Control Room Instructions

https:// avdocs.mansfieldtexas.gov/

Matthew Reid

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Contents:

1 Startup

1.1 Rack Power

- In the *Wall Rack*, find the *Power Conditioner* located at the very top (see Fig. 1.1).

- Flip the switch on the far right to "ON"

- This powers up the "things that make the video go" so you should see some blinky lights and other fun activity 🆒

Fig. 1.1: Rack Power

1.2 Controllers

There are two controllers on the desk beneath the window. The one on the left is the *Switcher Controller* and it controls the *Video Switcher*. (seems logical, right?) The one on the right is the *Camera Controller* because well, it controls the cameras 🤭.

1.2.1 Switcher Controller

The *Switcher Controller* has no power switch, so it has to be plugged in:

- On the back, there are two network cables and one of them is slightly unplugged (see Fig. 1.2)

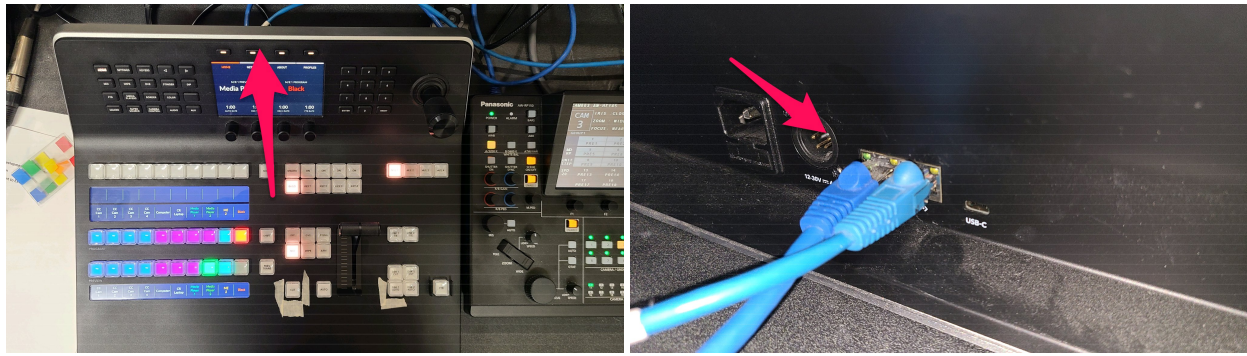- Plug it in and it will begin to boot up after a few seconds

Fig. 1.2: Switcher Power

1.2.2 Camera Controller

The *Camera Controller* has a power switch on the back left side (see Fig. 1.3).

Turn it on and it will begin to boot. It will also power up all of the cameras once it completes.

Fig. 1.3: Camera Controller Power

1.2.3 Monitors

There are two LCD monitors directly above the *Switcher Controller* and *Camera Controller*. These are used to preview video sources and other items (also known as *MultiView Monitors*).

Turn both of these on.

> 💡 **Hint**
>
> - The power button for the one on the left is on the bottom (below the LG logo)
> - The power button for the one on the right is on the right edge (bottom button)

After about 30 seconds, all seven cameras should become visible in the left *MultiView Monitor*. You should see something like what is shown in Fig. 1.4.

Fig. 1.4: Multiview Screen

1.3 Audio

Locate the *Crestron Touch Panel* on the desk to the left of the *Switcher Controller*. If it's blank, wake it up by tapping the screen.

On the *Touch Panel*:

1. Go to the `Mic Controls` page by selecting it from the menu at the top
2. Unmute the channel labeled "WLS-2"
3. Unmute the Dais and Podium channels (as needed)

You should see something like what's shown in Fig. 1.5 and during the meeting, you should also be able to hear everything from the speaker above the *Touch Panel*.

If you cannot hear it, it won't be recorded!

> ⚠️ **Warning**
>
> Step 1 above must not be overlooked. "WLS-2" mutes/un-mutes the audio going into the video system so it must be un-muted (NOT RED).

> ℹ️ **Note**
>
> If the meeting is in the Multi-Purpose Room, you'll need to follow the steps in *Audio* (page 10).
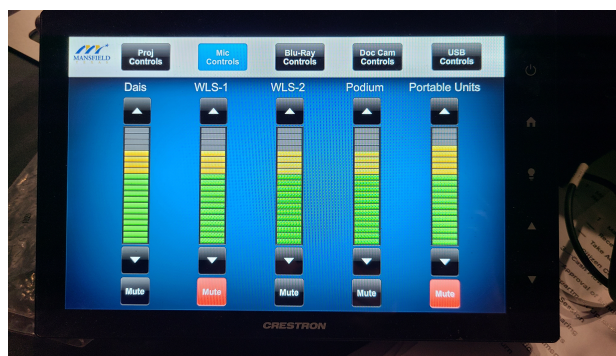

Fig. 1.5: Touch Panel

1.4 Live Encoder

The *Live Encoder* is located at the very bottom of the *Wall Rack*.

- It should already be on.

- In the unlikely event that it is not, begin to panic 🚨.

    - (Just kidding, it stays on all the time 😂)

- Press the button on the far right of the front panel to start the stream.
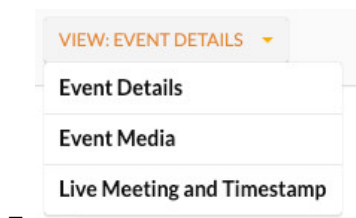
    - It should turn blue when it's encoding.

> 💡 **Hint**
>
> It's the one that looks like a sideways Wi-Fi symbol.

Fig. 1.6: Live Encoder

1.5 CivicClerk

- Go to the Events[1] page in *CivicClerk* and find the event for the current meeting.

- Open it, then go to the "Live Meeting and Timestamp" tab by first clicking on the VIEW: EVENT DETAILS ▼ button.

- If there are no agenda items shown, you can add them by clicking the ⬆ IMPORT AGENDA button.

We'll come back to this later, but it's good to have it open now.

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[1] https://mansfieldtx.v8.civicclerk.com/Events

2 Before the Meeting

2.1 Routing

The video routing must be switched from our *Off Air* feed to our *On Air* feed.

In the *Wall Rack*, find the device labeled "Blackmagic Smart VideoHub". It's a silver unit with white buttons and a small screen. See Fig. 2.1 for details.

Fig. 2.1: VideoHub Location

We'll refer to this as the *VideoHub* from now on.

On the *VideoHub*:

1. Press the DEST button if it is not lit
2. Press 3 (it may be lit already, but just in case)
   - On the screen, you should now see "Brightsign" on the bottom left and "PGM" on the bottom right
   - If the label on the bottom left doesn't say "Brightsign", that's ok. The bottom right is the important one
3. Now press SRC
   - The SRC button should be lit and the TAKE button should be lit in red
   - The numbered button on the left probably changed, but this is OK!
4. Press 2
   - You should now see the CLEAR and TAKE buttons blinking
   - The labels on the display should say "ATEM PGM" on the left and "PGM" on the right
5. Press TAKE
   - The buttons should now be all off and the labels on the display should still say "ATEM PGM" and "PGM"

🎉 Congratulations! You are now live, but you've probably noticed you're sending a black image everywhere. We'll get to that.

2.2 Recording

Towards the top of the *Wall Rack*, there are two recorders within then same row (rack unit). They're shown in Fig. 2.2. We'll call these *HyperDecks* from now on.

Fig. 2.2: HyperDeck Location

- Press the record button ⬜ on each *HyperDeck*
    - You should see it lit in red during recording
    - You should also see a red indicator lit above the SD card for each unit

2.3 Streaming

To start the live stream, go to the Event Page in *CivicClerk*.

- Make sure you are on the "Live Meeting and Timestamp" tab.

- Click on the [● SET LIVE] button.

- Immediately after, make sure to set the "Actual start time" by clicking on the [SET TO CURRENT TIME] button:

    Actual Start Time

    | 12:00:00 AM | 🕐 | SET TO CURRENT TIME |

    –

ⓘ **Important**

🚨 Always set the "Actual Start Time" directly after clicking "Set Live" 🚨

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3 During the Meeting

3.1 "Easy Mode"

If you just want to show a wide camera shot and be done with it, this is the section for you.

3.1.1 Chambers

- There are three rows of buttons with labels on the *Switcher Controller*
- Press the first button (from the left) on the middle row (see Fig. 3.1)
- It should now be lit in red and you should see the camera on the top right window of the *MultiView Monitor*

Fig. 3.1: Easy Mode Switcher

3.1.2 Multi-Purpose Room

If the meeting is in the Multi-Purpose Room, you'll need to do a couple of things..

Cameras

- There are three rows of buttons with labels on the *Switcher Controller*
- Find the button on the right side of the middle row that says SHIFT (see Fig. 3.1)
- Hold down the SHIFT button
  - You'll notice the labels on the buttons change to MP Cam 1, MP Cam 2, etc.
- Press the first button (from the left) on that same row.
- It should now be lit in red and you should see the camera on the top right window of the *MultiView Monitor*

That was pretty easy, but we haven't gotten to the audio part.

Audio

You will need to access the *DSP* using a web browser. It's important that you are on the City network for this. It can be either wired or wireless (not the guest network though).

- In the next step, you will see a warning about the certificate being invalid. **This is normal** so don't be alarmed.

- Open a web browser and go the following URL:[2]
  - https://10.10.1.110/uci-viewer/?uci=MPRoom&file=2.UCI.xml&directory=/designs/current_design/UCIs/

- When the warning appears:
  - Click on the "Advanced" button
  - Click on the "Proceed to … (unsafe)" link

- Once the page loads, you should see a screen similar to the one shown in Fig. 3.2.

- Select between "Chambers" and "Multi-Purpose Room" using the two buttons.

- You will also need to unmute the "WLS-2" channel as shown in *Audio* (page 5) to send audio to the video system.
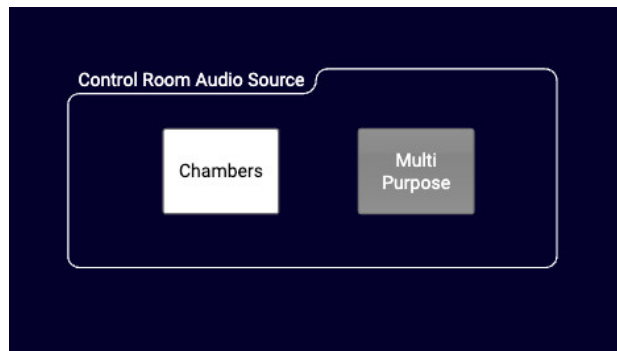
Fig. 3.2: DSP Interface

> ℹ **Note**
>
> If this is all you want to do, you can skip to the section titled *After the Meeting* (page 15).

3.2 Advanced Mode

> ⚠ **Warning**
>
> This section is for those who want to get a little nerdy 🤓

3.2.1 Switching Video

Your main area of focus is the left *MultiView Monitor*. You should see two large windows at the top and eight small ones below.

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[2] If you're reading this on the printed version, I am so very sorry 😬

The top two are "Preview" and "Program" (respectively). "Program" is what you're sending out (live, on-air, etc) and "Preview" can be thought of as "what you want to send next". These are also referred to as buses (*Program Bus* and *Preview Bus*).

The buttons on the *Switcher Controller* allow you to select what goes to each bus. They also light up to indicate what's selected. This is called *Tally*. The green tally shows what's on preview and the red tally indicates what's going to program. You'll also see the borders on the *MultiView Monitors* following the same convention.

The bottom row controls the *Preview Bus* and the next row up controls the *Program Bus*.

Typically you want to select a source on preview then take it "live" using either the CUT or AUTO button found to the left of the "T Bar". CUT performs a direct cut (self-explanatory) and AUTO will do a dissolve transition (or "fade").

Afterwards, whatever was on preview goes over to program and vice-versa. This is where the *Tally* indicators come in handy.

Layout (Chambers Cameras)

- The cameras for council chambers are mapped to sources 1-4 on the *Switcher Controller* (labeled CC Cam 1 (2, 3, 4))

- The computer input (Dais laptop / Podium) is mapped to source 5 on the switcher (labeled "Computer") and its preview can be found on the right *MultiView Monitor*

Layout (Multi-Purpose Room)

The cameras for the multi-purpose room are mapped to a second "layer" on the switcher.

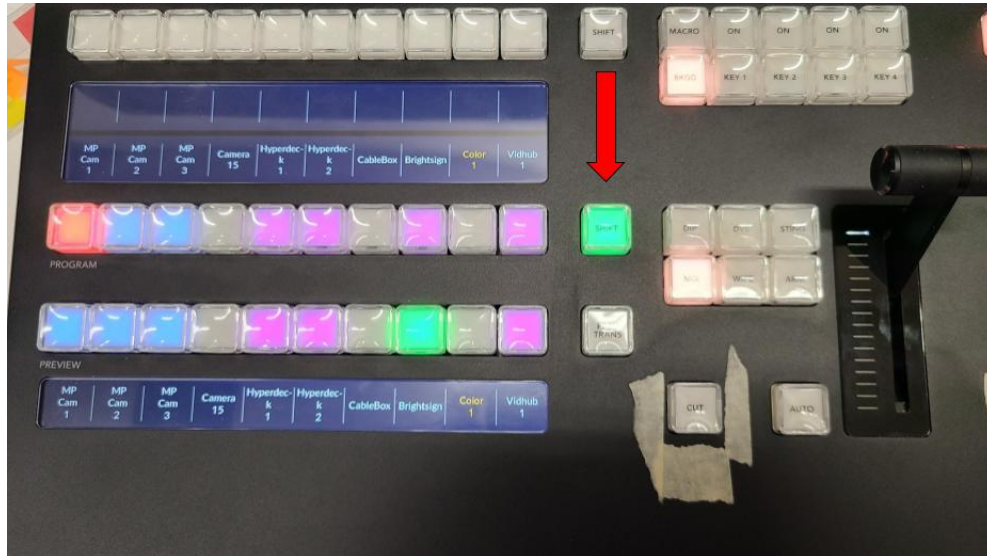To change layers, find the SHIFT button directly to the right of the "Program" row

Fig. 3.3: Shift Button

You can press and hold SHIFT to temporarily use the second layer, or double-tap it to toggle between the two layers.

While the second layer is active, the SHIFT button will be lit in green. The multi-purpose room cameras will then be on the first three source buttons (labeled MP Cam 1 (2, 3)).

3.2.2 Camera Control

The *Camera Controller* on the right handles all seven cameras, but obviously only one at a time. To select which camera you want to control, use the selection buttons (numbered 1 through 10 below the touch screen).

Fig. 3.4: Camera Controller Overview

The button for the currently selected camera will be (in most cases) lit in amber (aka orange). It's also shown on the screen (top-left).

Sometimes, you'll notice the selected camera button change to red. This just means that camera is currently "live" on the *Program Bus* (more *Tally* goodness).

- The cameras for council chambers are mapped to buttons 1-4

- The MP Room cameras are on 6-8

- The ordering for both sets of cameras is identical to the switcher and multi-view monitor (for obvious reasons)

> ℹ **Note**
>
> The estute among you may have noticed that we skipped number 5. That's intentional since it's easier to have them on separate rows.

Touch Screen Views

On the screen you should see one of two layouts shown in Fig. 3.5.

Fig. 3.5: Camera Screens

Since you'll probably just want to use presets, you can get to the Preset Screen (the right image above) using the Up/Down triangly-looking buttons to the right of the touch screen. They are physical buttons lit in yellow (shown in Fig. 3.6).

Fig. 3.6: Navigation Buttons

Presets

Once in the Preset screen, you can recall the desired preset for the selected camera using the buttons on the touch screen.
The current preset layout is:

- Chambers
  - Camera 1
    * `PRE 1` is the "go-to" wide shot I use
  - Camera 2
    * `PRE 1` is a tight shot of the "Mayor" position
  - Camera 3
    * `PRE 1` through `PRE 10` are tight shots for each position on the Dais (from left to right)
    * `PRE 11` and `PRE 12` are the two positions on either side of the Dais (Assistant Secretary and Assistant City Manager respectively)
    * `PRE 20` is a backup wide shot in case I have camera 1 planted somewhere else
  - Camera 4
    * `PRE 1` is a good starting point for the podium shot (may need adjusting depending on the person's height)
- MP Room
  - All cameras (5, 6, 7) just have `PRE 1` set up as a starting point. 🤷

4 After the Meeting

4.1 Audio

In the `Mic Controls` page of the *Touch Panel*, make sure all of the audio sources are muted (Mute buttons should be red).

4.2 Recorders / Stream

- In the *CivicClerk* Event Page:
  - Set the "Meeting End Time" to the current time

    *
  - Click the **● END LIVE** button
  - You should see a popup saying that the video is being processed. You can close the page after this.
- In the *Wall Rack*, find the two *HyperDecks* and the *Live Encoder*:
  - Press the `Stop ☐` button on both *HyperDecks*
  - On the *Live Encoder*, press the blue streaming button to stop the stream. It should now be white.

4.3 Routing

The main video feed needs to be switched back to the *Off Air* feed. This is so we always have a pretty picture going to our cable channel.

Once again, we'll do this on the *VideoHub* located in the *Wall Rack*.

> **ℹ Note**
>
> Before doing this, make sure all recordings and streams have been stopped

On the *VideoHub*:

1. Press `DEST` then `3`
- Both `DEST` and `3` should be lit
- The labels on the display should say "ATEM PGM" on the bottom-left and "PGM" on the bottom-right
2. Press `SRC` then `9`
- Both `SRC` and `9` should be lit and the `CLEAR` and `TAKE` buttons should be flashing
- The labels on the display should say "Brightsign" (bottom-left) and "PGM" (bottom-right)
3. Press `TAKE`
- The buttons should all be off and the labels should still say "Brightsign" and "PGM"

5 Shutdown

5.1 Cameras

The camera controller does not automatically shut the cameras down, so please be kind and shut them down manually 😇

On the *Camera Controller*:

1. Press the `SYSTEM` button to show the system page (see Fig. 5.1)
2. Turn the `F1` knob shown in Fig. 5.2 until the text under "CAM POWER" says "ALL OFF" (in yellow)
3. Press down ↓ on the F1 knob (it's a button too)
- The text should go back to "NON" (whatever that means) and no longer be yellow
- The indicators for the cameras (below the screen and its knobs) should go from green to amber (aka "orange") as shown in Fig. 5.3
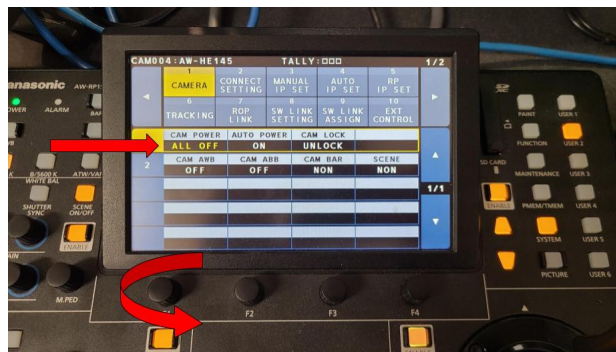
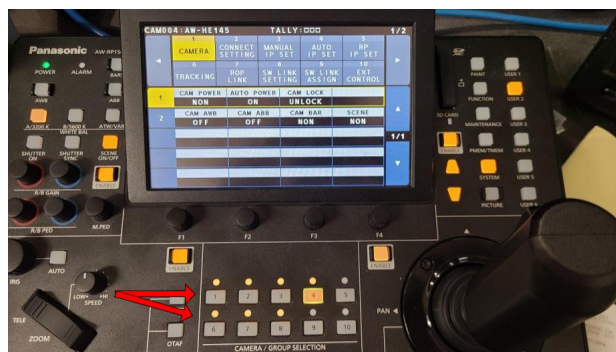

Fig. 5.1: System Button

Fig. 5.2: F1 Knob

Fig. 5.3: Final Result

🧑 Thank you for that! 🏆

5.2 Controllers

1. Turn off the *Camera Controller* using the switch on the back left side (after shutting down the cameras, of course). See Fig. 1.3 for details.

2. Slightly unplug the network connector on the back of the *Switcher Controller* (since there's no power switch 😒).

   - This should be the one on the right (see Fig. 1.2 for details).

3. If you don't mind, please also turn off the video monitors since they won't do it automatically.

5.3 Rack

> ☢️ **Caution**
>
> 🚨 Before doing this, make sure all recordings / streams have been stopped! 🚨
>
> All steps from the *Recorders / Stream* (page 15) section should have been followed at this point.
>
> The *HyperDecks* in the rack should not have anything lit up except the stop ⬜ buttons. Data loss is likely if they're still writing to their SD cards!

- In the *Wall Rack*, turn off the switch on the *Power Conditioner* (see Fig. 1.1)

🎉 That's it, congratulations! You can finally go home 😎

6 Appendix A: Room Setup

These are things I do before each meeting outside of the control room setup. Different boards will have different requirements and if you aren't running one of the following meetings, you can ignore this section:

- City Council
- Planning and Zoning
- MPFDC (Parks)
- MEDC

6.1 Laptop

The laptop used for meetings is in the control room next to the black filing cabinet. It has a green label on it that says "Dais Laptop".

The power supply and a presentation remote are in the front pocket of the laptop bag.

1. Set it up at the Assistant City Secretary's section (where Keera sits).
2. There's a power strip on the floor directly below. Make sure it's turned on and use this to for the laptop's power supply.
3. Plug the HDMI cable and USB hub into the laptop.
4. Ensure it displays correctly by selecting "Meeting Input" on the touch screen.
5. Plug the presentation remote dongle into the laptop and set it at the podium (make sure the remote is turned on).
6. Go to each position on the Dais and turn on the monitors. The power button is on the bottom right.
7. Turn on the podium monitor by pressing the power button on the bottom right.
8. Make sure the annotation system works by drawing a happy face on the screen.
- You should see it on the LED screens as well as the podium monitor.
- Be sure to clear the happy face afterwards 😂

6.2 Voting

> **ⓘ Note**
>
> This is only required for the following boards:
>
> - City Council
>
> - Planning and Zoning
>
> - MPFDC (but they should be fine without it)
>
> If you aren't running one of these, you can skip this section.

You will need to set up and test the voting system before the meeting starts. During the meeting, the board's liason will handle the rest.

1. Make sure the USB hub is plugged into the laptop.
2. Double-click on the "Deliberator" icon on the desktop.
3. Use `File -> Open` and select the file for the board you are setting up.
4. Towards the bottom, there are four tabs with the last one labeled "Vote". Click it to select.
5. You should now see "Voting Control" below the tabs. Click on the "Vote" button to start testing the voting system.
6. Walk around to each voting position to check the devices
- Each voter's device should be flashing.
- Press one of the vote buttons and watch the LED screen to make sure the name matches with the position.
- Hint: I usually turn on the monitors at this time for efficiency 😎.
7. If everything looks good, click the "Clear" button to stop testing.

6.3 Speaker Timer

For City Council meetings, you will need to set up the *Speaker Timer*. It's the beige box next to where the laptop is set up.

1. Flip the power switch on the back to turn it on.

2. Set the "Total Time" to 5:00 (5 minutes) by pressing the + and − buttons labelled "Set Total Time".

3. Set the "Sum-Up Time" to 0:30 (30 seconds).

   • To adjust in seconds, you will first need to press the "Seconds" button on the bottom left.

   • Use the + and − buttons labelled "Set Sum-Up Time" to adjust the time.

4. Set the buttons on the left column so that "Blink" and "Beep" are the only ones lit.

6.4 Digital Nameplates

6.4.1 Powering On and Off

There are three remotes at the Assistant City Secretary's section. Two of them are for the nameplates (labeled "Nameplates - Middle" and "Nameplates - Sides").[3]

You'll need to hold the remote below the nameplates and point it upwards to turn them on and off.

6.4.2 Control Dashboard

In order to change what's shown on the nameplates, you will need to use the control dashboard. This allows you to select which "Board" is currently active, which will update the nameplates accordingly.

> ⏸ **Important**
>
> You will need to be connected to the city network (either wired or wireless) to access the control dashboard. The guest network will not work for this.

1. Navigate to the control dashboard at http://mansf-granicus_live.ci.mansfield.tx.us/

2. Click on the Account menu in the top right corner to log in.

3. Click on the "Boards" tab at the top to show the list of boards.

4. Select the board you want to make active by clicking on the radio button next to it. The nameplates will update automatically to show the current board.

6.5 Post-Meeting

Pretty much just do the reverse of the above. Make sure the power strip is turned off and the laptop is put away (don't forget about the presentation remote).

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[3] I have no idea why they don't all operate from the same remote, but ¯_(⍨)_/¯

7 Glossary

Wall Rack

> The medium-sized equipment rack mounted on the wall near the corner of the control room.

Power Conditioner

> A `SurgeX 1115-RT` power distribution unit located in the *Wall Rack* at the very top. This device feeds all equipment in the rack. The equipment that is meant to stay powered is intentionally plugged into outlets which are not affected by the power switch on the front.
>
> Items that are meant to be powered only while in use are plugged into the "switched" outlets, making it easier to turn everything on and off.

Video Switcher

> The device that takes all video and audio sources (cameras and computer feeds), processes them and sends the final result to be recorded and streamed. It is a `Blackmagic ATEM Constellation HD 2 M/E` and is located in the *Wall Rack* about halfway up from the bottom.

VideoHub

> A device that takes multiple video sources and distrubutes them to multiple destinations. It is a `Blackmagic Smart VideoHub CleanSwitch 12x12` and can be found in the *Wall Rack* below the *Video Switcher*, recognizable as a silver unit with white "rubbery" buttons and a small screen.

HyperDeck

> `Blackmagic HyperDeck Studio HD Mini` video and audio recorder. There are two of these located in the *Wall Rack* near the top. They have two SD card slots, buttons for ▸, □, ○, ◁◁, ▷▷ (among others) as well as a screen showing a video preview.

Live Encoder

> An `Epiphan Pearl Nano` video and audio encoder. It is located in the *Wall Rack* at the very bottom. It has a screen showing a video preview and buttons for ○ and ⊿ (among others). This is what sends our video stream to *CivicClerk*.

Switcher Controller

> The device that controls the *Video Switcher*. It is a `Blackmagic ATEM 1 M/E Advanced Panel 10` and can be found on the desktop below the window (the device to the left of the *Camera Controller*).

Camera Controller

> The device that controls all cameras for both Council Chambers and the Multi-Purpose room. It is a `Panasonic AW-RP150` and can be found on the desktop below the window (the device to the right of the *Switcher Controller*).

MultiView Monitor

> One of the two LCD screens mounted directly below the window. These show a number of video sources combined as windows with labels and other indicators.

Touch Panel

> Crestron touch panel located to the left of the *Switcher Controller*

Off Air

> When we aren't currently broadcasting, we send a pretty picture with the current weather, upcoming events, and other information (instead of a black screen).

On Air

> When we are broadcasting, we send the signal from the *Video Switcher* to the all encoders, recorders and our cable channel.

Program Bus

> The final output of a *Video Switcher* (put simply). This is the video feed which will be sent to all recorders and online streams. It can be found on the left *MultiView Monitor* in the top-right window (labeled "ME 1 PGM").

Preview Bus

This it typically used to select the "next" source to be sent to the *Program Bus*, whether through a "mix transition" or a "cut transition". It is shown on the left *MultiView Monitor* in the top-left window (labeled "ME 1 PVW").

Tally

A method commonly used to indicate whether a source is "on-air" or not. A source will be indicated in red 🔴 if it's currently "live" on the *Program Bus* and green 🟢 if it's currently selected on the *Preview Bus*.

CivicClerk

The online service used to stream video to the public. It is accessed through a web browser at https://mansfieldtx.v8.civicclerk.com.

DSP

Digital Signal Processor. This is the device that handles all of the audio signals throughout the system. It's not incredibly important to know what it is, where it is, or how it works. I just wanted to include it here to style the text correctly when I referred to it in the instructions 🤓.

Speaker Timer

A `DSan Limiter` system used to limit the time for citizens to speak. The controller is located on the Dais where the Assistant City Secretary sits.

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