



Additional Software Guide
A Guide for BVA's Air Traffic Controllers

Version A
September 13, 2020

Version Log & Changes from Previous Version

Changes from the previous three versions are listed at the top of every SOP. Changes within the document are emphasized with a vertical blackline beside changed text.

Version A – September 13, 2020

(New document.)

N/A

Introduction

This document will help provide helpful information for configuring your computer for providing virtual ATC. It will also give details on configuring your computer and software on it so you can record the best videos of your controlling without broadcasting other programs that you may be running, including music, TeamSpeak, or email.

None of this material is required reading. However, you may find the tips and tricks included in this document helpful as you get more experience with virtual ATC.

In this document we will recommend a specific set of free software. There are other similar software clients that may achieve the same objectives.

Setting up a Physical Push-to-Talk (PTT)

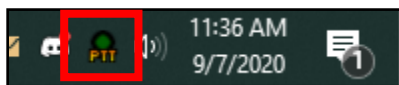
When controlling, many people like to have my hands free to type (edit flight plans, assign scratchpads & temp altitudes, etc.) while simultaneously talking to aircraft on the frequency or to other controllers in TeamSpeak. There is a way to make that happen using the toe brakes on rudder pedals as PTT buttons, or physical PTT buttons, such as [this one sold by Plantronics](#). (This is an alternative to using a keyboard key like 'CTRL' to transmit on the network.)

There are several popular software clients available including:

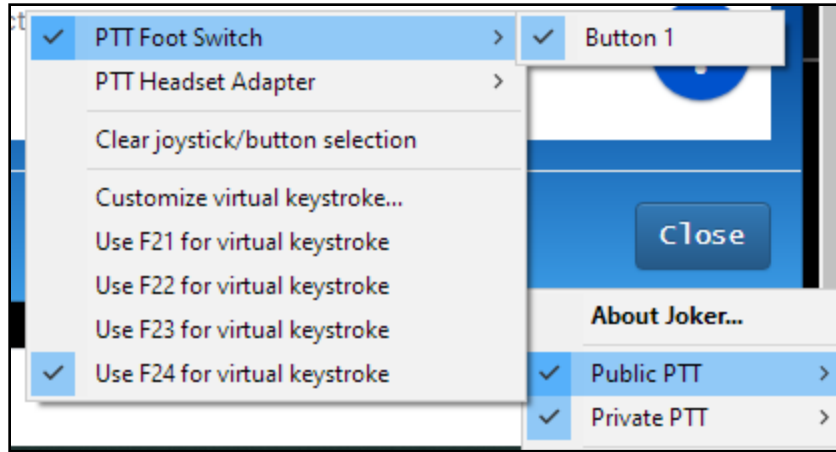
- [Joker](#)
- [JoyToKey](#)
- [AntiMicro](#)

In this document, we'll explain how to use Joker. However, you should be able to achieve the same result from any of these (or other) software options.

Download the joker.exe file from the link above. There is no installation; simply save the .exe to a convenient location on your computer. Then, run it "as Administrator". Joker will appear in your system tray:



Right-click on the icon, choose the device you want to use, and map it to a key. You can choose any key you wish. Selecting "Use F24 for virtual keystroke" is probably the best option because you can press and hold F24 without impacting any other open programs:



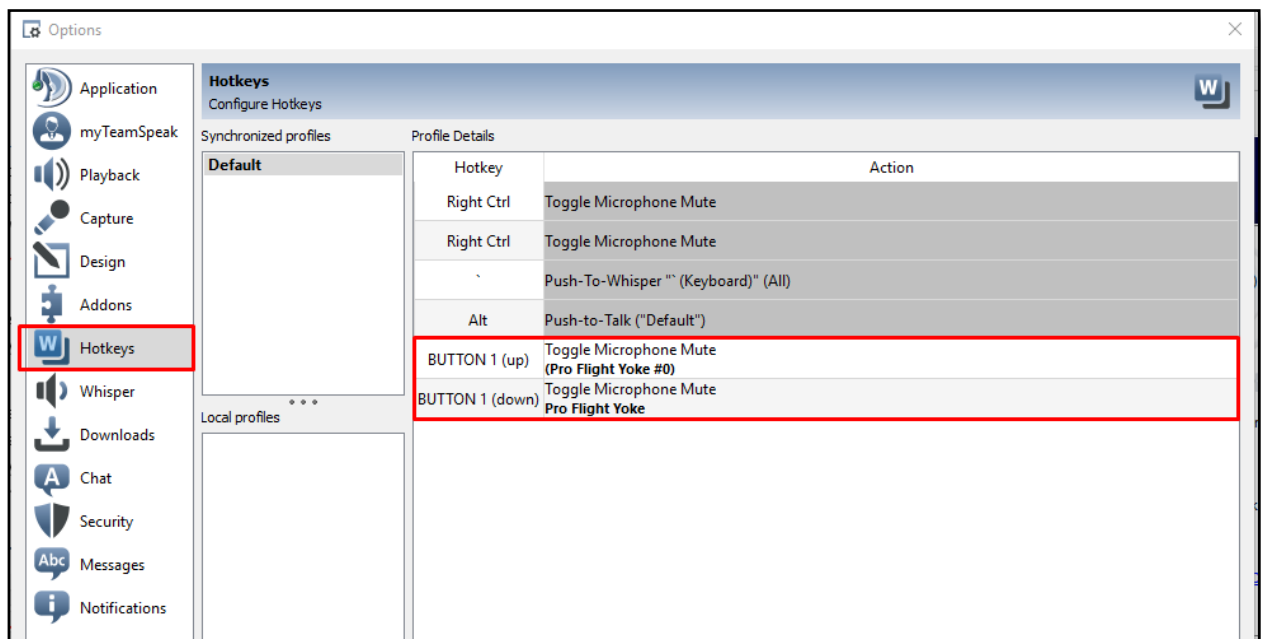
Select F24 for both your “Public PTT” and “Private PTT”.

You can now go into your other applications like AFV. While setting your PTT, simply press the physical key and F24 should be recognized by the program. If you need it, the code for “F24” is 135 (this may help if you are configuring Joker for use in TeamSpeak in any way).

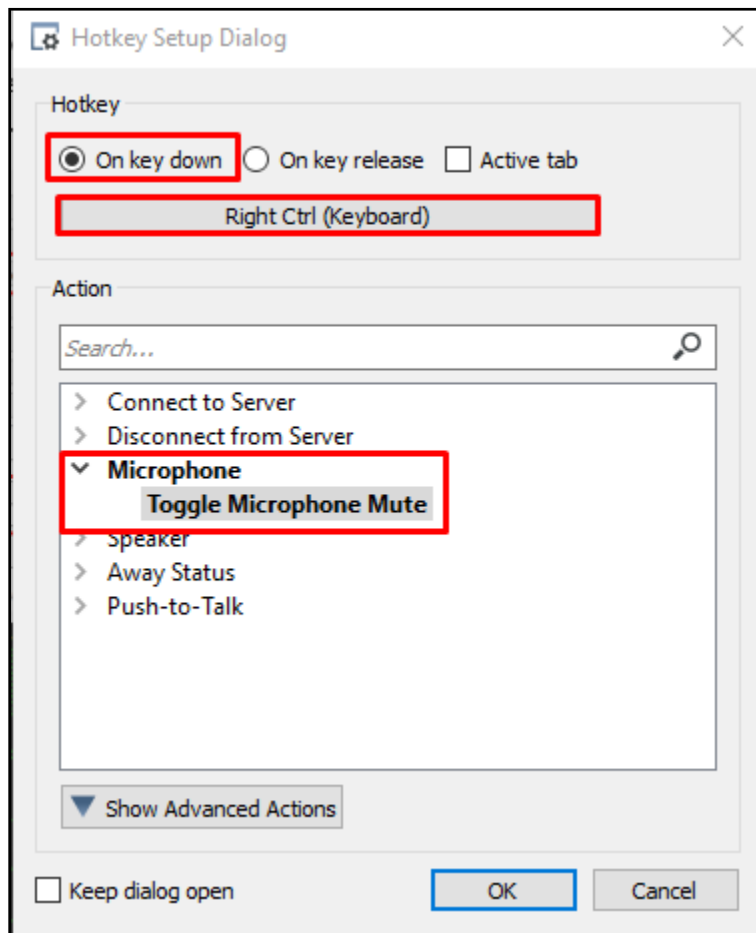
Muting TeamSpeak Microphone Using Your PTT

Many users like to use Voice Activation on TeamSpeak so they do not need to hold down a button while talking to other controllers. By configuring TeamSpeak to automatically mute your microphone while transmitting on the network, you can transmit on frequency while using Voice Activation in TeamSpeak.

In TeamSpeak, select Tools -> Options or use ‘Alt+P’. In the left menu bar, select ‘Hotkeys.’ The two highlighted hotkeys are the ones you want to add, using whichever PTT you’re using to transmit on the network.

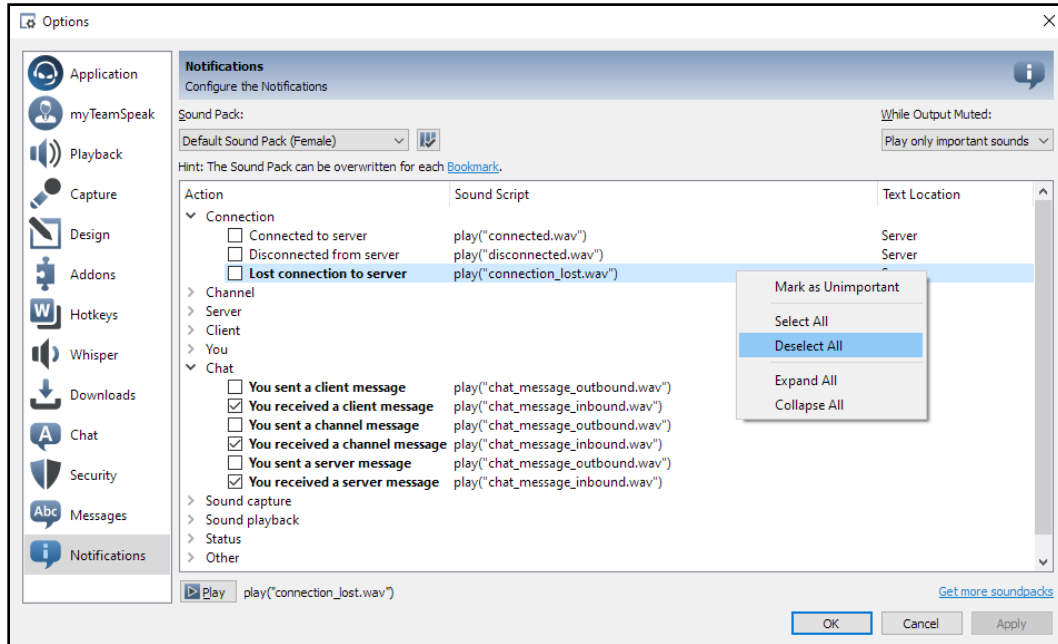


To do so, click the '+ Add' icon in the bottom left under the hotkeys screen. This will open a dialog box for you to add a new hotkey binding. First, ensure 'On key down' is selected. Then, click on the box directly below that prompts for a key. Push your network PTT key and you should see it show up in the box. You can click the box again to change which key is selected. Then, select 'Microphone -> Toggle Microphone Mute' in the action box:



Now, click 'OK.' This will add the key binding for when you click your push to talk key. However, you need to repeat the exact same process, selecting 'On key release' this time. This will unmute your microphone when you release your push to talk key, so you can talk again.

Depending on your TeamSpeak sound settings, you may hear “microphone muted” and “microphone activated” as your key is pushed down and released. You can deactivate these, and other sounds, by selecting the ‘Notifications’ menu bar item. BVA’s TeamSpeak Installation Guide recommends deselecting all notification sounds except chat messages:



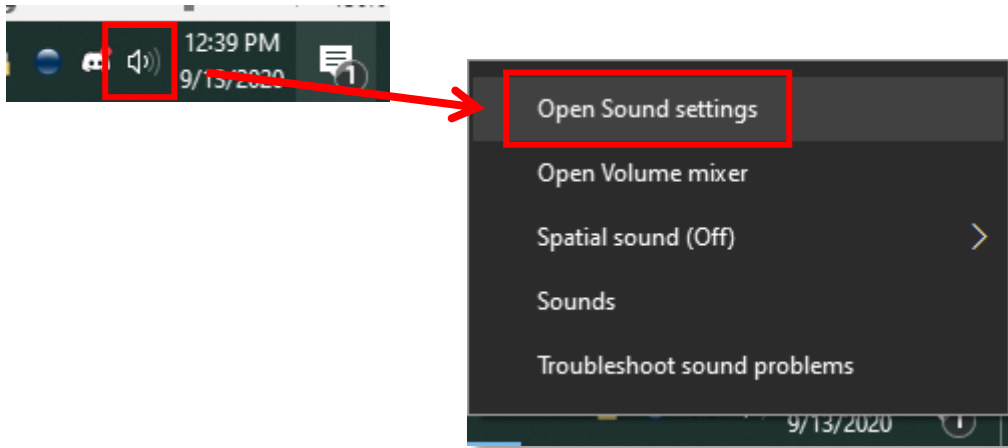
VoiceMeeter

Even if you don’t plan to record or stream your sessions, VoiceMeeter can be helpful for adjusting audio levels or changing your AFV output device while connected.

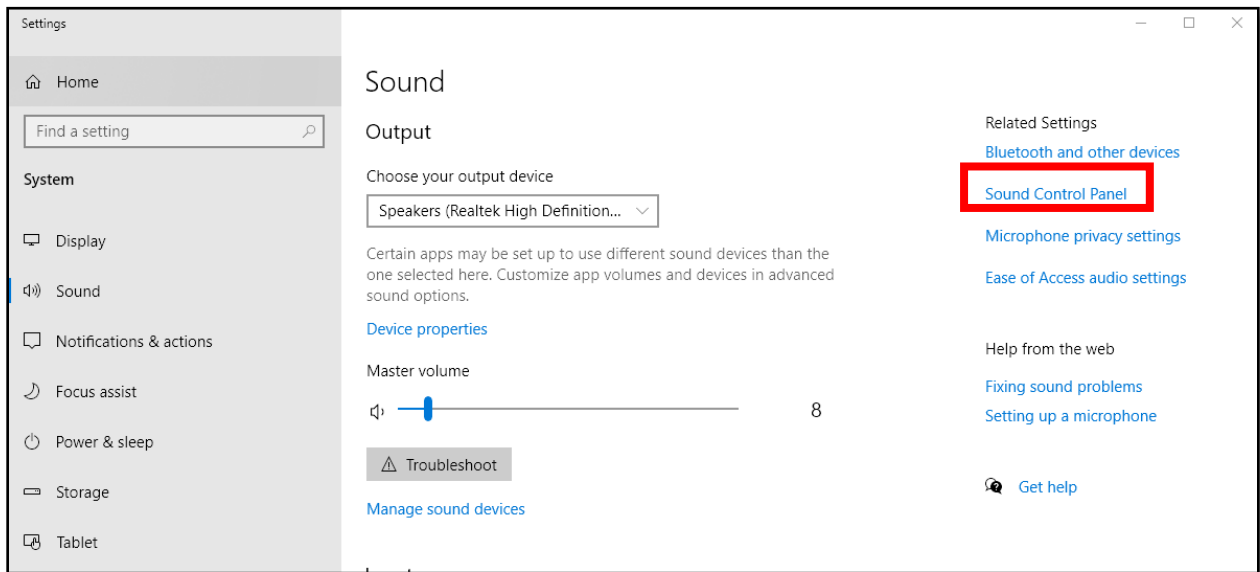
If you decide you want to record or stream your sessions, VoiceMeeter will allow you to set up a virtual audio cable to route your network audio through a virtual audio device, which in turn you route to your headset or speakers. By doing this, you hear controller client sounds exactly as you normally would if you selected your headset as the output, but you can pull this source of audio ONLY in your recording software. This way, if other applications (such as TeamSpeak) are routed directly to your audio devices, such as speakers or headsets, they won’t come across in the stream or recording.

Download, run and install [VoiceMeeter](#). You’ll need to restart your computer once it’s installed.

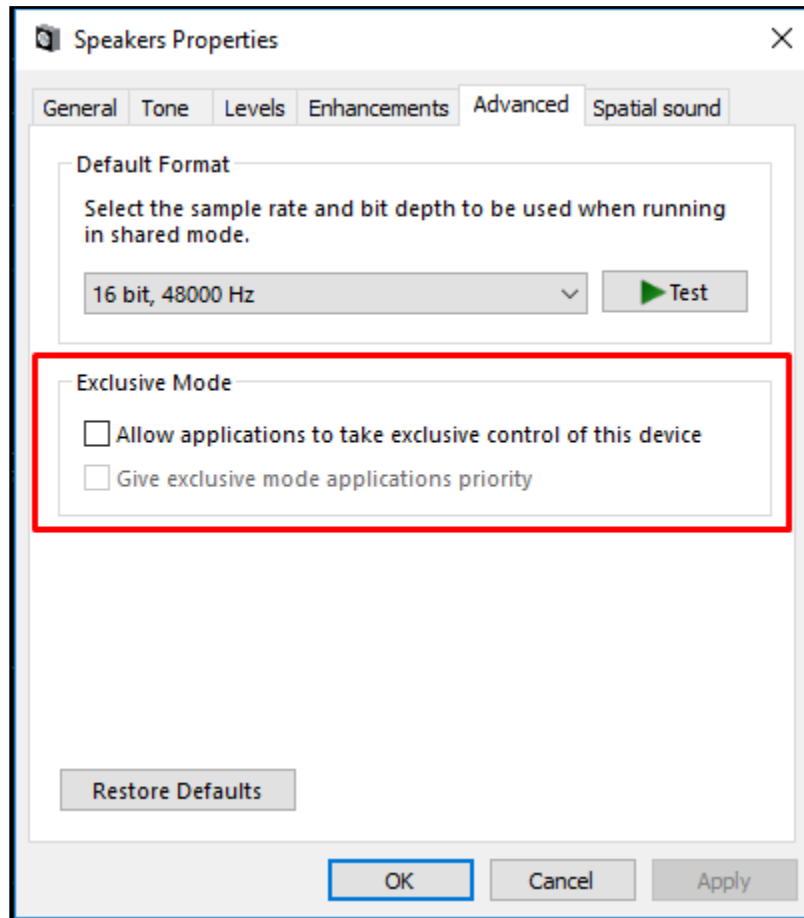
Next, you need to configure your audio devices. First, in the bottom right hand corner of your screen, right click on the sound icon, then choose “Open Sound settings”:



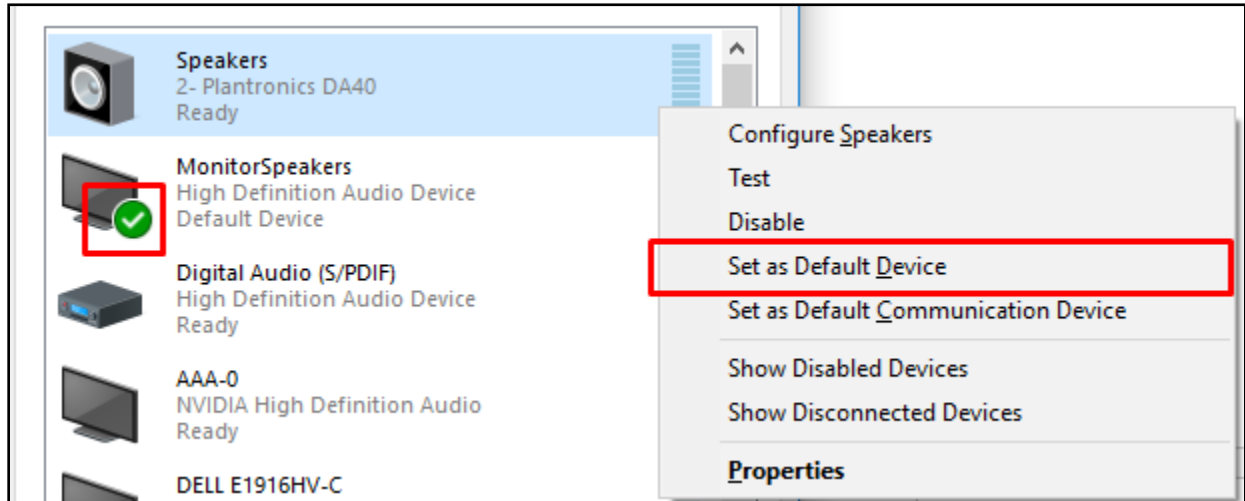
Then click “Sound Control Panel” from “Related Settings”:



In the 'Playback' tab, you'll see all of the audio devices connected to your computer. For each one, double click on the device to bring up a detailed configuration box. Go to the 'Advanced' tab and ensure that both boxes under exclusive mode are unchecked:



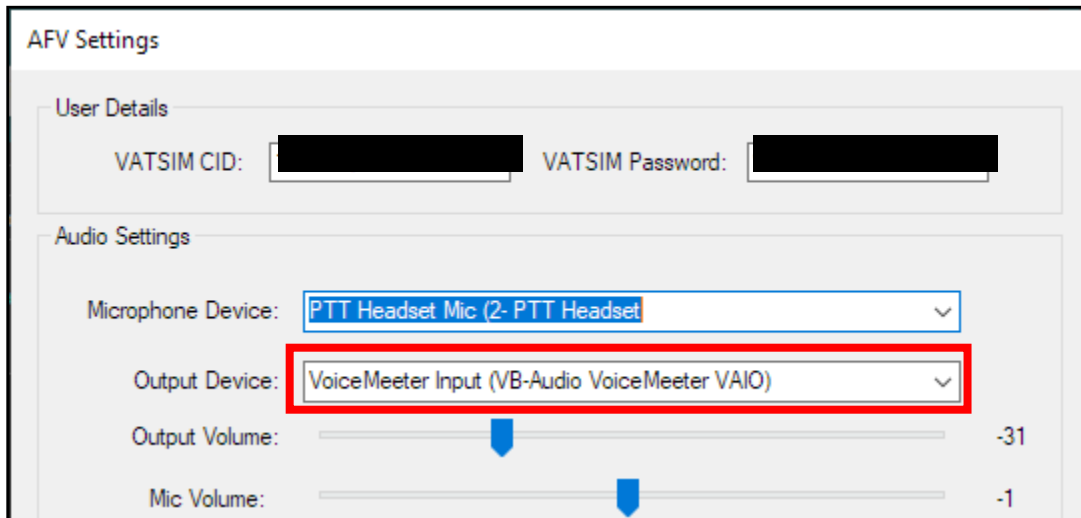
Also, make sure that you have the correct device selected as your default device. Installing VoiceMeeter can override this, so you want to make sure that your monitors, speakers, or other device is correctly set as default. In the same 'Playback Devices' menu, the default device has a green circle with a check mark in the lower right-hand corner of the icon. You can set a device as the default device by right clicking and then selecting 'Set as Default Device.'



Now that that's done, it's time to set up VoiceMeeter! This process isn't exactly the same on all devices, and may involve some trial and error, but the general setup is the same. First, run VoiceMeeter. It is recommended to run it as an Administrator, just as you would for any other controlling or voice client you use.

Inside VoiceMeeter, there are many options that can be used to fine tune the program. These are explained within VoiceMeeter documentation and won't be covered here. In the upper right corner you will see a box that says 'A1.' When you click on that, there will be a drop down with a list of all audio devices. This is where you want to select your headset, or whichever device you want your ATC audio routed through. However, there are multiple versions for each device. You need to test and select whichever one works and sounds best. You should not need to touch any other settings, and you do not need to restart VoiceMeeter each time you change the device. Once you have a device selected that works well, you can minimize VoiceMeeter. It is important to note that for the application to work, you need to have the app running, but minimized. It will NOT route your audio if you do not have the program running.

Next, it is time to go into AFV and select “VoiceMeeter Input” as your audio device:



By doing so, you’re telling AFV to send the output audio into VoiceMeeter, which will then route it to the device you selected with the ‘A1’ menu setting a moment ago.

Recording or Streaming

Network frequencies are public, similar to real-world radios; anyone with a VATSIM membership can listen at any time. Accordingly, controllers are welcome to record, share, or stream while controlling. However, please be cautious when you are sharing your screen, particularly if it’s happening on a live stream. BVA’s Member Expectations and the VATSIM Code of Conduct apply to your activity while connected to the network. In particular, ensure that if you choose to stream or record video from an ATC session, you take precautionary measures that protect against profane or inappropriate content from being shared in the context of a controlling session.

By running through these few steps, you can record high quality videos for use with streaming, making timelapses, or reviewing later. Remember, you’ll be streaming your voice recording, text messages, the controller chat, private messages with other controllers, and several other things—make sure you’re careful with what you share!

Detailed settings for using various streaming and recording software can be found on their respective websites. For this document, we will include detailed information on specific settings which affect recording and controlling streaming. We use the software [Open Broadcaster Software](#) (OBS) Studio for this document, however many of the same principles apply to other software.

Download, install, and open OBS. Under the audio tab, make sure to have VoiceMeeter selected as your audio device. It is also recommended to have Push-to-Talk enabled for your microphone. If you use the same key as your VATSIM Push-to-Talk, you ensure that only VATSIM transmissions are transmitted over your stream/recording.

When setting up a Capture Source in OBS, using a “Game Capture” can allow you to only select your radar screen. This way, your web browser, TeamSpeak, or other computer applications are not broadcast. Select a game capture, then select ‘Capture Specific Window’ and then select your appropriate radar screen. Configuring these screens can take some time, but if you follow these steps you’ll ONLY have VATSIM controlling-related information broadcast on your stream.

