

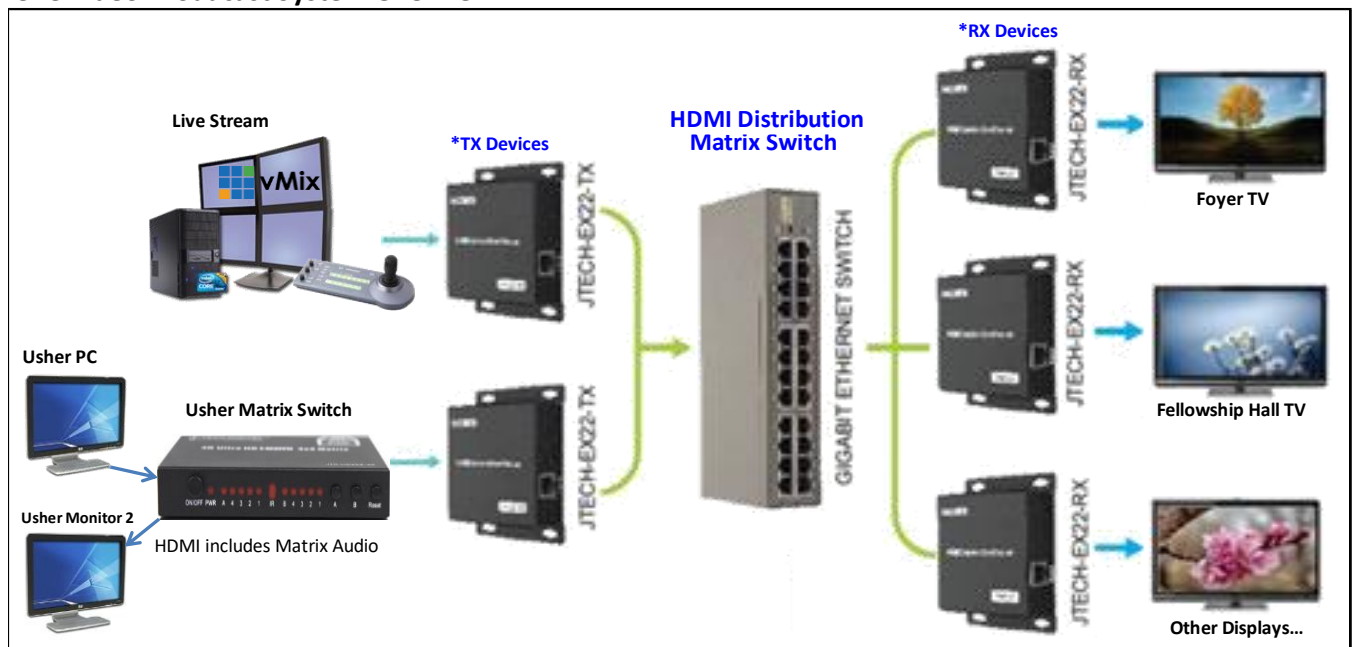
CBC's HDMI Broadcast System User Guide 2020-03-07

Overview

The church uses a HDMI distribution system to broadcast HDMI video and audio throughout the church. You can route any combination of sources to any combination of playback devices via our 24-port central HDMI matrix switch. The TV inputs should always remain the same with this system.

During the flow of a normal service, the Live Stream Operator will configure the system and then restore it to the Usher Matrix once the Live Stream has completed. The Ushers can change the configuration as needed. For instance, after the service has started, they should change the Fellowship Hall and Foyer TVs to displace the NVR (i.e. security cameras) for the security team to monitor.

CBC Video Broadcast System Overview



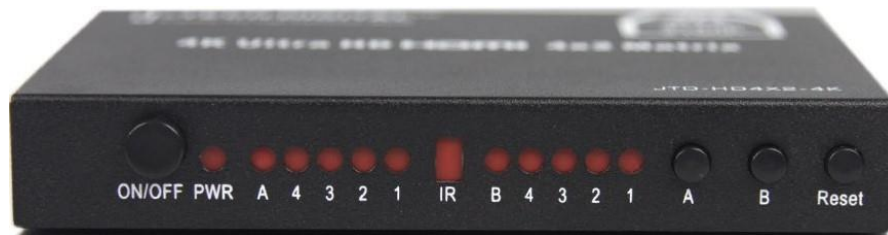
Sources

1: Live Stream

The Live Stream operator must enable and configure the live stream output; otherwise, this source would appear blank/black. If no live stream output is available, inform the Live Stream Operator. The audio for this source will be the broadcast audio sent from the sound board.

2: Usher Matrix Switch

The Usher Matrix Switch supports (4) HDMI inputs and (2) simultaneous HDMI outputs. You can control which input you select for each output independently (i.e. Output A can view Input 2 while Output B views Input 1). This allows us to distribute one of several selectable HDMI sources throughout the church (i.e. we could add a DVD player in the Usher Closet and play it on all TVs on the HDMI distribution network). Press the “A” or “B” buttons to select the desired input respectively. The audio for this source is the Usher audio on the receiver which comes from the HDMI matrix switch.



Matrix	Device
Output A	2nd Usher Monitor
Output B	HDMI Distribution (TX)
Input 1	Usher PC HDMI
Input 2	Receiver Output
Input 3	
Input 4	

Note: Output B has a TOSLINK optical audio output that goes to the Usher Receiver for playback.

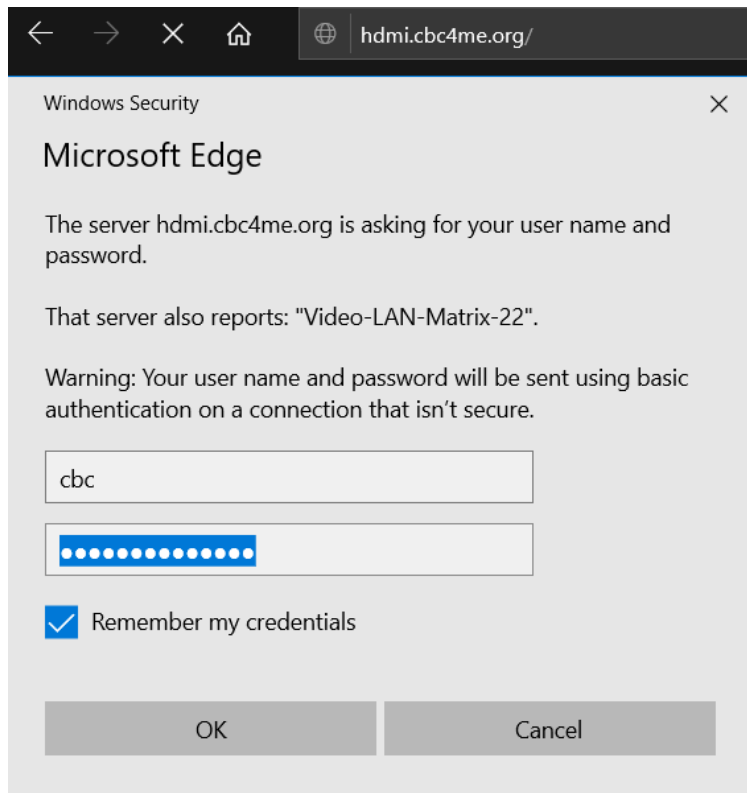
HDMI Distribution

A separate 24-port HDMI matrix switch serves as our HDMI distribution system and is easily configurable via a web browser by navigating to <http://hdmi.cbc4me.org>. A shortcut to this webpage is on the Usher Desktop.

User: cbc

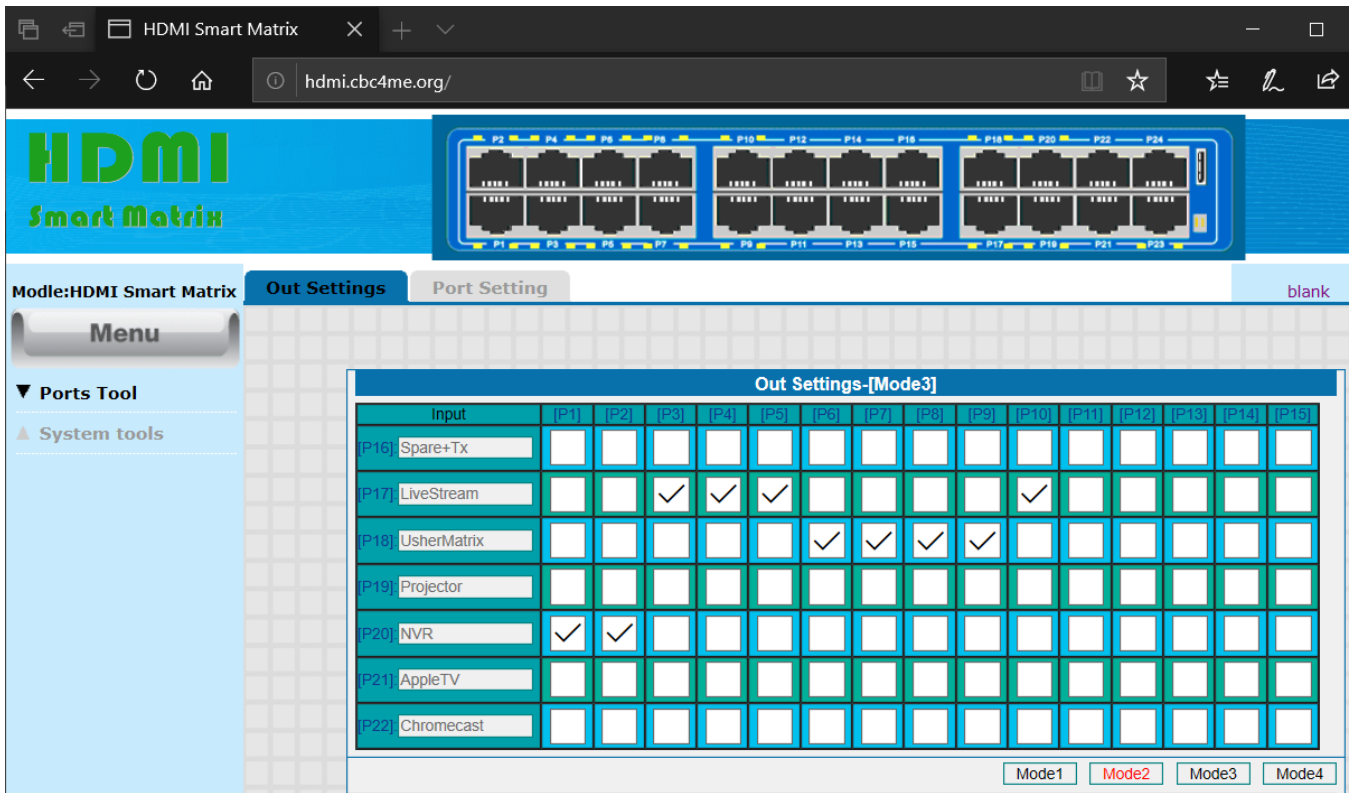
Password: cbc4me

****Note**:** only one user can be logged in at a time so be sure to close the web browser when you are done.



The first screen you see after logging in will look like the one below except it will show the current configuration. This works by simply checking which input device (i.e. Live Stream or Usher PC) you want each output device to receive and clicking “Apply.” The inputs are in rows on the left column and the output devices are the columns. Within the web configuration interface, there are four “Mode” buttons. These are simply saved configurations that you can apply at any time.

Note: Source audio is sent to the playback devices in addition to video.



A table of CBC's playback (RX) devices, source (TX) devices and modes are shown below as well. Note the title of the playback devices does not show up the web interface table.

RX Device	Playback Device
Port 01	Foyer TV
Port 02	Fellowship Hall TV
Port 03	Nursery TV
Port 04	John Clarke 1A
Port 05	Holmes 1B
Port 06	Bunyan 1C
Port 07	Ireland 2A
Port 08	Leeland 2B
Port 09	Balcony North TV
Port 10	Balcony South TV
Port 11	
Port 12	
Port 13	
Port 14	
Port 15	Spare Receiver

TX Device	Source Device
Port 16	Spare Transmitter
Port 17	Live Stream
Port 18	Usher Closet TX
Port 19	Projector
Port 20	Security Cameras
Port 21	AppleTV
Port 22	ChromeCast

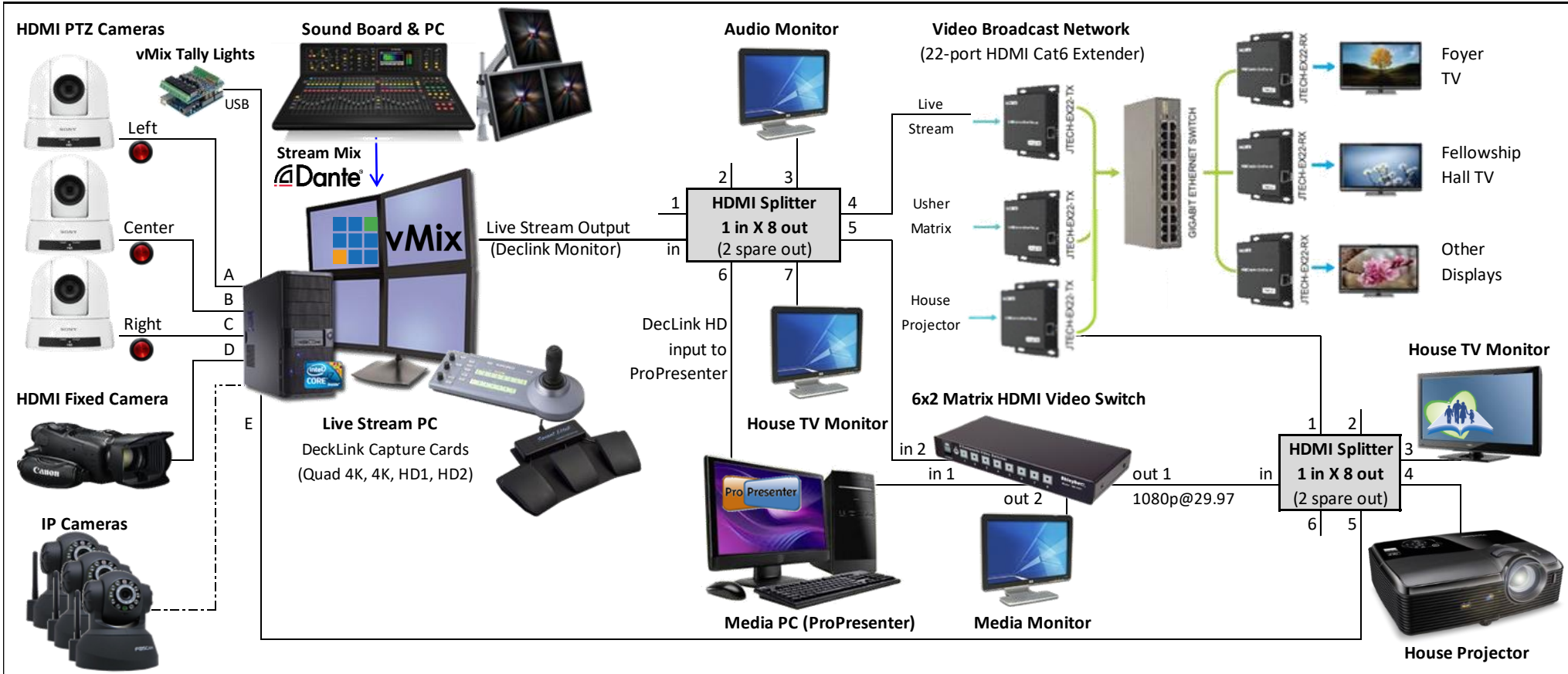
Appendix: Troubleshooting

- **Issue:** a black screen with a “Check Tx's input signal” message is displayed.
 - **Cause:** There is no video input on the HDMI distribution source chosen for that playback device.
 - Either the video signal (i.e. the Usher PC, etc) is not being received or the HDMI distribution is configured to send a video source that isn't active.
 - **Resolution 1:** re-apply the proper source-to-playback device routing in the HDMI distribution unit.
 - **Resolution 2:** Ensure that the video source is properly configured. If the video source is the Usher PC, see the Usher PC Output Issue below.
- **Issue:** a blank/black screen is displayed on the TV.
 - **Cause:** (very rare): the HDMI converter behind the playback device has frozen or failed
 - **Resolution:** power cycle the receiver (may require a ladder); else, replace the HDMI Receiver.
- **Issue:** HDMI Broadcast Not Showing on one or more displays or more but is on others
 - **Cause 1:** the playback device is on the wrong input.
 - **Resolution 1:** switch to the correct HDMI input. For most TVs, the correct input is labeled “CBC.”
 - **Cause 2:** the HDMI Distribution Switch is not properly configured
 - **Resolution 2:** re-apply the proper source-to-playback device routing in the HDMI distribution unit.
- **Issue:** HDMI Broadcast Not Showing Usher PC Output
 - **Cause:** Usher Matrix Switch is on the wrong input
 - **Resolution:** Configure the Usher Matrix Switch per the documentation (Ex: set to Input 1)
- **Issue:** There is a bad audio echo between the TV and the ceiling speakers
 - **Cause:** two different audio devices are playing at the same time
 - **Resolution:** Turn the volume on the TVs all the way down (do this rather than mute)

Issue the Live Stream Operator Can Address

- **Issue:** HDMI Broadcast Video/Audio is stuttering or choppy.
 - **Cause:** unknown vMix External output issue (only seen once to date)
 - **Resolution:** Ask the Live Stream Operator to Disable the vMix External output, wait a second and then re-enable, verify it is resolved

CBC Live Stream & Video Broadcast



Usher HDMI Matrix Switch

Matrix	Device
Output A	2nd Usher Monitor
Output B	HDMI Distribution (TX)
Input 1	Usher PC HDMI
Input 2	Receiver Output
Input 3	
Input 4	



HDMI PTZ Camera Settings

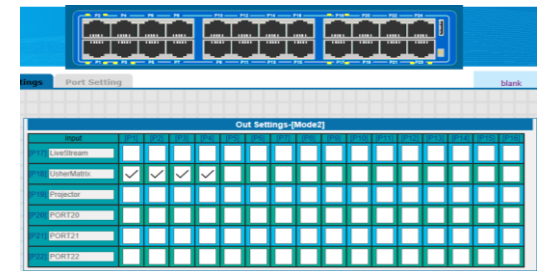
System Select: 2 (1080p@29.97)

DIP: 1=ON, 2-8=OFF; Image Flip: ON

IR Select: 1 (left), 2 (center), 3 (right)

HDMI Distribution Devices

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TX Device	Source Device
Port 16	Spare Transmitter
Port 17	Live Stream
Port 18	Usher Closet TX
Port 19	Projector
Port 20	Security Cameras
Port 21	AppleTV
Port 22	Chromecast