

IMMERSE  
VIRTUAL STUDIO

*Signature Edition*

A P P L E M U S I C

USER MANUAL

Release 1.0.0

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## Revision History

| <b>Date</b>       | <b>Release Version</b> | <b>Comments</b>    |
|-------------------|------------------------|--------------------|
| January 25th 2024 | Draft 1.0.0            | Production Release |

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# 1. Introduction

Starting from Immerse Virtual Studio v.1.3.0, we are including Apple Music Signature Edition Studio, a virtual studio that uses Apple's AUSM engine to binauralize a 7.1.4 multichannel audio stream from a DAW (Digital Audio Workstation). There are several new features included in this virtual room, therefore we've considered having a specific User Manual to describe them in detail. *Please note that Apple Music Signature Edition Studio is only available in the MacOS version.*

## 2. Getting Started

### 2.1 System Requirements

Apple Music Signature Edition Studio makes use of Apple's AUSM (Audio Unit Spatial Mixer) engine to binauralize the 7.1.4 multichannel audio, as well as for using Apple's head tracking and the option to select Apple's Generic or Personalized HRTF profiles. As such, Apple Music Signature Edition Studio only works on Mac.

Here below is a summary table of the hardware and MacOS requirements depending on the functionality to be used:

| Feature                     | Minimum Requirements  |
|-----------------------------|---|
| Plugin versions supported   | AAX, VST3, AU   |
| CPU support                 | <ul style="list-style-type: none"> <li>All Apple CPUs (M1, M2, M3 and variants)</li> <li>Intel CPUs</li> </ul>                                    |
| Operating Systems Supported | Mac OS<br>Certain features require Monterey 12.3 or later   |
| Personalized HRTF           | <ul style="list-style-type: none"> <li>Apple Silicon with Ventura 13.0</li> <li>Apple AirPods Pro/Max selected as System Device output</li> </ul> |
| Head Tracking               | Apple Silicon with Monterey 12.3, and Apple AirPods Pro/Max selected as System Device output  |
| Audio Rendering Support     | All audio must be in 7.1.4 format   |

## 2.2 Installation and uninstallation

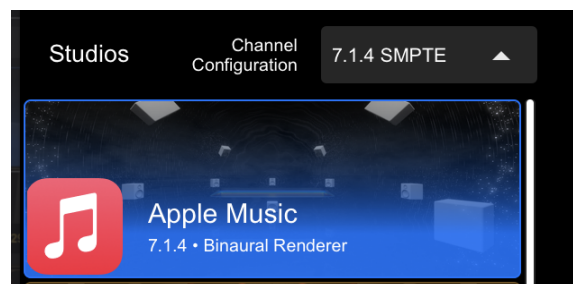
Since Apple Music Signature Edition is included in both Immerse Virtual Studio Signature Edition and Immerse Spatial Audio Production Suite, please refer to either of those two User Manuals for installation and uninstallation steps.

## 2.3 Onboarding a new user

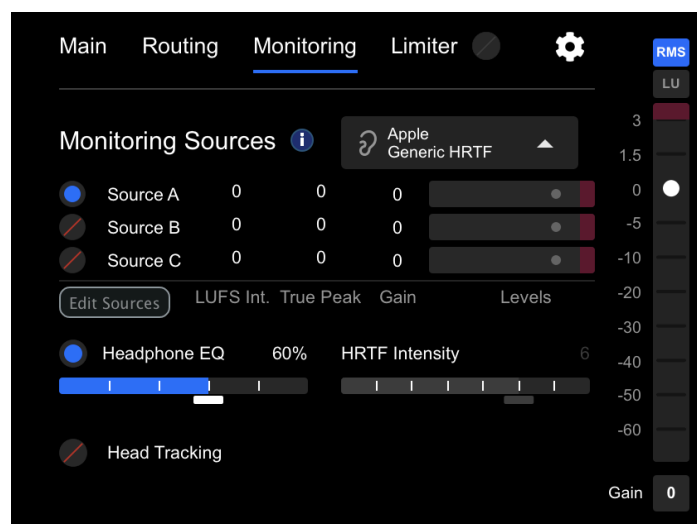
You can onboard a user with either the standalone application or within the plugin UI. You can refer to Immerse Virtual Studio Signature Edition or Immerse Spatial Audio Production Suite User Manuals for a detailed description of this process.

### 3. Apple Music Studio features

To use Apple Music Studio, the channel configuration must be set to 7.1.4, as shown in the image below (note that it can be a different 7.1.4 channel configuration, depending on which DAW and channel order is being used). This applies to both the plugin as well as the standalone versions of Immerse Virtual Studio.



The 7.1.4 audio stream flowing from the DAW/Dolby Atmos Renderer to Apple Studio gets binauralized using AUSM engine, in real time. All the controls are located in the Monitoring Tab, as can be seen in the picture below:



Note: In this section we will focus on the specific Apple Music related features and settings. For additional information on the Monitoring Sources feature, kindly check the User Manuals for Immerse Virtual Studio Signature Edition or Spatial Audio Production Suite.

## 3.1 Using Apple HRTF

When Apple Music Studio is selected, the dropdown menu will offer the following options:

- Apple Generic HRTF
- Apple Personalized HRTF (only if available/supported, otherwise this option will be grayed out)

By default, *Apple's Generic HRTF* is selected. With this configuration, Apple Spatial Audio can be listened to on any headphones with or without Headphone EQ (Headphone EQ is disabled by default).

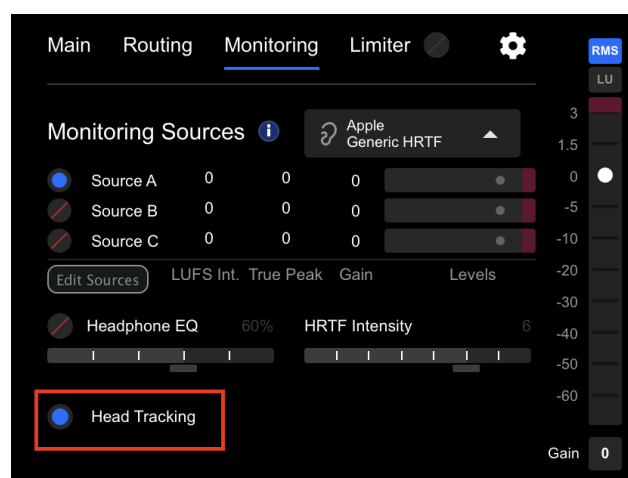
When using Apple's AirPods Pro or AirPods Max, and if the user has previously created an Apple Personalized Spatial profile, the option "*Apple Personalized Profile*" can be selected on the main UI, under the Monitoring tab. For more information on setting Apple's Personalized Spatial Audio, please refer to [this support link](#) from Apple Webpage. Beyond having created a Personalized Spatial Audio profile, there are some additional system requirements for this option to be available:

- Apple headsets must be selected as the default System Output Audio Device
- Personalized Spatial Audio only works with Mac OS Ventura or later
- Personalized Spatial Audio only works on Apple silicon based machines

In Apple Music Studio the HRTF intensity slider is disabled.

## 3.2 Apple head tracking

When using Apple AirPods Pro/Max headsets, the user can activate the *Head Tracking* feature. If supported by the System, when clicking on the button the feature will become active (the button becomes blue), and head tracking will be noticeable when listening to an audio stream.



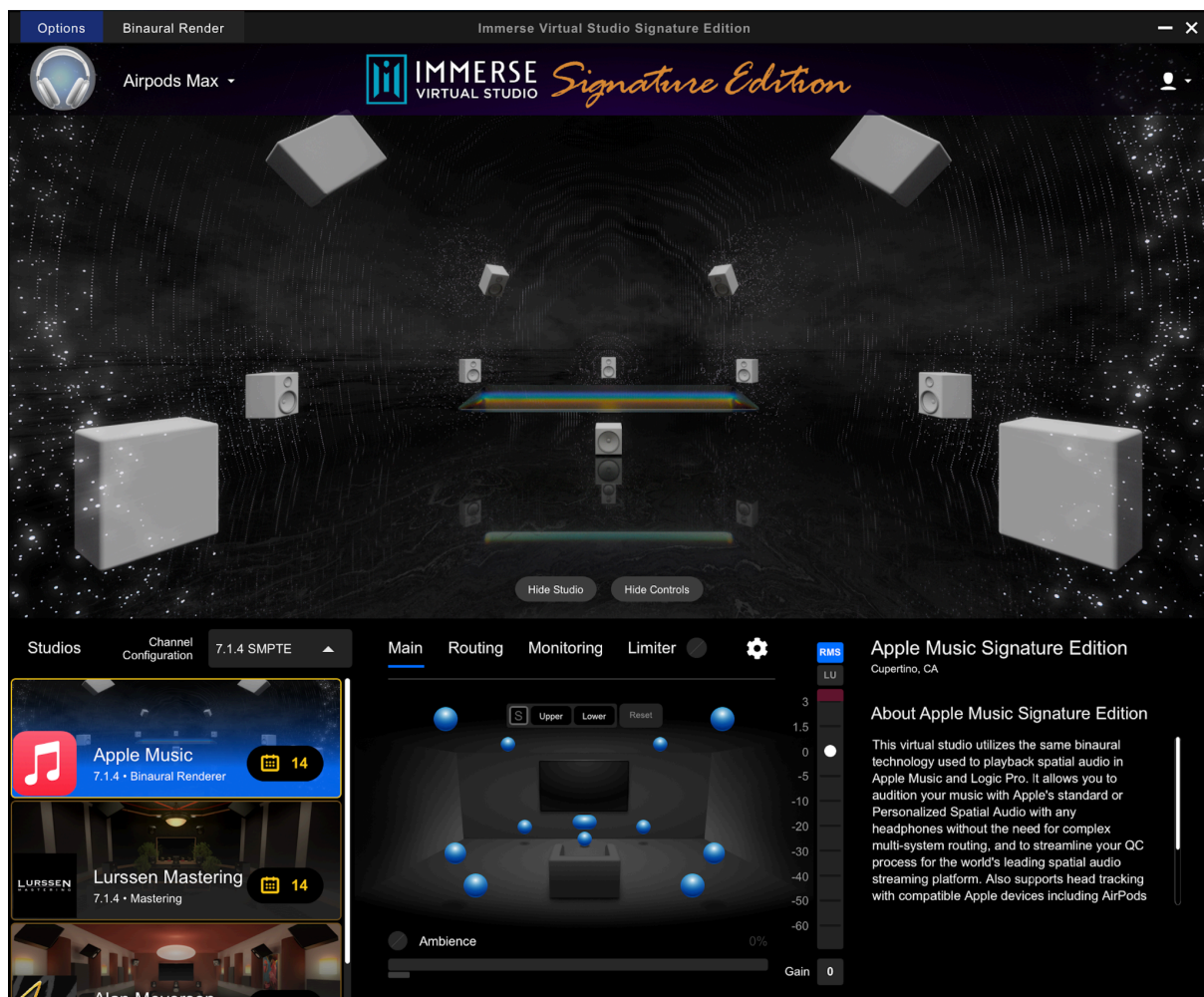
This feature is also available under certain system requirements, listed below:

- Requires using Apple headsets, and connected with the Mac system using Bluetooth (i.e. Apple AirPods Max shall not be connected using the audio cable)
- Apple headsets must be selected as the default System Output Audio Device (picture below shows AirPods selected in the system tray)



- MacOS requirement: Monterey v12.3 onwards

## 4. Using Apple Music with Immerse Virtual Studio Standalone

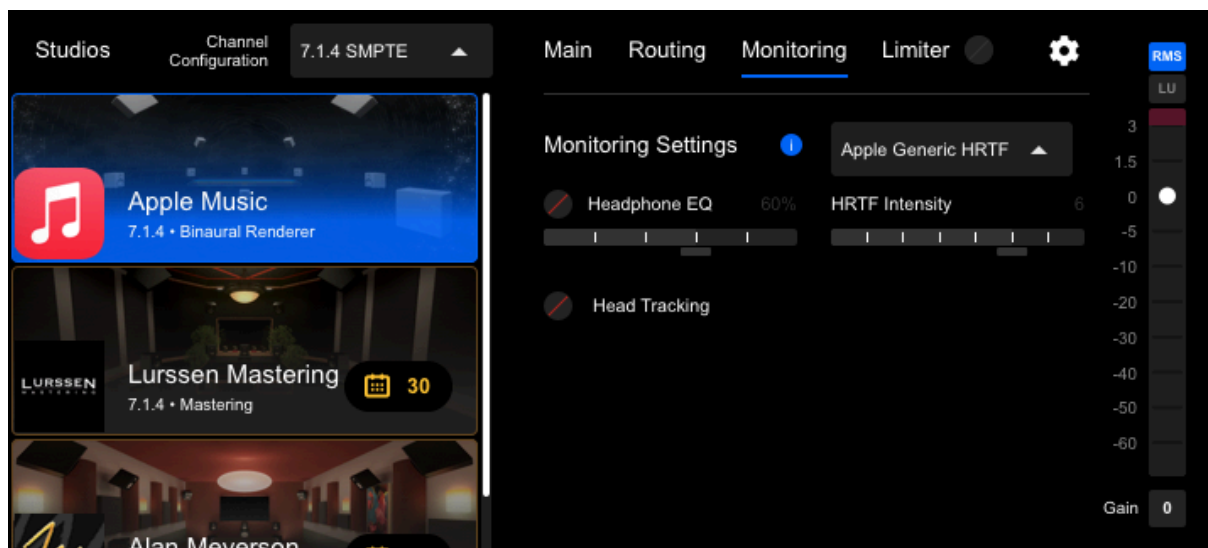


The following steps should allow you to successfully connect Immerse Virtual Studio to your DAW or to Dolby Atmos renderer

1. Go to your Launchpad or Applications folder and search for Immerse Virtual Studio Signature Edition. Click on the application to launch the Immerse Virtual Studio Standalone application. This desktop application allows you to route multichannel or Atmos audio between applications and monitor that signal on any pair of headphones.
2. When you set Channel Configuration to a desired value, only those studios which are compatible with that specific channel configuration will be enabled and the rest will be

disabled (grayed-out). **For Apple Studio, a 7.1.4 channel configuration shall be used.** Depending on the DAW, there are different formats to take into consideration (Logic, Film, Steinberg, Pro Tools, SMPTE)

- Ensure Headphone EQ is turned off
- Depending on the Mac OS version, Apple generic or personalized HRTF can be selected, although this beta version does not confirm if Personalized profile has been correctly selected
- Head tracking feature can be selected if AirPods Pro/Max have been selected on both the default System Audio Output device, and in the Options > Audio /MIDI settings of Immerse Virtual Studio. If this is the case, by pressing on the Head Tracking button this one will become blue, confirming that Head Tracking is active



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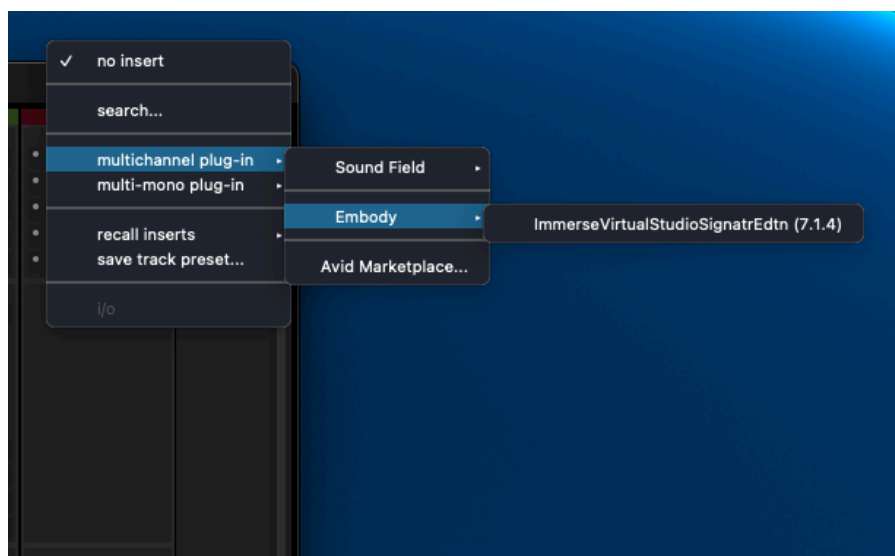
## 5. Using Apple Music with Immerse Virtual Studio plugin

Immerse Virtual Studio can also be used as a plugin (AU, VST3 and AAX formats supported), and can be inserted on a multichannel track. While the Lurssen Mastering and Alan Meyerson studios can be used on a variety of track widths (from stereo up to 7.1.6 for Alan Meyerson, up to 7.1.4 for Lurssen Mastering), Apple Music studio requires a 7.1.4 track. If the plugin is inserted on a track with a different channel configuration than 7.1.4, Apple Music studio won't be selectable and will remain grayed out.

### 5.1 Setting up the plugin on a session

Here are the steps to use Immerse Virtual Studio plugin with Apple Music Studio:

1. On a 7.1.4 track, insert Immerse Virtual Studio Signature Edition (7.1.4). In Pro Tools, it can be found under Multichannel plug-in -> Soundfield, or directly under the vendor Embody



2. Once inserted, the plugin User Interface will open, and will look almost identical to the standalone version.



The first time that the plugin is opened, and only when Apple Music Studio is selected, there is a pop up providing additional information and requirements about using Apple Binaural and Apple head tracking features. The requirements are as follows:

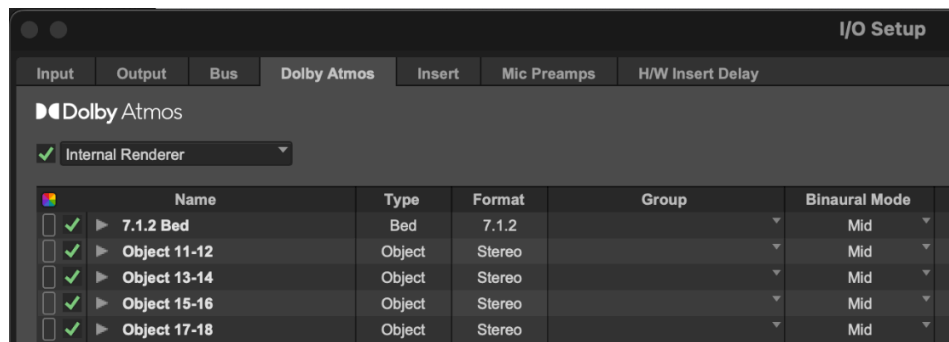
- Apple Head tracking requires Apple Silicon with Monterey 12.3, and Apple AirPods selected as system output
  - Apple personalized Binaural Audio requires Apple Silicon with Ventura 13.0, and Apple AirPods selected as system output
3. After pressing on OK, there are a series of settings that are automatically configured on the plugin:
- Room Ambience is disabled
  - Limiter is disabled
  - HRTF intensity (in the Monitoring tab) is disabled

These are the recommended settings to use Apple Music Studio.

## 5.2 Using Immerse Virtual Studio plugin with Internal Dolby Atmos Renderer in Pro Tools (PT version 2023.12)

Pro Tools 2023.12 includes an Integrated Dolby Atmos Renderer, which can be used in conjunction with Immerse Virtual Studio Signature Edition plugin to listen to the mix on headsets using Apple Binaural audio, as well as Immerse binaural audio if a different studio than Apple Music (i.e. Alan Meyerson, Lurssen Mastering) is selected.

First, Dolby Atmos Internal Renderer needs to be selected. To do so, go to Setup -> I/O and then in the Dolby Atmos tab, select Internal Renderer and check the box next to it:

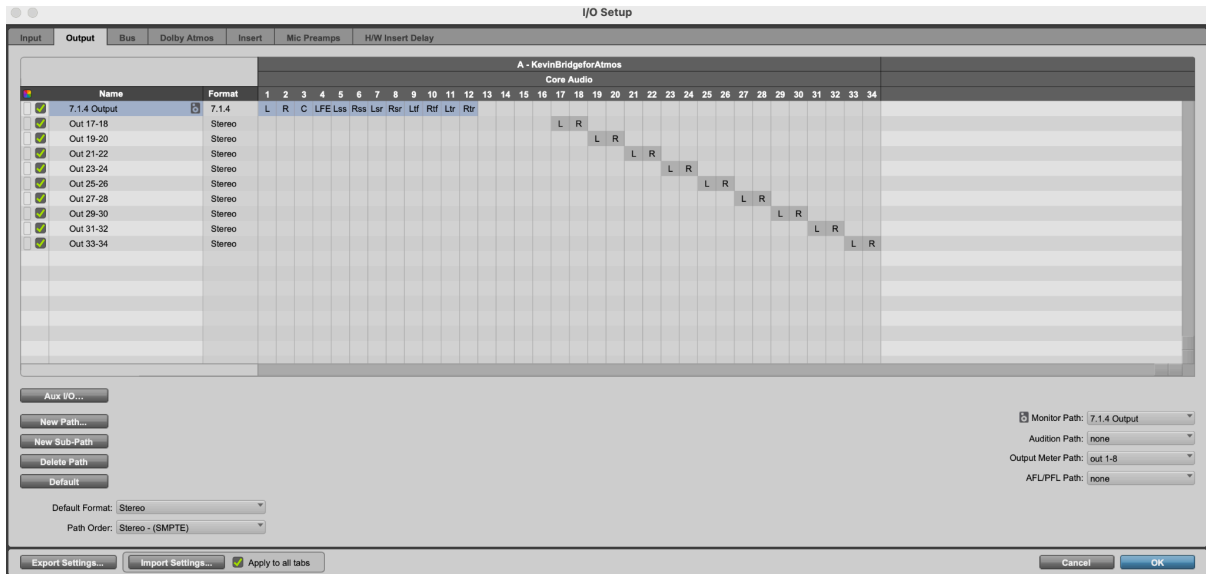


Once Dolby renderer is enabled, the renderer output will be using the channel configuration provided by the Monitor Path. As we want to use Immerse Virtual Studio plugin, we have to configure it so that the Dolby Atmos Renderer monitoring output is set to 7.1.4, which means that we require setting up a Playback engine that supports this channel configuration.

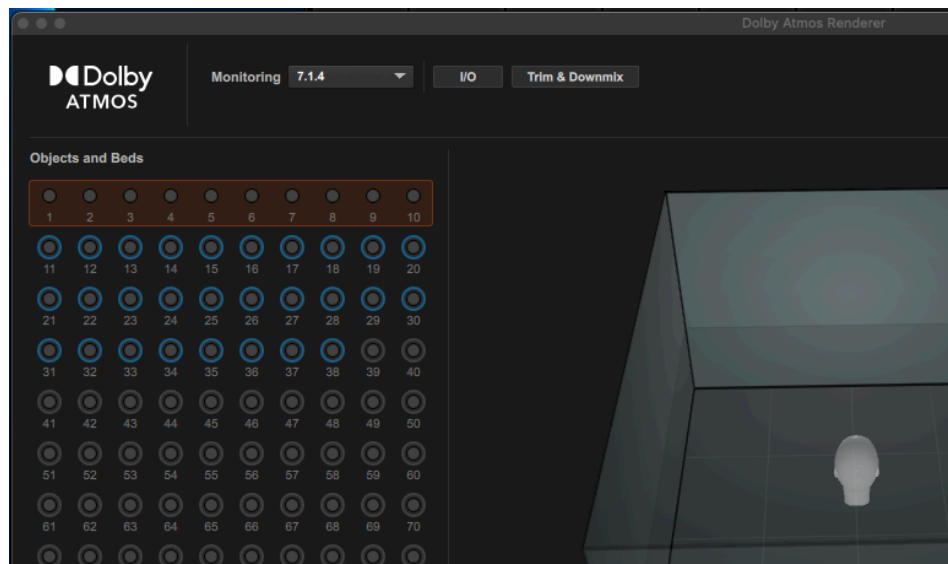
Since the output of Immerse Virtual Studio will be a binaural stereo stream, and we may want to listen to it through our 2 channel DAC (i.e. Focusrite, etc), MacOS provides an easy process to create an aggregate device, adding your 2 channel DAC to a larger interface (i.e. Pro Tools Audio Bridge 16) and use this aggregate interface as the Playback engine. Once this aggregate device is selected, we can then go back to our I/O settings, and configure the Output tab.

We will create a 7.1.4 Output bus, and we will be selecting it as the Monitor Path, which will allow the Internal Dolby Atmos Renderer to select 7.1.4 as the Monitoring option.

This is how the I/O Output tab should look:



Then we can select 7.1.4 as the monitoring option for the Internal Dolby Atmos Renderer:



Once these steps are done, we can simply insert the plugin in the track which uses the Renderer Out, and follow the steps above to configure Immerse Virtual Studio with Apple Music.

Additionally in place of using an Aggregate device you can use the Pro Tools AUX IO feature to add in your 2 Channel DAC (i.e. Focusrite, etc)