

Technology required for the main Hybrid Meeting setup, Friends Meeting at Cambridge

Luxor plastic AV cart, 54" tall

6" plastic riser platform for projector

(these two are needed because the height required to project the image above the fireplace in the Meeting House is approximately 60")

Projector: Optoma GT1090HDR

(chosen as the brightest consumer-grade short-throw projector. Short-throw is necessary for us because the distance between the projector location and the wall is approximately 46")

Laptop: Asus Zenbook 14

(Any laptop with a discrete video card, an HDMI port, a headphone jack, and at least two USB ports will work. It's also best if the display resolution matches the resolution of the projector. 1080p is fairly standard at this point for both. This one was chosen because it was available locally)

Wireless microphone set, any model.

(We recommend VHF as opposed to UHF if you don't have line-of-sight between mics and receiver. The model we use has AA batteries powering the microphones, but you can get rechargeable models as well. Look for a model that has a mix out rather than two individual outs for each mic)

Focusrite Scarlett Solo

(Allows any standard mic or line input to be transmitted to the laptop via USB. There are other models -- we are using a Scarlett 2i4 which was donated to us, but a Solo is enough. If you go with an MAudio or some other brand, just make sure it has an XLR or 1/4" input, a 1/4" output, and a monitor out)

Coolpo AI Huddle Pana 360-degree conference camera

(Or just "Pana" for short. We use this instead of the Meeting Owl because it outperformed that device in a side-by-side test and is also less expensive)

Anchor AN-130 powered speaker

(This was already on the cart; any powered speaker with two inputs that can be used concurrently will work. The AN-130 has RCA inputs as well as 1/4").

Long Active USB extension cable

(Ours is 30' long; we could probably have made it with 20' but YMMV. It is important that it be "active" because the extra length weakens the signal. The active nature of the cable helps the signal remain strong)

HDMI cable

(length from projector to laptop)

Y-cord
(RCA to 1/8" cable; approximately 4-6' long)

1/4" patch cable
(balanced or unbalanced, 3-6' long or distance from Scarlett box to speaker)

XLR to 1/4" cable
(3-6' long or distance from wireless mic base station to Scarlett box. Another patch cable like the above would also work here, as the Scarlett has both XLR and 1/4" inputs)

Power strip, grounded, 8-port
(extra length is useful to accommodate power bricks)

Ungrounded extension cable
(same length as active USB cable above)

Connections:

Projector is connected to power and via HDMI cable to laptop

Wireless mic base station is connected to power and via patch cable to Scarlett box

Scarlett box is connected to wireless mic base station and speaker's aux input by patch cables, and to laptop by USB cable

Pana is connected via active USB cable to laptop and via ungrounded extension cable to power strip

Speaker is connected via Y-cord to laptop's headphone jack and via patch cord to Scarlett box's monitor out

Laptop is connected to power, to Pana and Scarlett box by USB, to projector via HDMI, and to speaker via headphone jack.

Setup:

Cart is set up with all connections made except power and Pana; cart can be wheeled in and positioned at the fireplace end of the Meeting House. Lock the locking wheels (closest to the wall) once it's in position. Plug in the power strip; all devices should now have access to power.

Position the Pana on a table in the center of the Meeting House. Extend the long active USB cable and power extension cord toward the Pana and connect it to both. Smooth out the cord covers to keep people from tripping over them.

Power on the laptop and log in (password is "georgefox").

Power on the projector; the input should already be set to HDMI-1 but can be changed easily via the remote if not). The projector should already be positioned so that the image is at the correct height; any fine-tuning can be done with the keystone keys on the projector itself. There is also a focus ring on the lens.

The laptop should already be mirroring the display to the projector; if not, check display settings or look for a display mirroring Function key. Also, check to make sure the audio output device is set to Headphones (see the speaker icon in the lower right)

Check to see that the wireless microphones have sufficient battery power and replace AA batteries if necessary. Power on the wireless microphone base station and speaker if not already on. Power on the Pana.

Join the Zoom meeting. Make sure the video is set to the Coolpo Pana, the microphone is set to the Scarlett box, and the speaker is set to Headphones or "same as system". Set the Zoom meeting to gallery view and enable fullscreen mode. Verify that the image is clear on the projector as well.

During meeting:

The on-site Tech Host will have their own laptop with which they can communicate with the remote Tech Host etc.

As long as everything continues working, the only thing necessary is to periodically adjust the speaker's volume in response to low or high volume sources. If someone is speaking very loudly into the microphone and there is distortion ("pegging") occurring, the input volume on the Scarlett box should be adjusted instead of or in addition to the speaker volume.

Handheld wireless microphones should be left off unless someone is using them. Microphones should be held "like an ice cream cone" no more than 6" from a person's mouth. People speaking too loud can be encouraged to back the microphone away from their mouth a bit more to reduce distortion. Zoom will pick up good sound even if the microphone is held much further away, but the speaker in the MH will only work if the mic is used "properly".

Technology required for the Afterthoughts/smaller Hybrid Meeting setup, Friends Meeting at Cambridge

Luxor plastic AV cart, 41" tall

Projector: Epson Home Cinema 1080

(chosen as an upgrade from an older projector in use since 2008. This model is brighter, has modern connectivity like HDMI, and costs half what the MH's projector costs. There is no need for a short-throw lens here, since there are projector screens on two walls in the Friends Room and ample throw distance in other rooms where this might be used. We are using a simple flat-screen TV with HDMI input until the projector is available)

Laptop: Asus Zenbook 14

(Any laptop with a discrete video card, an HDMI port, a headphone jack, and at least two USB ports will work. It's also best if the display resolution matches the resolution of the projector. 1080p is fairly standard at this point for both. This one was chosen because it was available locally. Same model as the one used for the MH)

Wireless microphone set, any model.

(We recommend VHF as opposed to UHF if you don't have line-of-sight between mics and receiver. The model we use has AA batteries powering the microphones, but you can get rechargeable models as well. Look for a model that has a mix out rather than two individual outs for each mic)

Focusrite Scarlett Solo

(Allows any standard mic or line input to be transmitted to the laptop via USB. There are other models -- we are using a Scarlett 2i4 which was donated to us, but a Solo is enough. If you go with an MAudio or some other brand, just make sure it has an XLR or 1/4" input, a 1/4" output, and a monitor out)

Coolpo AI Huddle Pana 360-degree conference camera

(Or just "Pana" for short. We use this instead of the Meeting Owl because it outperformed that device in a side-by-side test and is also less expensive)

AmazonBasics FGA-5B

(The Anchor model used in the MH is no longer available but similar models from Behringer, Pyle, etc will work. AmazonBasics has a stripped-down model which we're using for now).

Long USB extension cable

(No need for "active" status here as the distance from the cart to the Pana is likely to be no more than 10-15')

HDMI cable

(length from projector to laptop)

Headphone patch cable

(1/8" male to 1/8" male)

1/4" patch cable

(balanced or unbalanced, 3-6' long or distance from Scarlett box to speaker)

XLR to 1/4" cable

(3-6' long or distance from wireless mic base station to Scarlett box. Another patch cable like the above would also work here, as the Scarlett has both XLR and 1/4" inputs)

Power strip, grounded, 8-port

(extra length is useful to accommodate power bricks)

Ungrounded extension cable

(same length as long USB cable above)

Setup:

Afterthoughts in the Friends Room is in flux, and will likely eventually be in the Far Parlor where it normally occurs. Setup can be done the same way as in the MH, but seating will need to be positioned so that one of the projector screens is visible behind the cart.