

Streaming system.

In evaluating solutions, the following goals were kept in mind

1. High quality picture and sound.
2. Minimal equipment setup for each use.
3. System is simple to use with minimal training of staff.
4. Seamless control during meetings requiring minimal attention from staff.
5. Allow for future expansion to stream activity from locations other than council chambers.
6. System will handle our requirements for at least the next five or more years without need to replace or upgrade equipment.

Setups considered

1. Single portable camera. (\$3000 - \$5000)
 - a. Least cost
 - b. Portable
 - c. One view at a time.
 - d. Requires setup for each meeting (tripod, camera, cords)
 - e. Setup will take up space in room and may be prone to being bumped.
 - f. Sound would be picked up from room and speakers mounted on walls. Sound might not be as clear as direct input.
 - g. Staff would reposition camera as needed to show documents on screen, show council and show citizen or staff presentations.
 - h. Meeting would typically be recorded and uploaded later.
 - i. Use of a simple hardware encoder provides ability to live stream
2. 2 fixed mounted cameras (or 1 fixed and 1 portable) and simple streaming solution (~\$8,000)
 - a. Use a recording box, typically one camera active at a time
 - b. May need a preview monitor on desk to verify camera feed
 - c. Recording box can take direct input feed from sound system.
 - d. Portable camera would be repositioned as needed to show documents on screen, show presentations etc.
 - e. Setup of portable camera for each meeting, takes up space.
3. Dual cameras permanently mounted with control panel (\$15,000)
 - a. Higher cost
 - b. Both cameras can be active at the same time
 - c. Minimal setup
 - d. Minimal staff attention needed during meetings
 - e. Cameras can be pan and zoom
 - f. Long term solution

With any of the two camera solutions a recording or control panel is required to bring the outputs of cameras together. Simple recording panels typically record one camera at a time requiring switching back and forth. To monitor what the cameras are seeing a preview monitor is often used by the operator to verify correct camera is selected and pointed correctly. The control panel proposed combines the preview monitor along with control of the cameras into one device minimizing the space taken up.

System being recommended is dual camera setup with control panel which accomplishes our main goals.

1. Video can be live streamed and/or recorded for later upload. Direct upload to web from panel.
2. Two cameras will be used, one to view Town Council dais, the other will be used to show staff, audience and/or citizen lecture. Provides viewer with an experience closer to being at meeting in person.
3. Unit provides for a picture within a picture (PIP) which allows views from two cameras at the same time or one camera and display of a document/presentation. Single camera view is also available.
4. Control panel is a touch screen that provides quick access to adjust inputs.
5. Control unit provides for introduction of text (i.e. title might show what meeting is being streamed or title of agenda item being discussed, P&Z, Council, etc.)
6. Documents and other files are displayed directly from laptop.
7. Direct display of documents/files ensures readability and negates need to point camera at monitor or document.
8. Cameras can be remotely panned and zoomed to handle items that cannot be displayed directly. (i.e. Poster Boards).
9. Cameras will be permanently mounted on walls reducing setup time and avoiding clutter in room.
10. Switching between inputs is handled quickly via touch screen, minimizing attention by staff.
11. Unit will tie into our current sound system ensuring sound will be captured without loss as it might be if taken from room speakers.
12. Setup is minimal, the control box will be connected prior to meeting and disconnected after meeting for safe keeping. Control box is small and will be placed on council chamber staff desk for easy access.
13. Minimal equipment will be visible, all wires for cameras will be within the walls. Cameras are white and should present minimal distraction. Other wires will use the existing wire chases in the floor to connect to sound system and cameras.

Future expansion

With addition of a portable camera and tripod the control box can be setup to stream meetings/events from other rooms within town hall. It can also be used to stream events outside of town hall (i.e. Music in the Park) either by storing the event and uploading it later or if Wi-Fi is available event can be streamed live. Camera can also be used standalone and content upload via control box later.

Streaming of meetings other than council, P&Z, HPC, etc.

Staff and Council can easily do public service recordings

Outside groups and organizations can use streaming for their non-political meetings held at Town Hall

MEMORANDUM

TO: Town Council
FROM: Sandra Smith/Sean Taylor
DATE: February 5, 2020
RE: Video recording equipment

To provide one more option on the video recording equipment, staff discussed the type of equipment being used by the Town of Summerfield to video their meetings, which they live stream on Facebook. This is one of the last expensive alternatives available, but the sound and/or video quality may suffer.

Dual portable cameras (\$1,500-\$2,000 – 2018 model year pricing)

- a. Cheapest cost
- b. Portable
- c. Toggle between two different views (less clarity)
- d. Requires setup for each meeting (tripod, cameras, cords x 2)
- e. Sound would be picked up from room and speakers mounted on walls. If this option is chosen, sound would likely not be as clear as direct input and ambient noises from the room, including comments made by audience members, might be picked up
- f. Staff would be required to re-point camera if a third view were desired
- g. Use of a simple hardware encoder provides ability to live stream and recording is also possible to broadcast later

PEARL MINI

Bring your **video production** studio with you



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Epiphan Pearl Mini™ All-in-one live video production

The most reliable, all-in-one video production system that's small in size and big on pro features. Record, stream, and switch up to 3 HD inputs simultaneously and take your video production to the next level with Pearl Mini.



NEW! Now supporting USB and RTSP sources

+ Live event workhorse

Setting up for a live event has never been easier than with Pearl Mini. Get up and running in minutes to stream, record, and switch your event. Pearl Mini is built for durability in the field and delivers high quality results in any situation.

"Pearl has been a game-changer
in our product lineup"

Glenn Fraser, Freeman

Simplified lecture capture

Trusted by the world's leading academic institutions, Pearl Mini is the ultimate lecture capture device. While it's incredibly easy to use for operators and professors, it also has a robust set of features designed for integration into an LMS or CMS.

New! Direct integration with Panopto and Kaltura CMSs

"I'm very happy with our decision to use Pearl;
it's now our lecture capture standard."

Gabe Russell, Harvard Division of Continuing Education

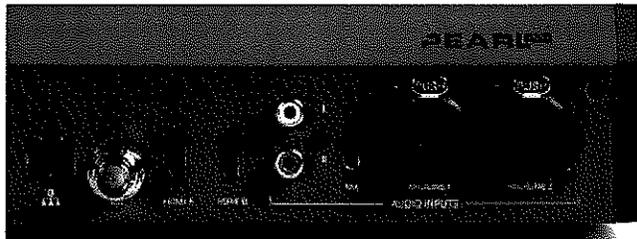
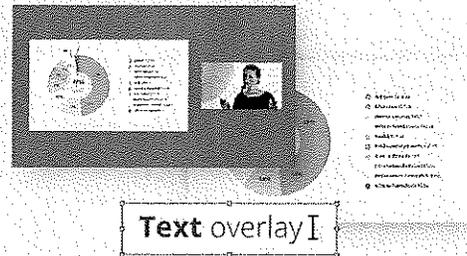


Connect any camera or video source

Be ready for anything. Pearl Mini allows you to work with HDMI, SDI, USB, DVI, and RTSP sources. No signal converters or scalars necessary!

Custom layout designer

Design your own custom layouts, including picture in picture and image overlays, using the drag-and-drop editor in Pearl Mini's web-based Admin panel. Combine, crop, and scale HD video sources. Add overlay images, text, timestamping, and more.



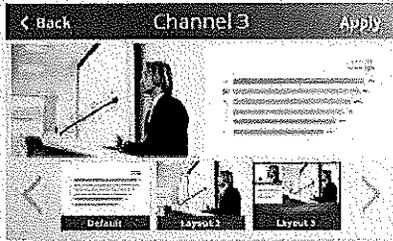
Pro audio support

Use mic-level XLR (phantom) and 3.5mm inputs or line-level TRS and RCA inputs. Built-in attenuation and gain control mean you get perfect sound fidelity.

Stream to viewers everywhere

Simultaneously live stream to YouTube, Facebook or any other content delivery network or content management system. At the same time, use the built-in streaming server to stream locally to web browsers, smart TVs, and set-top boxes.





Switch video sources live

Incredibly easy to use, Pearl Mini's touchscreen makes switching between your connected sources or layouts a breeze. Or use the web-based Epiphan Live to do remote monitoring and switching from your phone or tablet.

1080p HD recordings

Pearl Mini's hardware-accelerated encoder provides flawless H.264 encoding for maximum performance. Record as produced program out or as individual ISOs.



Local video output

Send your content to front of house or to a larger confidence monitor with Pearl-Mini's HDMI video output. Configure to share any input source or switched program output.

Remote login

Login to your Pearl Mini securely from anywhere over an Internet connection. Quickly take control of Pearl Mini for remote rescue troubleshooting, support technicians in the field, control recording, switching, and more.



Pearl Mini features



Removable storage

Front mounted SD card slot for your recorded footage.



One-Touch control

Easy streaming and recording



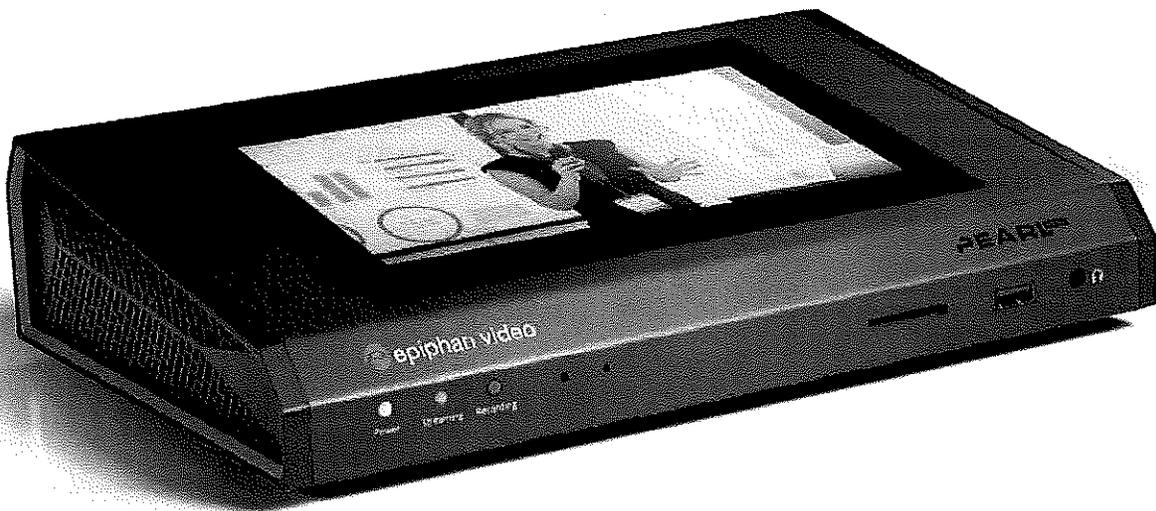
Headphone Jack

Monitor your audio locally



7" Touchscreen

Confidence monitoring, switching, recording, and streaming

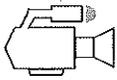


Seamless CMS support for Kaltura and Panopto

This integration allows for multi-camera scheduled VOD events, ad hoc events, and webcasting.

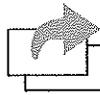
+

Connect everything!



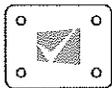
Video inputs

Connect your camera or video source with HDMI, SDI, USB, DVI, and RTSP video inputs



HDMI output

Share any input source or switched program output to local displays



VESA mount

Install in a rack or on a tripod



Pro audio

Use the XLR, TRS, or RCA inputs for pro level audio



Easily integrate with Crestron AV Systems

Using the Crestron-developed Control Module, integrating Pearl into a Crestron AV system is a snap.

Video inputs	2 × HDMI [™] , 1 × 3G SDI, 2 × USB 3.0
Audio inputs	Connectors: Mic-level: 2 × XLR, 1 × 3.5mm Line-level: 1 × stereo RCA, 1 × stereo TRS Input level max: 26 dBu
Video outputs	On-board touch screen and 1 × HDMI for video output
Video switching	During live streaming and recording via the touch screen or web UI
Video encoding	Codecs: H.264, Motion JPEG Bitrate: 1 to 50 Mb/s Color resolution: 4:2:0 Resolution: User selectable up to 1920 × 1200
Encoded programs	2 simultaneous 1080p programs at 30 fps (with up to 2 Full HD sources)
Audio encoding	MP3, PCM, and AAC (sampling 16 to 48 kHz with bitrate up to 320 kbps)
Network	1 × 10/100/1000 Ethernet port (RJ45) 802.1x network security and certificate management
Storage	Local SD card: Up to 512 GB EXT4 (user supplied) Local USB: Automatic or manual copy via 3 USB 3.0 ports Network storage: FTP, SFTP, SCP, RSYNC, CIFS, AWS, or WebDav servers
Recording formats	AVI, MP4, MOV, or MPEG-TS
Control	Browser-based Admin panel, Epiphan Live portal, touch screen, remote login, HTTP, and RS-232 APIs
Dimensions (W × D × H)	10 1/2" × 6 3/4" × 2 1/4" (261 mm × 172 mm × 60 mm), 3.8 lbs (1.7 kg)

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 800-868-2462 • Fax: 800-298-1181
 www.camcor.com

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 Camera Corner
 The Image Center

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QUOTATION

00756582

PLEASE REFERENCE
 THIS NUMBER TO INSURE
 QUOTED PRICING

Federal I.D. No. 56-0818892

PG 1

TO: Town of Oak Ridge
 8315 Linville Rd
 Oak Ridge NC 27310-9408

CUSTOMER 326333	DATE 1/24/20	QUOTE VALID UNTIL 2/08/20
SALESPERSON 82 Trent Kreitler - Ext 359		

Thank you for your inquiry. We are pleased to submit the following quotation for your consideration:

TELEPHONE: 336-644-7009
 FAX: 336-644-7012

QTY	ITEM NO.	DESCRIPTION	PRICE	AMOUNT
2	757000006	PTZ Optics PT12X-SDI-WH-G2 12x PTX Camera 3G-SDI/HDMI/CVBS/IP/1920x180p,72F	1599.00	3198.00
2	757000003	PTZ Optics HCM-1-WH Universal Small Camera Wall Mount (White)	99.00	198.00
1	442079446	PTZ PT-JOY IP Joystick Controller	649.00	649.00
1	/EPIPRLMNI	Epiphan Pearl Mini All-In-One Video Production System ESP1440	3495.00	3495.00
1	384054458	Kramer TP-580TXR HDMI over HDBaseT transmitter for Extended range	339.20	339.20
1	384054455	Kramer TP-580RXR HDMI over HDBaseT receiver for Extended range	339.20	339.20
1	384053762	Kramer FC-331 3G HD-SDI to HDMI Format Converter	648.00	648.00
1	802100048	One Year Limited Installation Warranty By Camcor. Inc.	.00	
1	INSCOMP	Installation Components: Cable/Connectors/Hardware/Tracking/Wire	990.00	990.00
1	INSTALL	Installation Charges	5390.00	5390.00

FREE FREIGHT

Terms - NET 30 DAYS



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QTY	ITEM NO.	DESCRIPTION	PRICE	AMOUNT
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Sales Tax: 1029.14
 Total: 16275.54

