

## Preparing for Hybrid Worship Services

As congregations consider what their worship will look like after COVID, there are some things to keep in mind. Not every one will feel comfortable returning to worship right away. Some in person worship may take place, but how will you reach those who remain home? Broadcasting from the church office or from home may no longer work for you. If you have been using a smart phone, you may need to make some changes. The camera may have to be located in the back of the sanctuary and connected to the sanctuary sound system. Some musicians may still feel more comfortable recording their music from home or in the sanctuary when congregants are not present. Will you want to allow worship participants who are watching remotely to be able to interact live? What software will you use to accomplish this if you decide personal interaction is important to you? Do you have the right equipment? Is your internet connection powerful enough for you to accomplish your goals?

Congregations can do live worship and live stream at the same time, incorporate pre-recorded videos, and allow for people to participate (in a limited manner, there are some technical challenges when you incorporate this) but it all takes careful advanced planning. There are recording/streaming systems that will allow congregations to incorporate the church sound system, multiple views of the worship leaders, presentation software and pre-recorded videos. Here are some ideas that may help in your planning. These systems assume you may be applying for a Tech Grant are kept at the range of \$1000 and slightly over.

**The First Step is make sure you are connected reliably to the internet.** We highly recommend that you find a way to connect directly from your router by Ethernet cable to your sanctuary. Once you have an Ethernet cable to your sanctuary you can add an Ethernet switch from which you can connect your streaming device and any Wi-Fi solution you may want to utilize. If you simply cannot find a way to do this, this article shows ways to get your most reliable Wi-Fi connection into the sanctuary. [Connecting to the internet in your sanctuary](#)

**Note: Why we recommend the ATEM Mini Pro in these systems.** The ATEM Mini Pro allows you to stream to YouTube or Facebook with the push of a button. The basic operation of this mixer allows people with limited technical knowledge to Live Stream worship.



## **Flexible Cost Saving Live Streaming Systems**

**Option 1** (a two camera system is best for live streaming) *Note: the mixer allows you to add at least two cameras and incorporate your presentation software. Several congregations in the presbytery have used a system like this with success.*

**Blackmagic Design ATEM Mini HDMI Live Stream Switcher**  
[\\$295](#)

**Canon VIXIA HF R800 Camcorder** [\\$249](#) x 2 \$498

**Cmple - High-Speed Mini HDMI to HDMI Cable** (HDMI to Mini HDMI) 4K Ready - 10 Feet, Black [\\$8.99 x2](#) = \$17.98 These cables are appropriate if the cameras are side by side close to your mixer. If you decide to have your second camera farther away you will need to adapt to the length of cable you will need. If your camera is farther than 30 ft. away see option at the end of equipment list.

**HDMI cable** [\\$9.95 x2](#) = \$19.90

**Cat6 cable** to connect unit to internet 10' [\\$4.09](#)

**TV for Monitor** \$88 [Walmart](#) any TV with an HDMI input will work

**Ethernet switch** (needed only if you have only one ethernet port in your sanctuary. It is recommended to use a direct feed to your internet provider but in some cases wireless connection will also work if the speed is adequate) [\\$15.99](#)

**Audio Cable** [\\$14.99](#) You may have to study the output of your sanctuary sound mixer to see what cables or adapters you need in order to connect to the Blackmagic Design Mini Pro sound input.

**USB Male to Male CABLE** [\\$5.49](#)

**Total = \$969.44**

### **Optional**

If your 2nd camera is farther away than 30 ft. you will need these adapters

**J-Tech Digital HDMI Extender** [\\$54.69](#)

**Cat6 Ethernet Cable** 50 ft White [\\$17.99](#) This length for the cable is only a suggestion. You will need to measure what length you need depending on the location of the second camera.

The mixer in this system does not have built in live streaming and recording, so you would need to use streaming software similar to OBS, Open Broadcasting Software.  
<https://obsproject.com/>

## Option 2

### Better system with a PTZ camera

*This system incorporates a PTZ camera that can be controlled remotely. A PTZ camera allows for multiple views and presets. Note: the second camera allows you to switch to it while making adjustments on the PTZ camera.*

#### Canon VIXIA HF R800 Camcorder

[\\$249](#)

#### AViPAS AV-1081 HDMI PTZ Camera

[\\$620](#)

#### Blackmagic Design ATEM Mini Pro HDMI Live Stream Switcher

[\\$595](#)

Cmple - High-Speed Mini HDMI to HDMI Cable (HDMI to Mini HDMI) 4K Ready - 10 Feet, Black [\\$8.99](#)

J-Tech Digital HDMI Extender [\\$54.69](#)

Cat 6 Ethernet Cable 50 ft White [\\$17.99](#)

WD USB Hard Drive \$59.99 [Click for Link](#)

USB type-c adapter [\\$19](#) Needed to set up the Blackmagic mini Pro with an available computer or allows for a USB thumbdrive or Hard Drive to enable recording.

*These items may or may not be needed to connect from the presentation computer to the mixer*

StarTech DVI Splitter Cable – DVI \$9.78 [Click for Link](#)

Pearstone DVI to HDMI Adapter, 2-Pack Gold-Plated 1080P Male to Female Converter (Black) \$5.50 [Click for link](#)

**Total = \$1624.66 option for using less expensive mixer subtract \$300**

### Option 3

**Same system as above except for the replacing of the ATEM mini Pro mixer with the ATEM Mini mixer - save \$300**

**Blackmagic Design ATEM Mini HDMI Live Stream Switcher**  
[\\$295](#)

**Total \$1310**

This mixer does not have built in live streaming and recording, so you would need to use streaming software similar to OBS, Open Broadcasting Software. <https://obsproject.com/>

### Option 4

**Simple system with a PTZ camera**

**AViPAS AV-1082W Full HD USB 3.0 PTZ Camera (White)** [\\$620](#)

This is a USB camera and does not require a mixer. However, you will need a computer or laptop and software like OBS to live stream and record. <https://obsproject.com/>

#### **These items may be needed.**

This adapter will let you capture audio directly from your sound mixer in the sanctuary. [Adapter costs \\$20](#) (note: adjust input volume for organ music)

You will also need a cable and probably an adapter so you can connect to your sound mixer. It depends on what kind of audio out jacks you have on your sound mixer when considering what cable or adapter you will need. Many sound mixers have RCA tape record out jacks. Since the sound capture device above has RCA inputs, this cable would work. [For mixers up to 10 feet away \\$20](#) [For mixers that are up to 50 feet away \\$26](#). More lengths available.

If you have only quarter inch outputs on you sound mixer you will need these adapters. [\\$10](#)

If you have female XLR out jacks only you will need this [\\$10 adapter](#)

If you have male XLR outputs only you will need [2 of these \\$8 adapters](#)

The PTZ camera can be mounted on a wall, a shelf or on a tripod.

With

This system gives you multiple views with the camera with multiple presets and can be controlled remotely. However, keep in mind that since you would only have one camera people will see the movement of the camera as you switch scenes.

*A way around this would be to add a second USB webcam. That way you can switch to the second camera while you are making adjustments to your PTZ camera. After adjustments, you can then switch back to the PTZ camera. Switching cameras views is done in the OBS software.*

## Software considerations for live streaming

**OBS software** - With this software, you can record your videos or live stream to YouTube or Facebook. OBS is a very flexible system allowing you to incorporate multiple cameras, graphics, sound sources and presentation software. It can be used with any of the hardware options above. <https://obsproject.com/>

**YouTube and Facebook** - These platforms give you a high quality live stream. However, interaction with the congregation is limited. To interact you are limited to live chat during the stream or Zoom meeting (or similar platforms) for live discussion and prayer before or after the live stream.

**Zoom Meetings** - The advantage of this platform is that you can live stream your worship, muting participant mics until you want to allow interaction. (note: if you don't mute the mics your live stream audio can suffer greatly) When you are ready for comments, prayer concerns or minute for missions from people watching remotely, you can unmute mics individually. (note: this could cause some confusion for users and worship leaders but it could yield a much more interactive experience.)

Also you can live stream to YouTube or Facebook at the same time you are using Zoom.

**Important note on the quality of the live stream.** Zoom default settings don't necessarily allow for high quality audio when you are live streaming music. See this article that gives ideas on adjusting settings so that music will sound much better on your live stream.

[Better Music in Zoom](#)