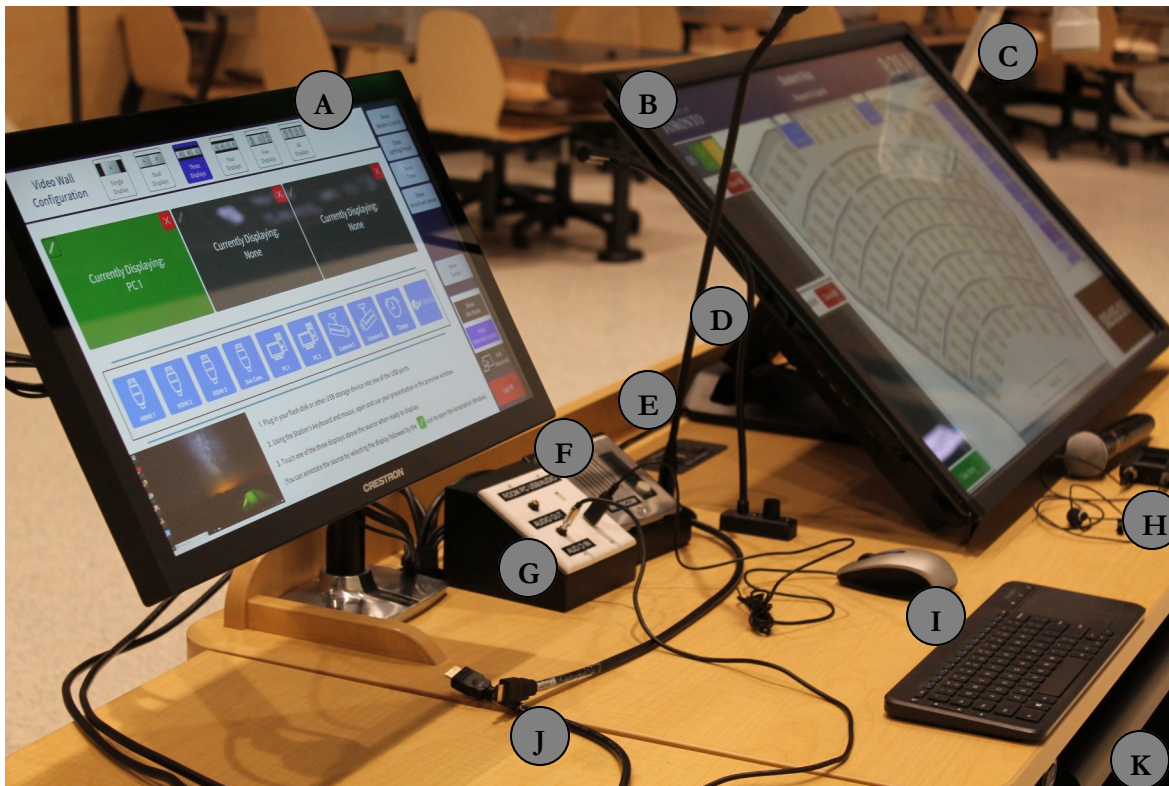


MY Manual—an introduction to Myhal 150

Available Technology

- 3 **HDMI connections** (labelled on the cable as HDMI 1 to 3)
- One wifi connection (through **AirMedia**)
- A **document camera** (the connection to this can serve as a fourth HDMI input)
- A **PC** that can show two screens, with a USB input
- Separate audio input, not controlled by anything else (really)
- Two **built-in cameras** – one for the entire wall and one for the desk area
- A whiteboard with markers that rarely work and are very difficult to see past row E
- There are two **USB charging ports** behind the large screen
- A microphone and an HDMI connection from each of the 108 **student tables**

NOTE: We will use the term **monitors** to refer to the displays where the controls are located and **screens** to refer to the massive displays on the wall.



Controls

This technology is controlled through two touch-screen monitors:

The small, **main monitor** is used for most functions. On rare occasions, it will be necessary to log in on this monitor (with one's UTorID), but the room techie will generally do this before class.

The **large (advanced) monitor** is used mostly for features that involve student tables. It is only activated when **Advanced Mode** is chosen on the main monitor (see p. 3). The main monitor is arm-mounted and can be moved close to this monitor to create a single work area.

- [A] Small (main) monitor
- [B] Large (advanced) monitor
- [C] Document camera (barely visible)
- [D] Lectern mic and lamp
- [E] Electrical and USB charging plugs
- [F] Tech help call button and speaker
- [G] USB plugs for PC and independent audio in/out plugs
- [H] Two microphones—one **handheld mic**, one clip-on **lavalier mic**.
- [I] Mouse (plugged into [G]) and wireless keyboard (do not type too quickly)
- [J] HDMI connectors
- [K] At the edge of the table is the **height control** for the desk

p. 2 Main Controls—Basic Use

Areas of interest

- The **top (display) area**. This is where most of the advanced features are shown. At its default setting, it displays the time.
- A row of large **panels**, mostly dark gray (an active panel is green), directly below. These represent the screens being displayed and indicate the input for each. All have a large X in the top-right corner to remove the current display.
- A row of small **icons**, mostly light blue (an active icon is dark blue), below the panels. These list the possible input streams.
- The **preview** screen is in the lower-left corner.
- A column of **buttons** on the right-hand side of the screen. These allow the choice of functions to display in the top area.

Displaying an input

To send an input to a screen, touch the small panel indicating the input so that the icon turns a dark blue and then touch the panel for the screen where you want the display. Make sure there is nothing being displayed that should not be seen publicly (such as passwords). The display takes two seconds to show the new input.

When an icon is first pressed, it turns dark blue and the preview section of the screen will display the input.

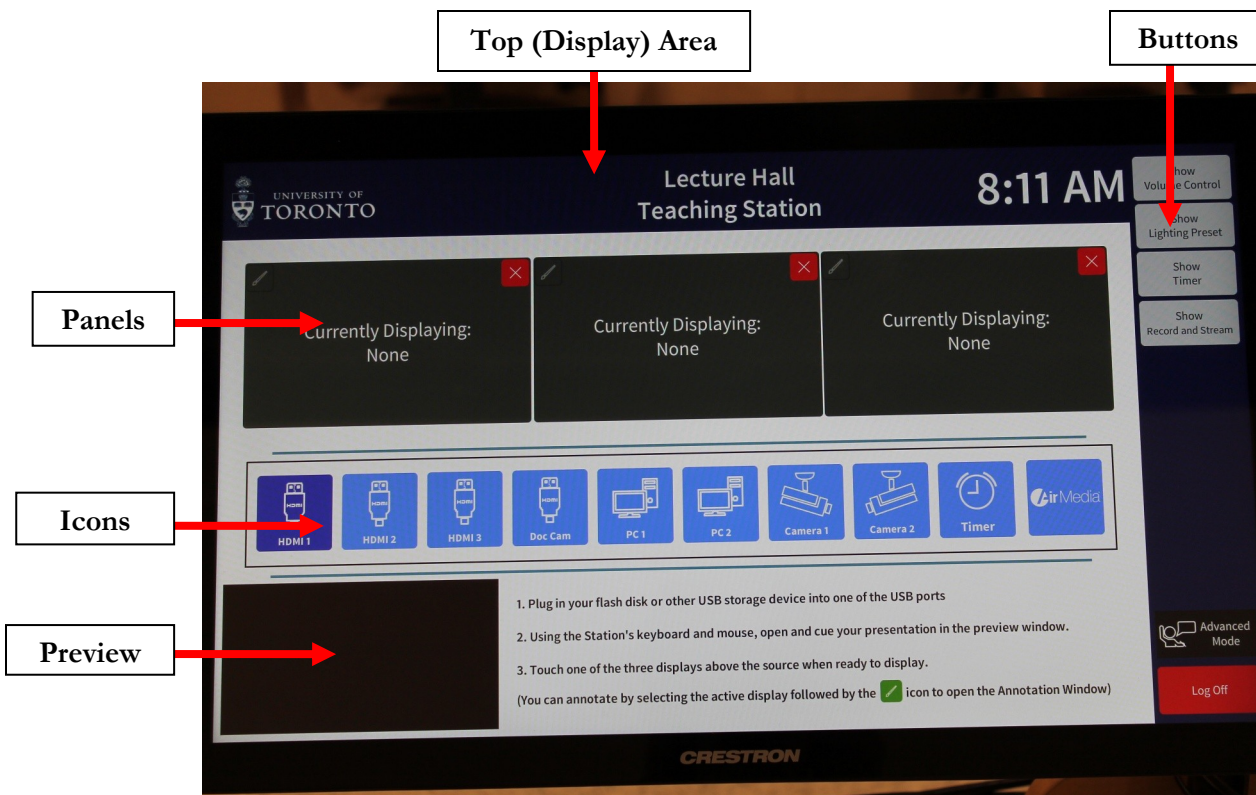
When an input is sent to a screen, that panel will turn green. Under default uses, audio will come from whatever screen was sent in last (only one source's audio is ever used).

Switching Screens

If one panel is green and a second panel is touched, then the two will switch places on the display (and on the big screen).

If one of these was the active audio, then the source will switch. If neither one was active, then the second panel touched will now be used as the source.

To switch just the audio, touch the panel that is currently green (this unselects it), then touch the icon for the input to be used for audio, and then re-send it to its panel.

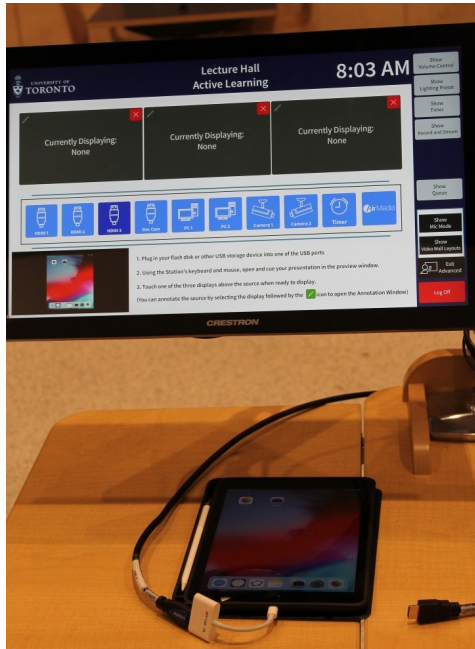


WARNING

You will mess this up at least once during lecture: one of the panels will be active and, as you try to pick another input with which to work, you will accidentally press on the intended panel first (before touching the icon), swapping the displays.

Plugging in

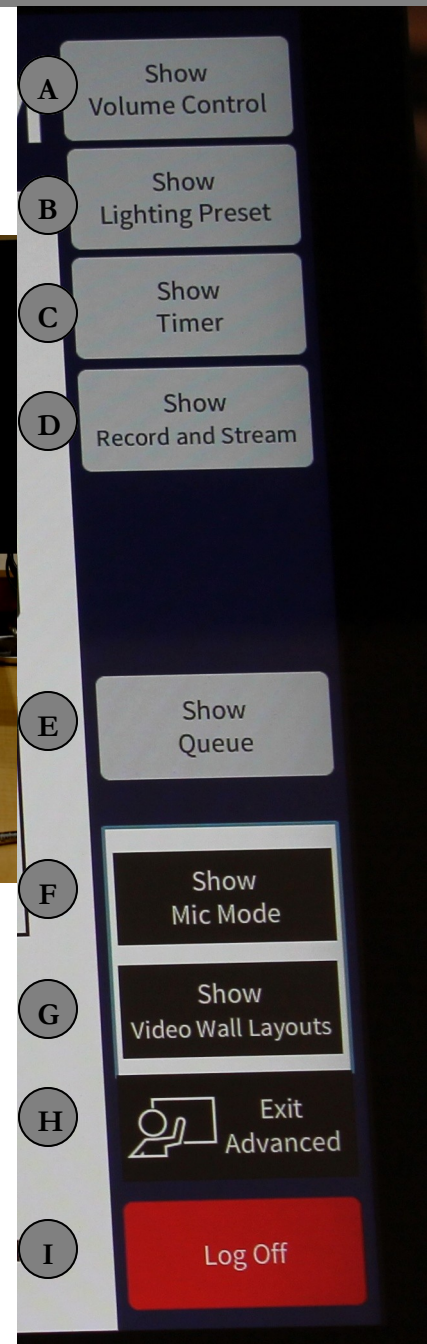
Connecting to an HDMI is pretty simple, although it may need an appropriate adaptor (instructors should bring their own). With the correct icon selected, the display on the iPad (below, left) can be seen in the preview panel. When the preview is selected, the entire screen displays the image (below, right).



Microphones

There are two types of microphones, one that clips onto clothing (the **lavalier**, at top) and one that is **handheld** (bottom). The latter seems to be better, but it can be difficult to teach one-handed. For the former, there is a pick-up that clips onto a shirt (pictured) or a headset. The quality of the sound is very difficult to judge from the front of the room.

Buttons



[A] **Volume control** is a two-level menu: basic is on p. 4 and advanced on p. 11.

[B] **Lighting preset** is an excellent idea, allowing for an immediate choice of any of five lighting levels. It does not yet work.

[C] **Timer** is on p. 7.

[D] **Record and Stream** is on p. 7.

[E] **Queue** puts the list of active and waiting student tables on the smaller screens. See p. 7.

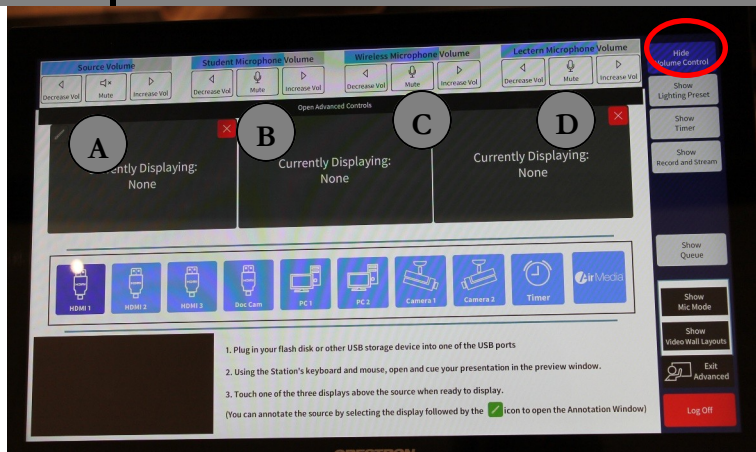
[F] **Mic Mode** selects the way signals from student tables are handled. See p. 7.

[G] **Video Wall Layouts** gives a menu of display options. It is described on p. 6.

[H] **Advanced Mode** can be toggled on and off. When off, buttons E, F, and G disappear, and the large monitor cannot be used. Pressing this button will turn off any active audio channel and exiting Advanced Mode turns off all video feeds.

[I] **Log Off** should only be used if you logged on with your own UTorID.

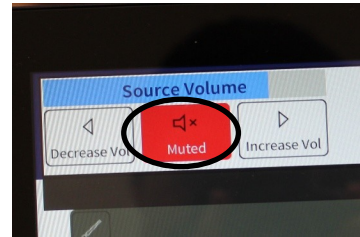
p. 4 Things You Should Know I



- [A] Source Volume—The room PC or an HDMI-connected device; whatever is activated as the source of the audio on the main monitor.
- [B] Student Microphone Volume—This is the usual reason for feedback, building slowly but surely if the student table is quiet, but the mic is activated for a long period.
- [C] Wireless Microphone Volume—This is the master control for all of the microphones used by the teaching team.
- [D] Lectern Microphone Volume—Few people use the lectern mic.

Volume Control

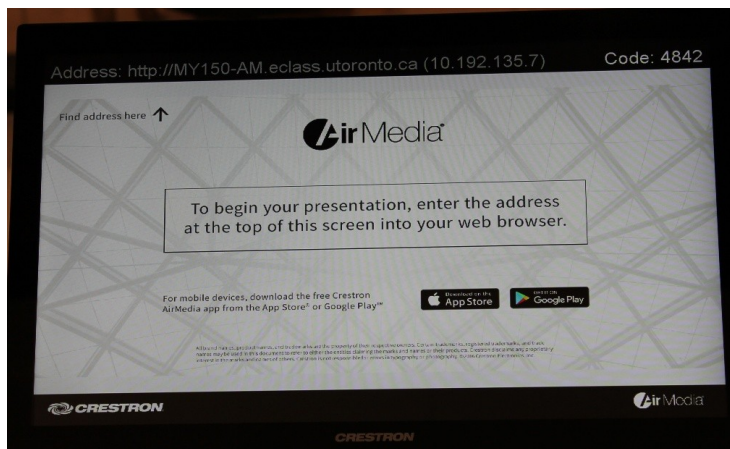
This mode does not get used often, but it is useful to know how to get to it quickly. In cases of feedback (quite common with an active student table mic, but can happen with the others), it is good to know where the mute button is.



In general, having these at about 75% is a good starting point.

[NOTE: If you are going to create feedback for a lecture on resonance, tell the techie first, as they can lower the volume remotely and will step in to help if they are near.]

The thin, black bar along the bottom of the Top Area opens the Advanced Volume Control menu, discussed in p. 11. This gives the options for adjusting the volume on individual microphones. The advanced menu has controls for two lavalier mics and four of the handheld ones, but only two of the latter will work at once.



AirMedia

AirMedia allows a device to connect remotely to the display using the URL and pass code listed at the top. [NOTE: Do NOT send the screen on the left to the display. A quick student will be able to log on before you.]

The wifi will not necessarily be reliable, especially if the device is trying to use a connection that is physically outside the room. There is a secret wifi connection inside the room and the techie on duty can help instructors log on to it.

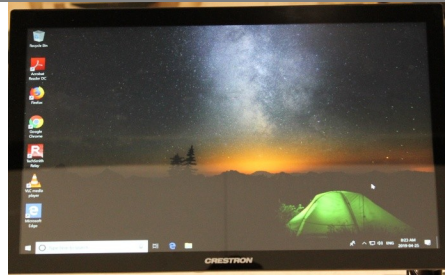
AirMedia generally works. However, under the adage of “trust, but verify,” it is a very good idea to have the cord/adaptor necessary as backup.

PC1...

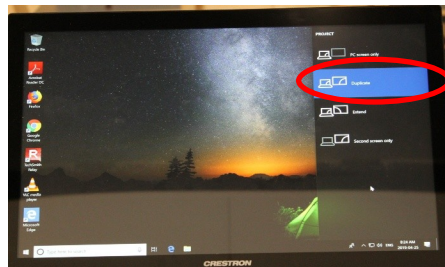
The desktop provides a means to use the room without having to bring in an external device. Its internet connection is very reliable and it is also easy to bring in a USB memory stick to plug in at the desk (see [G] on the diagram on p. 1) and then play any desired material.

[NOTE: Be careful with the main monitor. You may have the urge to tap on the desktop's image to select a program or push a button, but this will simply take you back to the monitor's command screen.]

Keep in mind that using incognito mode is not a bad idea on any public computer's browser.



...and PC2



PC1 and PC2 come from a single computer. Under default settings, they show the same image. Pressing **+ Win** gives the option to **extend** the screen. **Warning:** PC2 is the left half of the extended screen and PC1 is the right half.

Switching frequently between the screens can be cumbersome. It is easy to get the mouse from one to the other, but to switch the display on the main monitor requires pressing on the monitor, picking the new input, and then pressing its image on the preview window—all without accidentally switching screens..

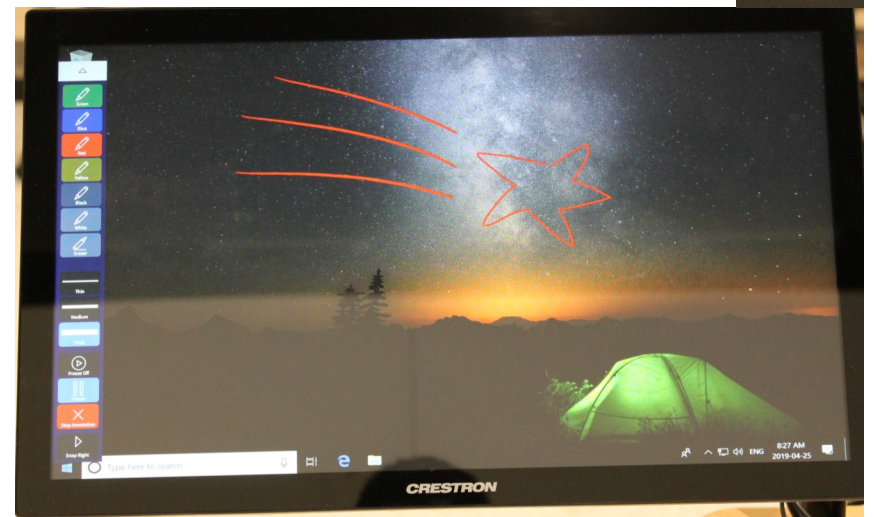
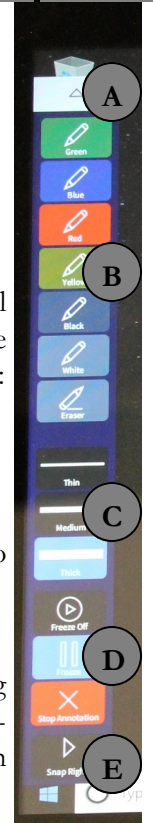
Annotation



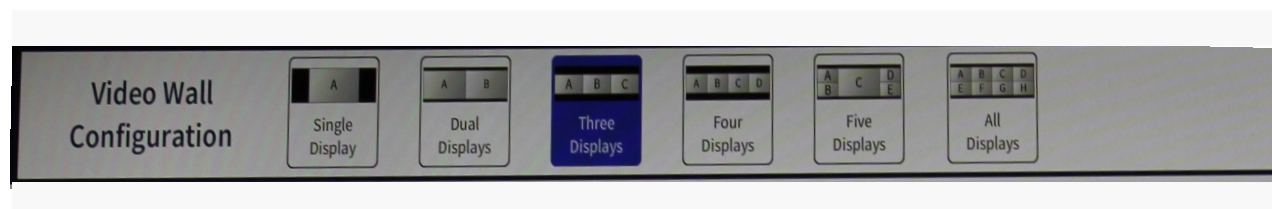
Both of the monitors have an annotation option. This is often used with the PC on the main monitor or with student input on the large monitor. Every panel has, in the top-left corner, a pen symbol. On an active panel, this gives a column of options (on right) for drawing:

- [A] Collapse the column
- [B] Colours of pen (including an eraser option)
- [C] Width of pen
- [D] Freeze/unfreeze the monitor (does not work), plus X to exit the mode
- [E] Place the column on the other side of the monitor

Note that the annotations lag a little bit behind the drawing itself, so the tool is a little awkward. Of course, most annotation programs on most devices have a similar issue with their displays.



Video Wall Layouts



The first piece of advanced use to master is the Video Wall Layout. This mode shows up as a button on the right side of the screen, but is only when Advanced Mode is active (see p. 3). When Video Wall Layouts is selected, a set of options appears in the top bar of the monitor. There are six display options, summarized in the following table.

Number of screens	Layout	Side displays	Approximate size (in feet)
1	A	A in both	11x20
2	A B	B in left, A in right	11x20
3 - default	A B C	C in left, A in right	11x20
4	A B C D	C D in left, A B in right	8.5x15
5	C E A D E B	C D in left, A B in right	4 of 5.5x10 1 of 11x20
8	A B C D E F G H	D H in left, A E in right	5.5x10

Live! In glorious CinemaScope!

The screens are set for 16:9 ratio and have 2340 by 1350 pixels. Spend a few minutes stretching your old slides to the new ratio – you can have more white space, add another column comfortably, or just look cool.

Note that all of the screens are in **16:9** ratio, regardless of mode.

The letters in the table indicate the **order of the screens**, so when moving from five screens to four, the middle (large) screen will disappear, the one in the bottom-right will be at the right, etc.

Notice that with a single display, its image will show in the side screens; however, if only the middle screen is used in the default three-screen format, it will not be seen in the side screens.

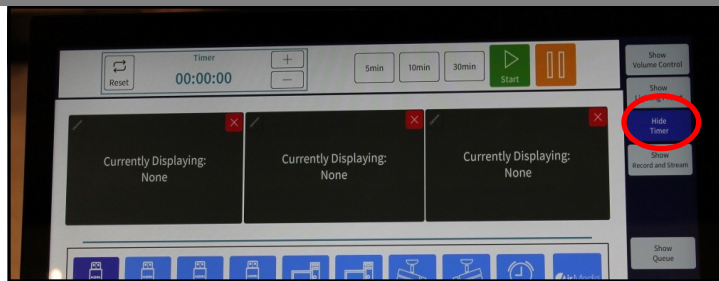
At the moment, there is no feature to allow freezing a frame and sending it to another screen while the original input for that screen continues, nor to use the full 60' length with a single input.

Do not be afraid to use the video wall creatively.

In MAT 187, the same slide presentation was run on Top Hat (where students could be asked questions) and on an iPad or a PC source that could be used for annotations. As the Top Hat questions were only required occasionally, the usual format used was:

- Display the iPad/PC slides on screen A
- Put Top Hat on screen B
- Quickly move to one-screen display, showing just screen A
- When a Top Hat question came up, return to two-screen mode

A similar style was used when bringing up a student solution through the table iPads or displaying the doc cam for a quick explanation, etc.



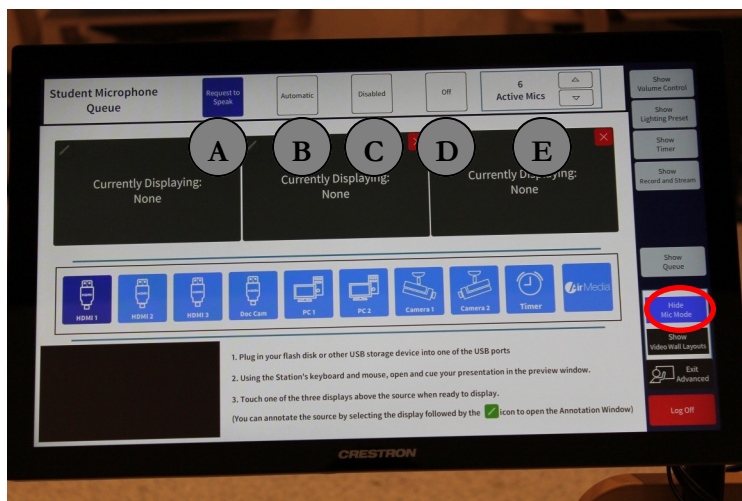
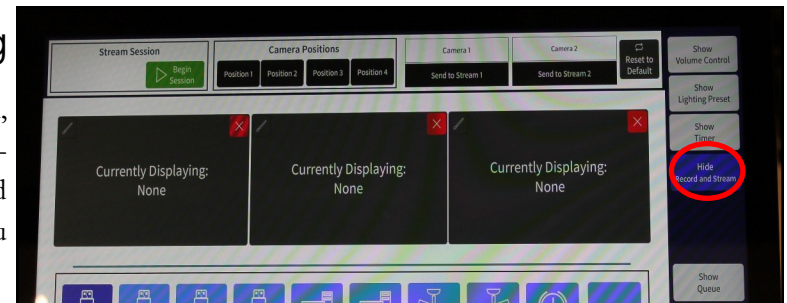
Timer

The timer can be placed on either monitor (but must be activated on the main monitor to work on the advanced one) or displayed on the screen for the entire class to see. There are buttons for rough adjustment (1, 5, and 10 minutes), a reset button, play, and pause.

There is no alarm when the timer hits zero. For that, find an app with an annoying alarm.

Recording and Streaming

As of this writing, the quality of the recording (especially the audio) is not good enough, so help from the EdTech office is a far better choice. [NOTE: If you do choose to record your lecture (once the audio is addressed), select the inputs that are to be recorded and press “Begin Session.” At the end of your lecture, ask the room techie to send you the URL for the recording. Actual streaming is not available.]

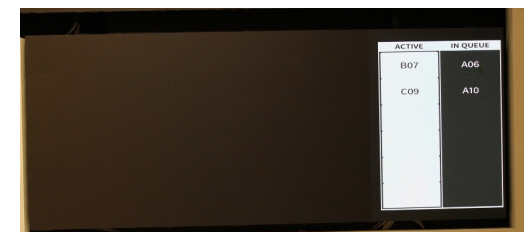


Mic Mode

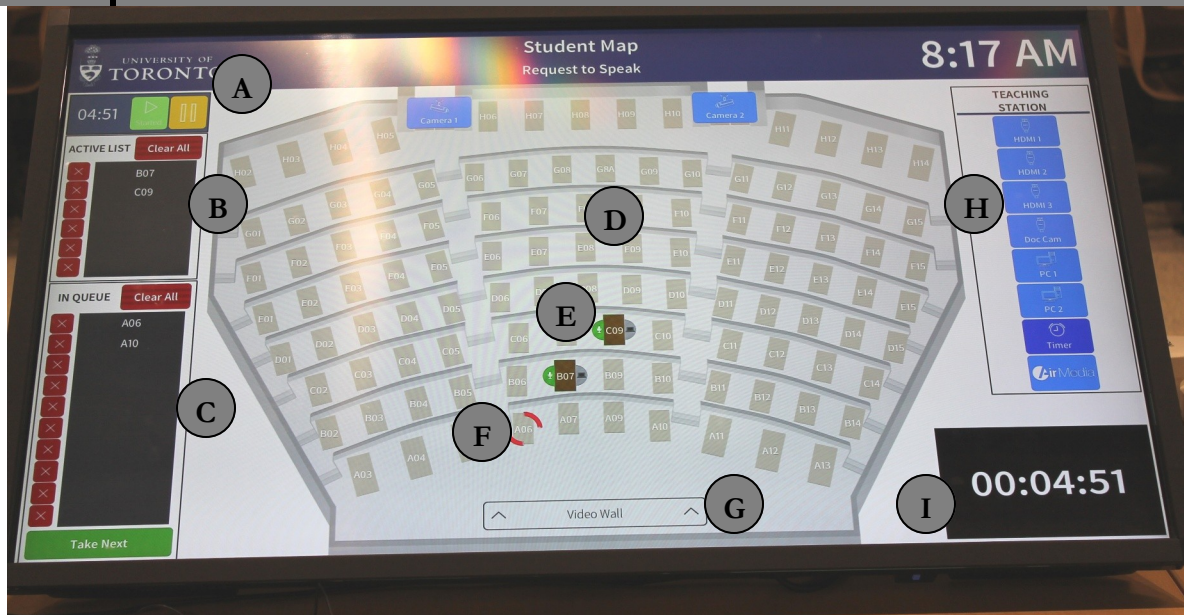
- [A] Request to Speak. This is the correct mode. Under this setting, a student touching their table mic gets placed in the waiting queue.
- [B] Automatic. With this setting, a student touching their table mic activates the microphone, as long as there is room in the list of active mics. Don't do this.
- [C] Disabled. This turns off all of the requests from tables. Mics can still be activated from the large monitor.
- [D] Off. This button does not seem to have a function.
- [E] Under Automatic mode, it is useful to control the maximum number of active mics, so this option allows it to be set it between one and six.

Show Queue

This mode displays the tables with active microphones and the queue waiting to be activated on the side screens in the room (at the moment, this is only showing the information on the screen in **stage left** (left side for one facing the audience)) This is a very useful function for classes with a lot of student interaction.



p. 8 The Large Monitor



This monitor is mostly used to control the input from student tables, receiving the audio from the microphones either alone or with the video. **The only way to use just the video is to mute the student mic.**

Note that when the Advanced Mode is activated, any muted mics are turned on again.

- [A] Timer controls (the timer must have been set and activated on the main monitor).
- [B] List of active student microphones (up to 6). Each has an X next to it to clear it from the list and there is a “Clear All” option.
- [C] List of microphones in the queue (up to 10), with X and “Clear All” as above, plus “Take Next” to shift the topmost table to the active list.

[D] Display of all of the tables. The rows are A to H, starting at the bottom. Numbers within a row are set so 5 and 6 are split by the aisle on stage left, while 10 and 11 are split by the right aisle. (This creates the ungainly G8A just above our [D]). When a table is selected, options are given to add it to the queue, turn on its microphone, or send its display to the main screen (which also activates the mic). If sending to the screen is chosen, the Video Wall Layout [G] is activated to allow a choice of display, so pressing on any panel will send the student input there.

[E] The symbol for active desks. The left half is green to indicate that the mic is on, while the right half is also on if the video feed is displaying.

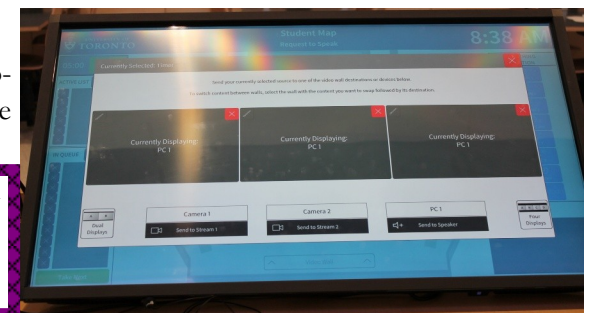
[F] The symbol for the top desk in the waiting queue. The others in the queue are not highlighted.

[G] The video wall layout can be adjusted from this monitor, although one must scroll through the options one at a time. (see image below) This menu also allows for annotating an image (see p. 5) or setting the input channels for recording (p. 7).

[H] A set of icons to allow for a second preview screen (bottom right of the monitor). Note that the icons for the in-room cameras are at their positions in the room (well, their labels are reversed - camera 1 is at stage right and camera 2 at stage left).

[I] The second preview screen, generally used to check the HDMI input from a student table. The resolution is poor, unfortunately, but it can be used by a TA to follow a screen display without using the main monitor.

Bored at the big monitor? If a table has its iPad plugged in, you can see its display in the preview menu. Technically, the students know this, but in practice you can see what they are doodling, as long as you do not hold them responsible for what they write and draw.





HDMI Connection

Each of the 108 student tables in the room has an HDMI connection. The supply room has enough iPads (with writing styli and attached adaptors) and HDMI cables for every table. A group of four TAs can generally hand out all of the iPads and cables in about five minutes. Keep in mind that the collection of these needs to be done starting at about ten minutes before the end of class.

Do not send up input from a student's personal computer; the student's friends will send offensive messages to show up on the screen.

Warning: if a student source is displayed and then the layout is switched to hide that input, it cannot be removed even using the large monitor and, so, the table mic stays active.



Microphones

Every table has a microphone. Students can (generally) send a request to speak by tapping once on the back of the base of these. They can turn off the request by placing their finger on the base for two seconds.

Each table has a microphone attached near its front edge. When the mic is activated, it gives a steady green light. If the table is in the queue, it either flashes red when it is next in line, or else stays a steady red.

The quality of the pick-up is not great. Some tables require the students to lean very close to the mic to be heard, but this has been improved lately.



Noise control...

...is one of the most difficult tasks in MY 150. If you have a tech TA, there is an interesting use of the microphones that works very nicely. The TA can stand near the large monitor and look around for tables that seem overly animated. (**There are acoustic dead spots in the room** – the students know at which tables their voices will not carry to the front.) When one of these is spotted, the TA can put that table's mic at the top of the queue, causing it to flash an angry red. Most students will notice this, look around to figure out the reason for it, and the TA can gesture to them to keep the noise down a little.



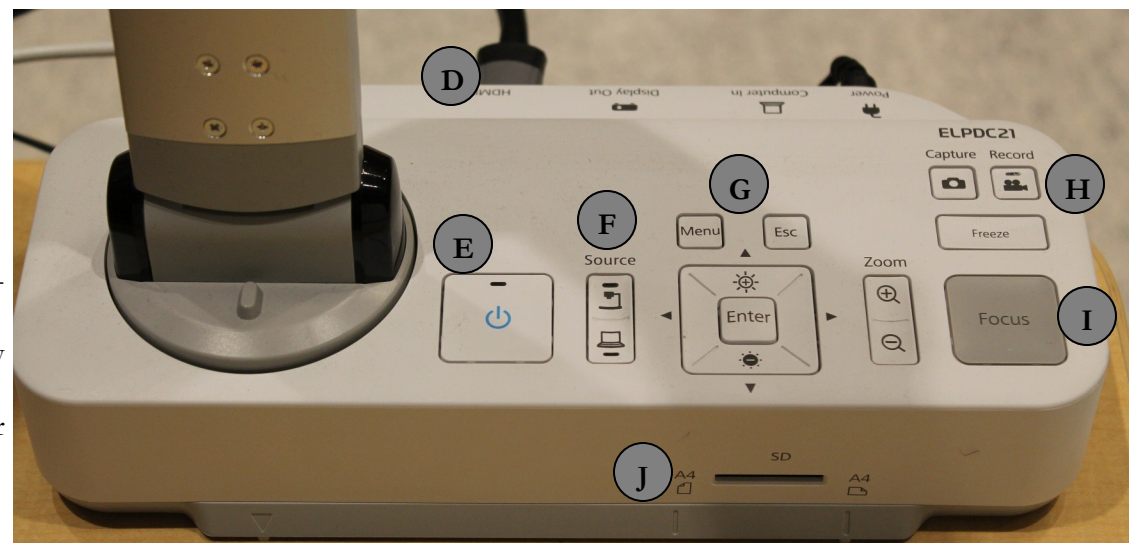
The document camera gives the most low-tech way to display information in the room.; it is the closest relative to the chalkboard. At the simplest, it needs only a pad of paper underneath the camera and a Sharpie for writing. The ideal paper size for the camera is 11"x17". Except that it will not fit on the table. 11"x14" seems to work best, placed in landscape orientation.

An SD-card can be used to either take pictures of the pages (as a JPEG) or to record the entire presentation (as AVI). The head of the camera has a built-in mic for this. The quality of this feature has not been tested.

To display a printed 8.5"x11" page, 28 point font is ideal in most fonts, especially for the image on side screens (data thanks to the Computer Science department, but also verified independently).

The document camera menu has a lot of the obvious choices (brightness, contrast, etc.), as well as an incredibly good zoom feature (12x optical zoom, followed by 10x digital), and the ability to turn the image 180° [NOTE: this is utterly useless, as it places you with your back to the class].

- [A] Camera head and light adjustment
- [B] 3-joint adjustable arm
- [C] Table surface for the paper
- [D] HDMI connection if a fourth one is needed
- [E] Power button (hit twice for OFF)
- [F] Source button (not needed in this room)
- [G] Menu and its navigation buttons; also used for brightness of image
- [H] Capture (image), record (video), and freeze display buttons
- [I] Focus button (on a blank piece of paper, put a pen or two down to allow the camera to focus)
- [J] Slot for SD card





The Microphone Cabinet

Below the desk is a glass-fronted cabinet that holds the microphones (and, when not in use, the keyboard and mouse).

[NOTE: This is generally locked and requires the room techie to open it for you and get you the microphones you need. They make sure that the batteries are charged and that you can get the type of mic you prefer.]

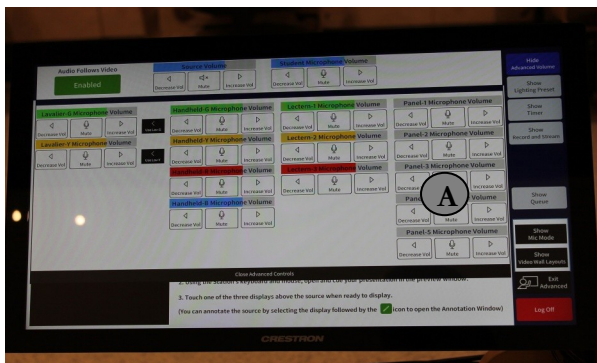
The lost-and-found tray is generally kept on top of this cabinet. Be careful not to crush it if you lower the desk height.

In-Room Cameras

There are two cameras in the ceiling of the room (above row F or G, middle section).

Camera 1 is at stage right. It gives the shot seen on the right—no students or screens are visible. At 177cm tall, one's head will still be seen if standing near tables A7 to A10. The Recording and Streaming menu (p. 7) gives three other settings: stage right, stage left, and a zoom out similar to camera 2.

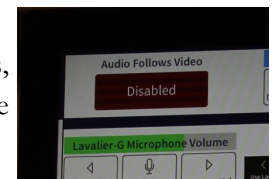
Camera 2 gives a large view of the entire stage and screen (this will catch some of the students in row A). This view should not be sent to the screens, as it creates a loop.



Advanced Volume Control

This menu allows volume settings on all of the individual mics. The bars are colour-coded and match the small coloured labels on the microphones in the room. Lectern mics are numbered 1 for the stage left position of the desk, 2 for standard, and 3 for stage right.

Note the top-left corner of the menu, “Audio Follows Video.” By disabling this, the audio channel will remain at the last selection even if changes are made to the displayed channels. Note that Advanced Mode must be active for this to work.



Too much fan noise?

If the room sounds like the heating or A/C is working at a very high level, creating their familiar droning sound, enter the Advanced Volume Control and mute the Panel-3 and Panel-4 microphones (shown by [A] above). They are the actual source of the noise.

Standard procedure for MAT 187 (using TopHat and iPad)

- Enter room as close to the hour as possible (observing that the previous tenant may go a couple of minutes over the hour as per standard UofT usage)
- Log into the main station (generally this is already done by tech support)
- Choose Advanced Features, Video Wall Layout, and then the desired layout
- Choose PC1 and select its preview
- Open Chrome and hit ctrl + shift + N for an incognito screen
- Go to Tophat.com and log in (the browser window needs to be in maximum size for login option to be visible)
- Pick the correct set of slides and begin presentation
- Touch the monitor to go back to the controls
- Send PC1 to the desired video panel
- Plug in the iPad to HDMI cable (unless using AirMedia)
- Open the correct presentation on the iPad
- Pick the correct HDMI source and send to desired video panel
- Put on the mic

Standard procedure for MAT 186 (active learning in a regular room)

- Enter room as close to ten past the hour as possible
- Pick up chalk

Some other courses' tech set-ups:

MAT 187 generally used the PC and either an iPad or the document camera, sometimes both. The uses were rather fluid, allowing for the main “lecture” to run out of the PC or the iPad, with the other used for supplementary visuals (with the doc cam, the PC could be used as two screens).

APS 111 often used an iPad and a desktop, the latter just as a timer.

Engineering Science Praxis used three iPads and a laptop, allowing for timing, recording, and annotating.

Standard procedure for MSE 101

- Before lecture, ensure iPad Pro (iPad), Wacom tablet PC 1 (Wacom1), and Wacom tablet PC 2 (Wacom2) will connect to personal router SSID, removing any automatic connection to U of T wireless. Create new Microsoft OneNote page, under appropriate online Microsoft profile
- Enter room as close to the hour as possible
- Plug in personal router and Apple TV (w/ conference room mode disabled so students can't hijack it)
- Connect Apple TV to HDMI
- Power up iPad on table towards west end of room, open OneNote
- Power up Wacom1 on central podium, connect to HDMI, open same OneNote page
- Power up Wacom2 on east table, connect via personal HDMI extension to room HDMI, open same OneNote page
- Send three HDMI inputs to west, central, east screens, corresponding to iPad/Wacom in those positions
- Power up GoPro camera on east table
- Put on the boom mic style wireless room mic and power it on
- Ask the class to be quiet as they sound like a crowded cafeteria
- Drop some high-intensity learning for the next 50 minutes:
 - Start writing notes on the iPad (west) until west screen is full
 - Move to Wacom1 (centre), scroll screens up on Wacom1&2, continue writing on Wacom2 until central screen full
 - Move to Wacom2 (east), scroll screen up on Wacom2 only, continue writing on Wacom2 until east screen full
 - Return to iPad (west), scroll screen up on iPad, continue writing on iPad until west screen is full
 - Repeat