymatica, you may run multiple instances of the AUv3 Respiro plugin, each on their own channel or VI slot. The MIDI device is handled by the host.

Respiro's **Note Queue** function allows multiple instances to be played in a coordinated way, even polyphonically. You can play with standard polyphony by using the same variant on all instances, or you can play with "ensemble polyphony" by using different variants/instruments on each voice/instance. The number of instances is limited by your device's CPU.

By default, Respiro is configured to respond monophonically, and the Note Queue is set to ALL. With this setting, Respiro plays single notes in the order they are received.

When the Note Queue of each instance is set to a specific number from 01–16, Respiro ranks and parses incoming simultaneous/overlapped notes so that each instance responds to notes with a specific QUEUE number (i.e., its arrival order in the chord "stack").



For example, one instance of Respiro has a Note Queue setting of 01, and the second instance has a Note Queue setting of 02. A long note will be played by the first instance, and when a second overlapping note is played during the first note's sustain, that 2nd note is played by the second instance. In theory, you could configure up to 16 instances and voices of Respiro Wind-Synth, each responsible for one note/voice, and one Note Queue number. In actual use, your device's CPU will limit the available number of active instances.

Note: Disabling reverb (REV) will reduce CPU demands.

With multiple instances of Respiro set to receive on several different MIDI channels, you can play each instance monophonically as you would a multi-timbral synth. However, if you combine the unique MIDI CH settings, along with QUEUE settings, you can set up more than one "virtual ensemble". Respiro will track the QUEUE rankings of each MIDI channel separately.

Even though Respiro is a monophonic instrument, it contains a powerful custom MPE engine that responds well to MPE data. So when you have multiple instances of Respiro in either the standard polyphony, or the "ensemble polyphony" scenarios, and you are sending MPE data, Respiro will send MPE to the correct notes, and provide smooth transitioning of control between the active notes.

NOTE: Note Queue ranking works by rules, and tracks notes intelligently. As you play, it may require a more deliberate playing technique to control which notes are sent to each specific instance of Respiro.



VOLUME AND REVERB

At the top of the screen is a volume slider to override the stored volume setting of the selected instrument. When you select a new instrument or variant, the volume will jump to the original stored value.

A high-quality convolution reverb is enabled when the **REV** button is white. Tap this button to turn off the reverb globally. This setting will persist when you select other instruments/variants. Disabling REV will reduce CPU demands.

PITCH-BEND INDICATOR

The small dot to the right of the REV button is a pitch bend indicator. When pitch bend is active, the dot will move up or down.



Colour of Brass
▪ Instruments/Folk Story
▪ Instruments/BrassSynth 02 - WAH
▪ Variants/Pipa ad acqua - Sylpho - L01
▪ Instruments/SaxSynth 04
▪ Instruments/TeaLeafs04
Fluffy Clouds
Camila flowers - L02
Jules Vernes - L02
Meditation
▪ Instruments/Pipa ad acqua - L01
Carousel IV - L01
Coffee & Cream
001 Antique wood - L06
002 Anubis - L01
003 Anubis 03 - L01
004 Bella Madonna - L01

BROWSING INSTRUMENTS/VARIANTS

Simply tap any item in the list to select and play it.

Respiro Wind-Synth comes with six fully functional instruments for you to use right away. These are indicated with a small blue dot in the left column.

If you own the Mac/Windows version of Respiro, and have transferred a library of instruments and variants, those will now appear in your list of available sounds.

The left column shows the MIDI program change numbers of instruments or variants that were transferred.

Note: You may see some instruments that don't have MIDI P.C. numbers. Respiro cannot transfer a variant without also having its parent instrument with it. So during the export, Respiro adds these parents to the library even if they didn't have a MIDI P.C. assigned.

TRANSFER LIBRARY TO iOS DEVICE

Imoxplus provides a free iOS companion "player" app and AUv3 plugin, called Respiro Wind-Synth. This app uses the same full modeling engine as the Mac/Windows version, but with minimal settings and with no editing interface.

The iOS Respiro Wind-Synth app/AUv3 includes a selection of six example sounds. This section describes the process that allows you to transfer your favorite instruments and variants from your Mac/Windows Respiro to your iOS device for live playing or mobile music production.

After the transfer is complete, both the iOS Respiro standalone app and AUv3 plugin will load the full imported library into memory to allow for fast switching between sounds. If you transfer a large number of instruments/variants, this will increase the startup time and the memory space used by the app and plugin. Users with older devices should be aware of this. If you encounter problems with a large library, consider reducing the number of instruments and variants to be transferred.

Follow these steps:

1. In the Mac/Windows standalone version of Respiro, assign MIDI Program Change numbers to all the instruments/variants you wish to export and play on your iOS device. Remember that each instrument or variant **must be currently selected** while you assign a MIDI Program Change number to it.

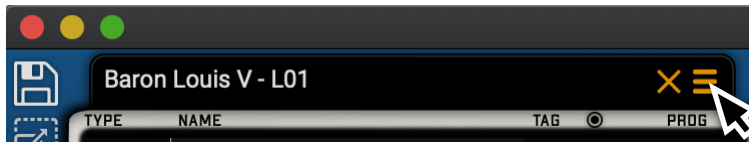
NOTE: With variants, the parent instrument is always needed. Therefore, if you add a P. C. number to a variant, but you did not add a P.C. number to the parent instrument, Respiro will automatically add the parent instrument (without a P.C. number) to the export set.

2. In the iOS standalone app, tap the menu button in the upper-right corner (3 horizontal lines). At the bottom of the menu, you will see the **Library code**.



Library code
YourLibraryCode

3. Back in the Mac/Windows standalone Respiro, click on the menu button (3 horizontal lines) at the upper-right side of browser to open the menu. Choose **SET iOS library code**. Type the Library Code exactly as it appears in your iOS menu.



4. While still in the Mac/Windows standalone Respiro, again click on the menu button and select **EXPORT library**. This will gather all the instruments and variants to which you have assigned Program Change numbers, as well as any additional parent instruments that are needed, and create a file on your desktop called: **export.respiroUserLib**
5. There are a number of methods to move this library file to your iOS device. Mac users can use AirDrop. Another option is to copy the file to a cloud storage service (remote data storage services that are accessed via the internet) like iCloud, iCloud for Windows, Dropbox, or Google Drive.

iCloud for Windows, Dropbox and Google Drive require some additional software to be installed either on your computer and/or on your iOS device in order to access these services. Refer to the cloud service documentation for setup instructions.

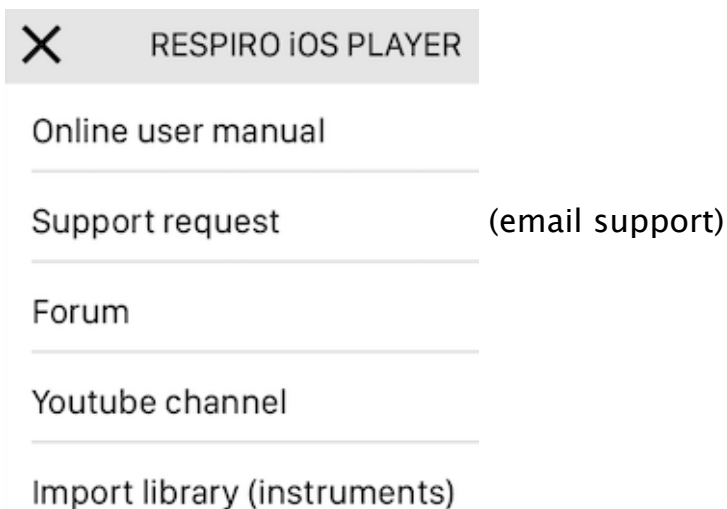
File Sharing via iTunes is not supported at this time.

6. On the iOS device, you must now open the Files app and move the file from the cloud to the local storage on the device. In Files, in the sidebar under Locations, tap on your cloud service and locate the **export.respiroUserLib** file. Then long-press on the file and choose Move from the pop-up menu. Choose the Respiro folder from the next window and tap Copy in the upper right corner.
7. Finally, back in the iOS Respiro standalone app, open the Respiro menu again and select **Import Library (instruments)**. A Files display will show locally stored files. Find the Respiro folder and tap the **export.respiroUserLib** file. A confirmation box appears after import process completes.

OPTIONS/HELP



The three-line menu icon in the upper right corner reveals a list of help links, including:



The function of the Import library option is described in the [TRANSFER LIBRARY TO iOS DEVICE](#) section.

IMOXPLUS LOGO (MIDI ACTIVITY/MIDI PANIC)

The IMOXPLUS logo on the right edge shows MIDI activity by flashing a red “o” in the logo.

Tapping the logo stops all sounding notes (MIDI Panic, all-notes-off).



COMPATIBILITY BETWEEN PLATFORMS

Instruments and variants that are transferred from the Mac/Windows version will maintain all of their features and functionality in the iOS version. One exception is the global setting in the Mac/Windows version that enables CC70–78 to control the macro sliders. This functionality is not currently supported in the iOS version.

CONTACTS / ACKNOWLEDGEMENTS

Please consult our forum on the website www.imoxplus.com

This forum is monitored and moderated on daily basis.

Please make use of the forum to search for answers, make suggestions,
ask questions, share ideas and help the Respiro user community.

Our goal is to constantly improve our products and your input is important to us.

Of course you may always contact info@imoxplus.net

Respiro Wind-Synth Audio Plugin was made in years 2017–2021 by:

Rudy Verpaele: Concept, GUI design. <https://www.imoxplus.com>

Luigi Felici: Sound engine, DSP programming. <http://www.nusofting.com>

Jelle Bakker: Software architecture, cross-platform coding. <http://www.jb-audio.com>

© Imoxplus BVBA all right reserved

Acknowledgements:

Huge thanks to Pedro Eustache, <http://pedroflute.com>

Aodyo Team, <https://www.aodyo.com>

Andrew Claes from jazz band STUFF

Jon Stubbs for reworking the English version of the manual

Didier Guérin for translating the manual to French language

COPYRIGHT

****All product, logos and company names are trademarksTM or registered[®] trademarks of their respective holders. Use of them does not imply any affiliation with or endorsement by them.**

Trademarks

Mac, macOS, AU (Audio Units), AU Lab, Logic Pro, and Mainstage are registered trademarks of Apple Inc., registered in the U.S. and other countries.

Windows, Windows XP and Windows Vista are registered trademarks of Microsoft Corporation registered in the United States and/or other countries.

AODYO and SYLPHYO are registered trademarks of AODYO Company.

NuEVI is a registered trademark of Berglund Instruments.

Emeo is a registered trademark of Emeo.

ROLI and SEABOARD are registered trademarks of ROLI Ltd.

Linnstrument is a registered trademark of Roger Linn Company.

Warbl is a registered trademark of Mowry Stringed Instruments.

AKAI PRO and EWI are registered trademarks of AKAI Corporation.

Ableton and Live are registered trademarks of Ableton company.

MOTU and Digital Performer are registered trademarks of Mark of the Unicorn.

Bitwig is a registered trademark of Bitwig GmbH.

TEC and TEControl products are registered trademarks of TEControl.

Reaper is a registered trademark of Cockos Incorporated.

Expressive E and Touché are registered trademarks of Expressive.

NI and Maschine are registered trademarks of Native Instruments.

LoopBe30 is a registered trademark of nerds.de

ROLAND and ROLAND products are a registered trademarks of Roland Corporation.

YAMAHA and YAMAHA products are registered trademarks of Yamaha Corporation.

VST, ASIO, Cubase, and Steinberg are registered trademarks of Steinberg Media Technologies GmbH.

