



So, you've got your livestream set up and it's ready to go, but have you considered the sound? As a viewer, it's difficult to listen for very long to distant, echoey sound. In fact, those watching online are more likely to turn off if the sound isn't clear, but will put up with a poor visual.

# Microphones for speakers

So, in a lively church acoustic the microphone(s) need to be close to the person speaking – no more than a metre away. Mics need to be much closer to the action than the camera.

**The built-in mics in smart phones / devices** are really not at all good for use other than person-to-person Zoom, Facetime etc. Sound engineers would advise against trying to use them to cover worship.

You may be bewildered by the huge number of apparently different microphone types. But they are basically very similar contents in a variety of packages.

Microphones can be classified in a number of different ways but typically you will hear about dynamic, condenser, shotgun and lapel microphones when it comes to livestreaming. The first two cover quite a wide range of microphones in themselves and depending on the application, you would choose one over the other.

**Dynamic microphones** need to be very close to the speaker but provide a focussed and clear sound since they work well at rejecting sound from the back and sides of the microphone.

The style of microphone that is most commonly referred to as a condenser, can usually be categorised into large and small diaphragm (or pencil microphones), the latter typically used for stereo recordings. Condenser microphones are more sensitive than dynamics and will pick up more of the acoustic of the space you are in, as well as more background sound.

**Shotgun microphones**, typically used when shooting film, can also be used, although they have a very narrow polar pattern, which means they will only really pick up what they're directly pointed at and are not very useful for musical applications.

**Lapels** are also commonly used when shooting film and clip onto your clothing, meaning that they are ideal for livestreaming applications where you don't want to be confined by a stationary microphone. They are also less obtrusive in your shot and since they can be used as a radio mic (i.e. wirelessly) they give more freedom when filming.

If you already have microphones and a PA system, consider taking a feed from the mixer, and incorporating this into the livestream. This would usually involve running a cable from the PA mixer (there's usually a way of deriving an output) to the audio interface (see below) which is feeding the livestream.

A separate mic or mics will cover general congregational response and organ or music group and feeds into this mixer. It helps viewers to feel

included in the service if you can hear the congregation. For congregation and music recording, a pair of small diaphragm condensers is ideal, although a well-placed single large diaphragm condenser can work equally well, particularly for livestreaming. This is because they capture a wide sound image, and you may need to have multiple sources on one microphone.

For the livestream/recording the sound needs to be converted before goes into the computer/laptop. Typically, an audio cable (such as an XLR cable) will run into an audio interface (explained below), however some microphones can be purchased that have a USB output and plug directly into a computer.

To convert the sound, you will need some form of audio interface. You may be using a livestreaming interface which has audio inputs on it and this will work fine. Otherwise you will need a dedicated audio interface, which can be inexpensive but increase in price with the number of microphone inputs required (e.g. 1 input interfaces can be had for around £60 but 8 input interfaces start at around £250).

It is possible that if you have a mixer, it might have USB recording capabilities, in which case you just need to run a USB cable from the mixer to your computer and it will act as an audio interface.

A note on USB microphones: USB devices don't like long (5M plus) cables. They can be an option if you just need one mic, fairly close to the laptop and the sound source. You need a software solution in the laptop to switch between more than one mic (for example OBS). USB microphones have their own independent level controls which can be more difficult to adjust in the moment compared to using an audio interface or mixer that feeds into an audio interface.

The audio interface/mixer needs to be operated during the service to select inputs and carefully control sound levels to be neither too quiet nor loud and distorted for the home viewer.

## Smartphones

Typical smartphone external mics can be any of the microphone types mentioned above however you are often limited to an individual microphone, which may not be ideal (however, twin lapel microphones are cheaply available).

It is worth mentioning however, that most modern audio interfaces work with modern smartphones, so if you are using your phone as a camera, you would likely be able to plug in an audio interface if you wish to set up this way.

[A list of small budget microphones can be found here.](#)

[Church Care have created a useful guide for AV equipment in church buildings](#)

St Andrew's Church, Ashburton:

We recently did a livestream test on our Facebook page to check how well our iPad plug-in microphone was picking up sound in the church. We told people it was a test and asked them to comment on the sound quality. We had more views and comments than we would get normally!

People seemed enjoy giving feedback.

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