H.264 RECORDING & STREAMING SOLUTIONS

APPLICATION GUIDE FOR ONLINE LEARNING (International Version)

## Recording and Streaming for Distance Learning

The use of streaming and recording technology in education is increasing rapidly. Until now most students would attend lectures in person, with a small proportion of pre-recorded lectures.

Today, attendance is being rapidly replaced by online presence at home. Key to remote learning is the ability for a student to use standard equipment like a laptop or tablet, and work through a browser to access online video content.

A solution that can combine different audio and video sources and can automate the process of streaming, recording and publishing is crucial for realizing successful remote teaching.

Extron's range of Streaming Media Processors are fulfilling this task in thousands of different places of learning around the world.
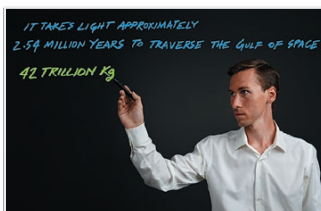

Internet
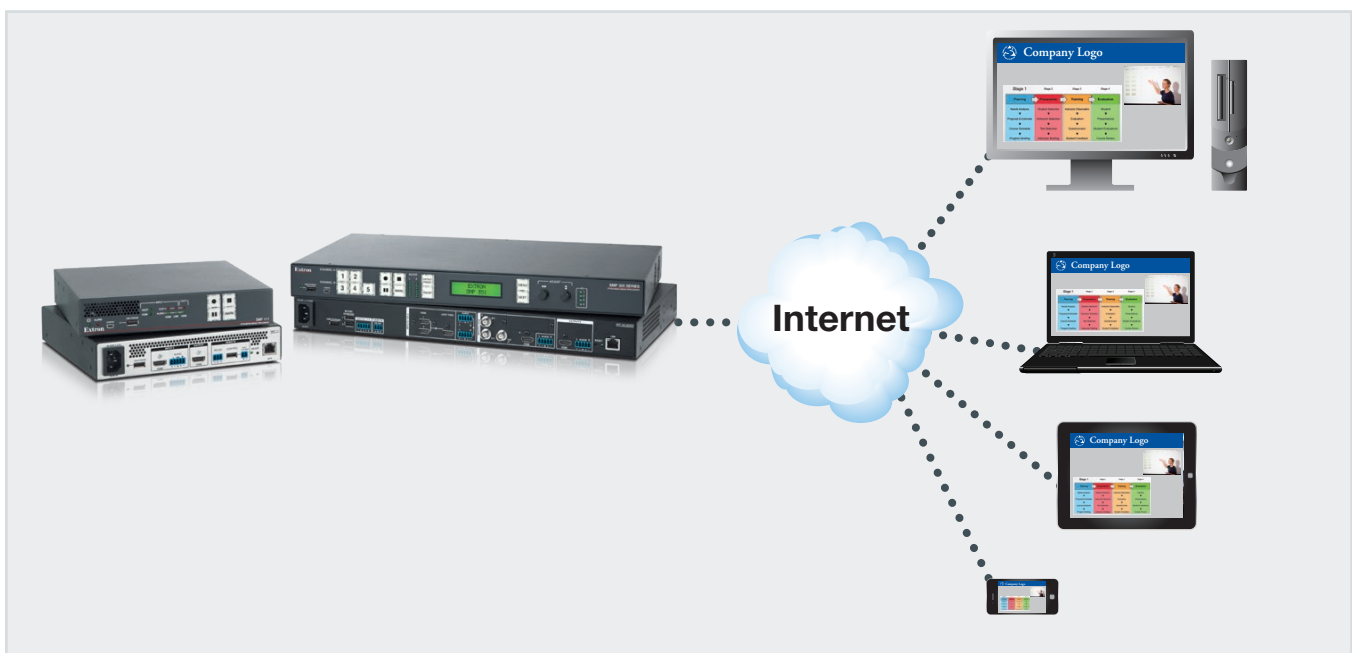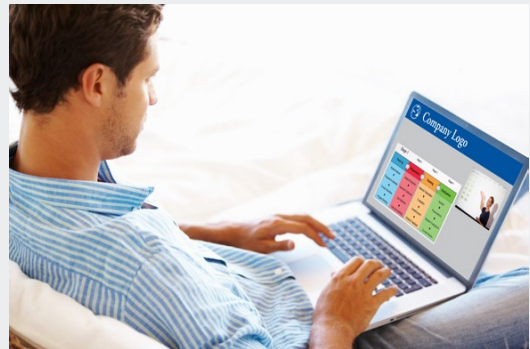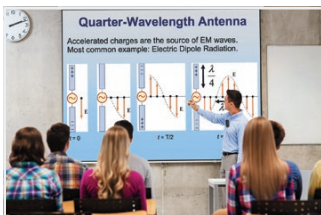
SIMPLE CLASSROOM WITH RECORDING AND STREAMING – PAGE 4

A simple classroom with video projector and speech reinforcement. Capable to stream live to remote students at home while teaching the students present in the classroom.
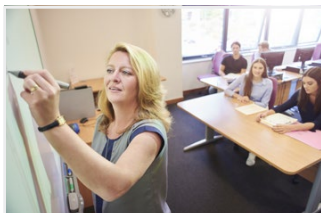

RECORDING STUDIO WITH LEARNING GLASS – PAGE 6

A studio for self recording content with a camera capturing video through Learning Glass onto a USB thumb drive.


ONE TOUCH RECORDING BOOTH – PAGE 8

A small booth for self-recording teaching content or student assignments from a laptop and a camera input onto a USB thumb drive or network attached storage.

MEDIUM CLASSROOM WITH INTERACTIVE WHITEBOARD – PAGE 10

A medium classroom with an interactive whiteboard that can be used for local teaching but also for remote teaching. The teacher can switch between the camera and the output of interactive whiteboard for the remote students.
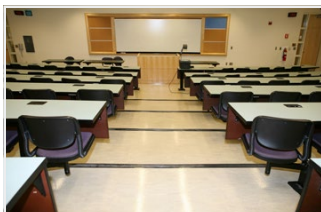
CLASSROOM UPGRADE WITH OVERFLOW AND STREAMING – PAGE 12

A large classroom needs to be upgraded with the capability to stream content to remote students and to overflow rooms. In addition it needs to integrate with a content management platform for structured distribution of learning content to students.

AUDITORIUM WITH LIVE EVENT STREAMING – PAGE 14

An auditorium needs to be upgraded with the capability to live stream events to remote students. The auditorium has dual projectors and is equipped with front and ceiling speakers for voice reinforcement and program audio.
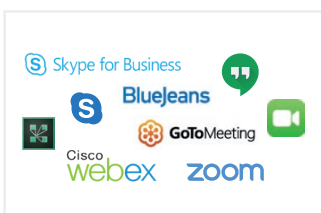
CLASSROOM UPGRADE FOR SOFTWARE CONFERENCING – PAGE 16

A classroom with professional camera and microphone to be integrated with remote teaching on a software conferencing platform such as Zoom, Skype for Business, MS Teams, or Google Meet.

Requirements

A simple classroom equipped with video projector and speech reinforcement. The teacher needs to stream live to remote students at home while teaching the students present in the classroom.

The room size requires an audio system for sound reinforcement with ceiling tile speakers delivering consistent sound levels across the listening area.

Video from the camera capturing the teacher and the presentation from his laptop is combined into one video stream to be viewed by the remote students. The stream will also be recorded simultaneously for future off-line playback.

Simple operation of starting and stopping the recording is achieved with a MediaLink button panel.
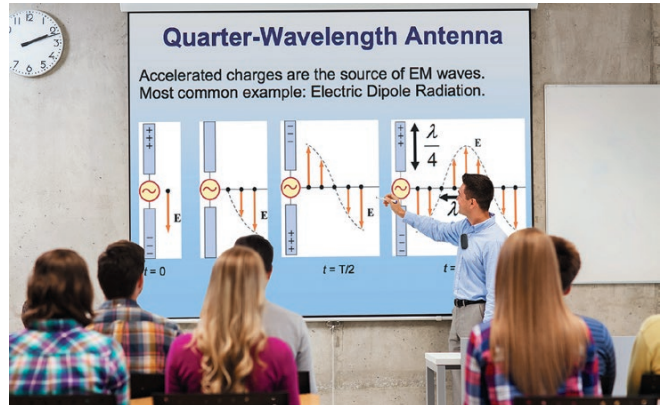
Extron Equipment List

- **SMP 351** – H.264 Streaming Media Processor

- **MPA 152 Plus** – Stereo Amplifier 15 W per channel

- **FF 220T** – Full-Range Flat Field Speakers with Low Profile Enclosure

- **MLC 62 RS EU** – MediaLink Controller for EU Junction Boxes

- **Flex55 102** – 2-gang Mounting Kit for Flex55

Capabilities

- Simultaneous Recording and Streaming

- Display camera and laptop picture in various window arrangements, including picture-in-picture and picture-by-picture arrangements

- Connectivity for HDMI Laptop

- Control for AV functions including power, recording, input switching, and volume control

- Extron patented Flat Field Technology delivers consistent sound levels across the listening area

- ENERGY STAR qualified amplifier with 2 x 15 watts

System Design

Mounted in ceiling

Extron
FF 220T
Full-Range
Flat Field
Speaker

Extron
FF 220T
Full-Range
Flat Field
Speaker

Projection
Screen

Video Projector

Audio — Audio

Extron MPA 152 Plus
Mini Power Amplifier
Mounted at Video Projector

Audio

HDMI

Mounted in Wall

HDMI

RS-232

Extron Flex 55 102 with
MLC 62 RS EU
Flex55 SuperPlate 100
Mounted on Wall

Uni-directional
RS-232

On Desk

HDMI

Laptop

Wireless
Microphone

Camera

System Cabinet

Wireless Microphone
Receiver

Audio

HDMI

Extron
SMP 351
Streaming Media Processor

HDMI

USB ——— Video ——— Audio ——— CATx ——— Control

Requirements

A studio for self-recording content with a camera and microphone onto a USB thumb drive.

The presenter is filmed through the glass, writing onto the transparent surface with a neon marker, where the text glows and appears as if floating in air.

The SMP 111 horizontal video mirroring feature enables automatic mirroring of the content.

Simple operation of starting and stopping the recording is achieved with a remote control panel.
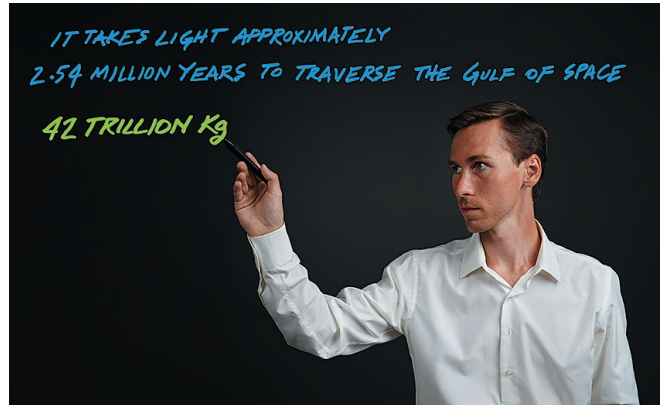
Extron Equipment List

- **SMP 111** – Single Channel H.264 Streaming Media Processor

- **LinkLicense** – SMP 111 Horizontal Video Mirroring Upgrade

- **IPCP Pro PCS1 xi** – IP Link Pro Power and Device Control Processor

- **RCP 101 EU** – Remote Control Panel for SMP series products

- **SMB 211** – Low Profile Surface Mount Box for Flex55 and EU Products

- **Flex55 101** – 1-gang Mounting Kit for Flex55

Capabilities

- Recording with Horizontal Video Mirroring

- Record and stream simultaneously

- Produce MP4 media files that are compatible with virtually any media player

- Confidence display for viewing recorded video

- Control for AV functions including light, recording and inserting chapter marks

- Inserting USB thumb drive will automatically start up the system and switch on lights

System Design

Studio

Studio Light — Power — Studio Light

Audio

Ceiling Array
Microphone

Learning Glass

Camera
placed behind the
learning glass

Confidence Display

**Extron
RCP 101 EU**
Remote Control Panel

USB Flash Drive
for local storage

Power

Mounted in
Equipment Rack

HDMI

USB

Network

**Extron
SMP 111**
Streaming Media Processor

**Extron
IPCP Pro PCS1 xi**
Control Processor

HDMI

| USB | Video | Audio | CATx | Control |
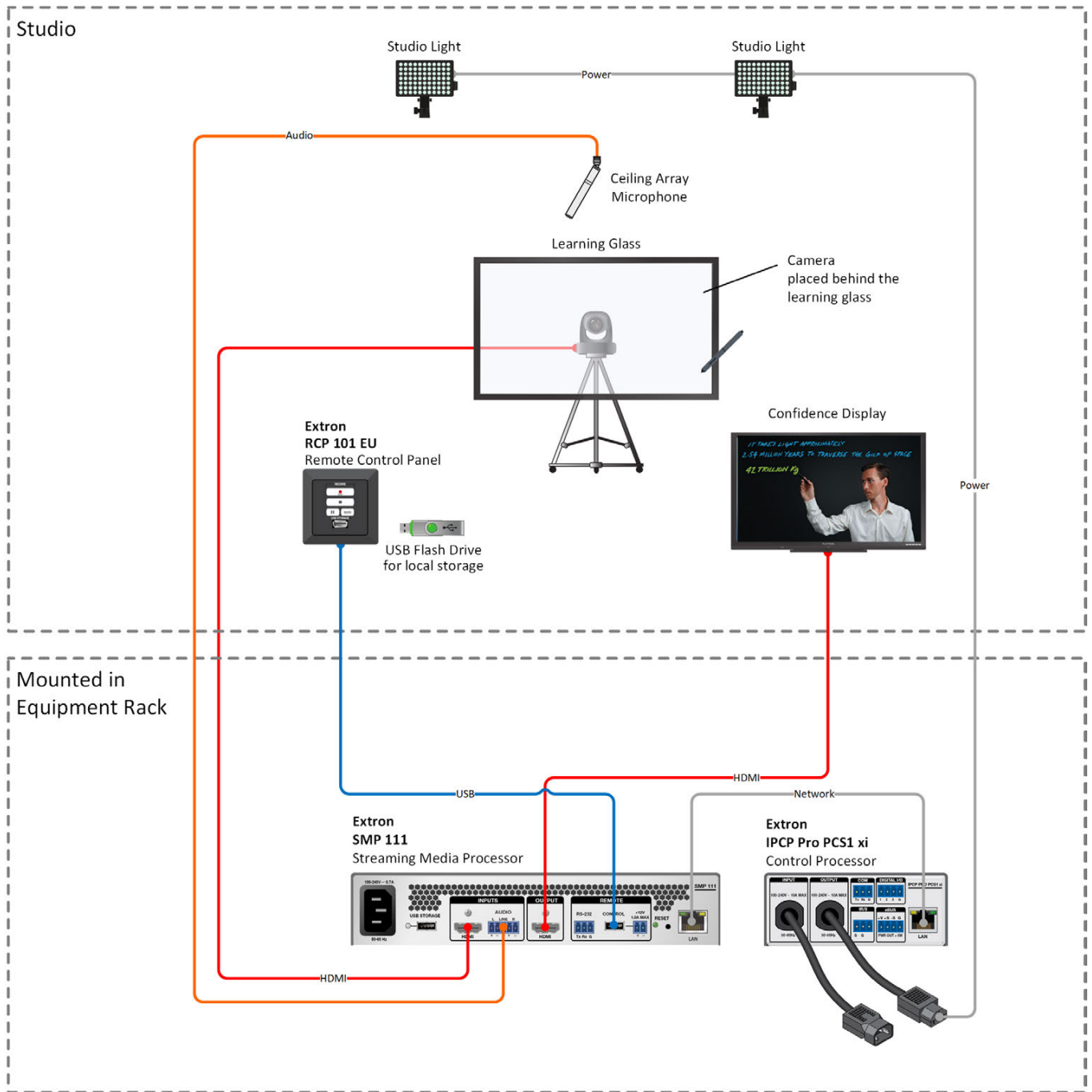
Requirements

A small booth for self-recording content from a laptop and a camera input onto a USB stick.

Video from the camera and the laptop is combined into one video stream that is recorded. Different layouts for combining the camera and laptop picture are available.

Simple operation of starting and stopping the recording is achieved with a remote control panel.

Extron Equipment List

- **SMP 351** – H.264 Streaming Media Processor

- **IPCP Pro PCS1 xi** – IP Link Pro Power and Device Control Processor

- **RCP 101 EU** – Remote Control Panel for SMP series products

- **SMB 212** – Low Profile Surface Mount Box for Flex55 and EU Products

- **Flex55 102** – 2-gang Mounting Kit for Flex55

Capabilities

- Recording options: camera only, camera + laptop and just laptop.

- Display camera and laptop picture in various window arrangements, including picture-in-picture and picture-by-picture arrangements

- Confidence display for viewing recorded video

- Connectivity for HDMI Laptop

- Control for AV functions including light, recording and inserting chapter marks

Picture courtesy of www.sbspods.com

System Design

Mounted in Room

Camera

Studio Light

Placed on Desk

Boundary Microphone

Laptop

HDMI

Confidence Display

Power

Extron
SMB 212 Surface Mount Box with
RCP 101 EU Remote Control Panel
Flex55 Plate for HDMI connectivity

USB Flash Drive for local storage

HDMI

Mounted under Desk

USB

HDMI

HDMI

Network

Extron
IPCP Pro PCS1 xi
Control Processor

Extron
SMP 351
Streaming Media Processor

Audio

| USB | Video | Audio | CATx | Control |

Requirements

The teacher needs an interactive whiteboard that can be used for local teaching but also for remote teaching. The teacher can switch between the camera and the output of interactive whiteboard for the remote students.

The system supports professional grade camera and microphone.

The class can be recorded on a local USB thumb drive or network attached storage.

Optionally there can be a confidence display for viewing the live video stream.

Extron Equipment List

- **SMP 111** – H.264 Streaming Media Processor
- **SW2 HD 4K PLUS** – Two Input HDMI Switcher
- **MLC 62 RS EU** – MediaLink Controller for EU Junction Boxes
- **RCP 101 EU** – Remote Control Panel for SMP series products
- **SMB 213** – 3-gang Low Profile Surface Mount Box for Flex55 and EU Products
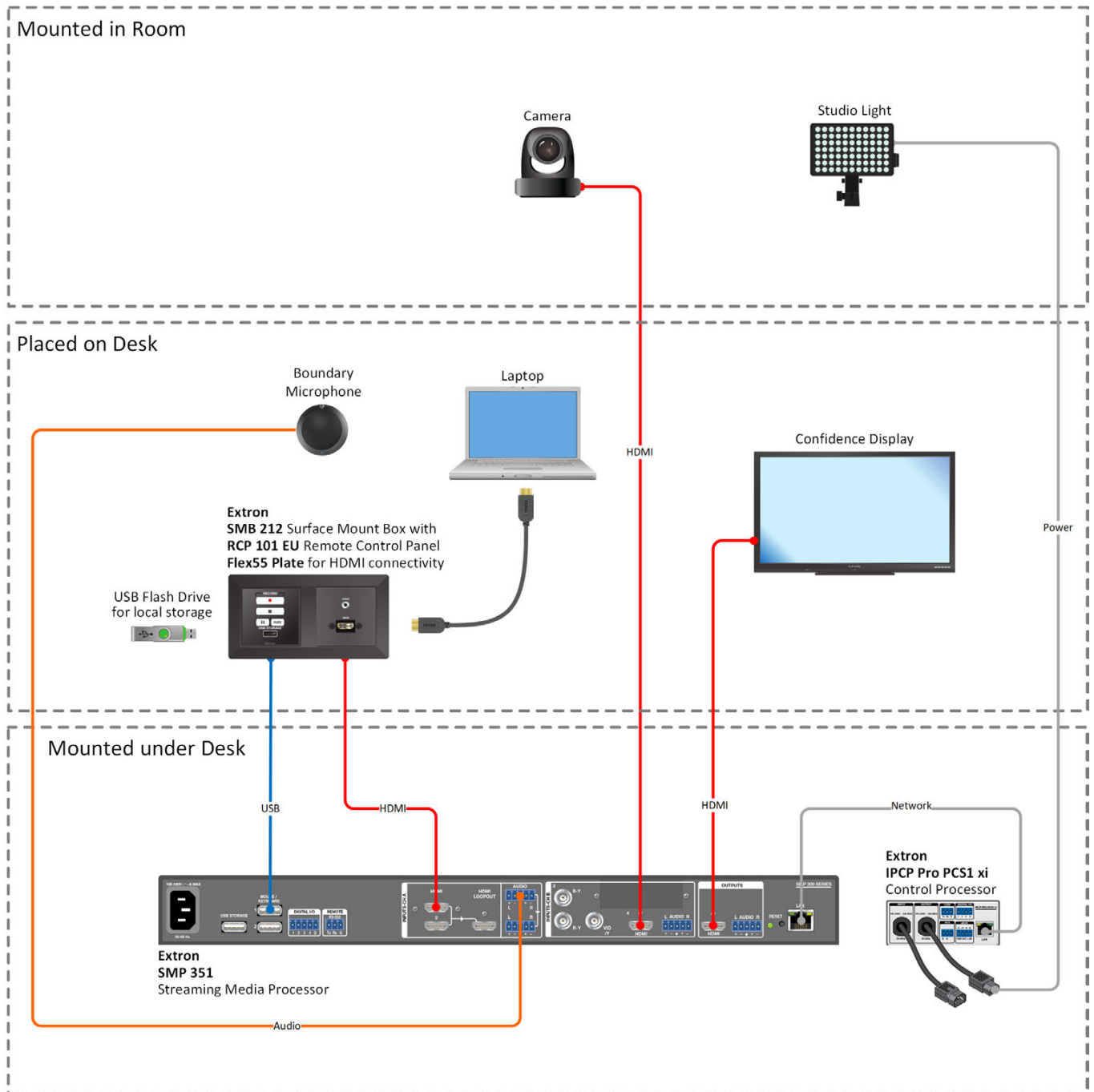- **Flex55 103** – 3-gang Mounting Kit for Flex55

Capabilities

- Simultaneous Recording and Streaming
- Switching between camera and interactive whiteboard picture
- Confidence display for viewing live video stream
- Connectivity for HDMI Laptop and USB thumb drive
- Control for AV functions including power, switching inputs, and recording

System Design

Mounted in Room

Camera

Interactive Whiteboard

HDMI

HDMI

HDMI

USB

RS-232

Desk

Laptop

Confidence Display

Boundary
Microphone

USB Flash Drive
for local storage

USB

HDMI

Extron
SMB 213 Surface Mount Box configured with
Flex55 Plate for HDMI and USB connectivity
MLC 62 RS EU MediaLink Button Control Panel
RCP 101 EU Remote Control Panel

Uni-directional
RS-232

Mounted under Desk

Audio

USB

Extron
SMP 111
Streaming Media Processor

Extron
SW2 HD 4K Plus
Two Input HDMI Switcher

SMP 111

INPUTS   AUDIO   OUTPUT   REMOTE
USB STORAGE   HDMI   LINE   HDMI   RS-232   CONTROL   +12V   RESET
                                                Tx Rx G   1.0A MAX   LAN

HDMI

HDMI

HDMI

―― USB ―― Video ―― Audio ―― CATx ―― Control

Requirements

An existing large classroom needs to be upgraded with the capability to record and stream content to remote students. It also needs to integrate with a content management platform for structured distribution of learning content to students.

The classroom has a ceiling tile microphone, front and ceiling speakers for voice reinforcement and program audio. The beamforming ceiling microphone detects where the teacher is, and this information is used to point the camera at the teacher with the MediaLink controller.

Several sources such as a document camera, TV receiver and local PC need to be able to be streamed to remote students but also to be locally viewed by students.
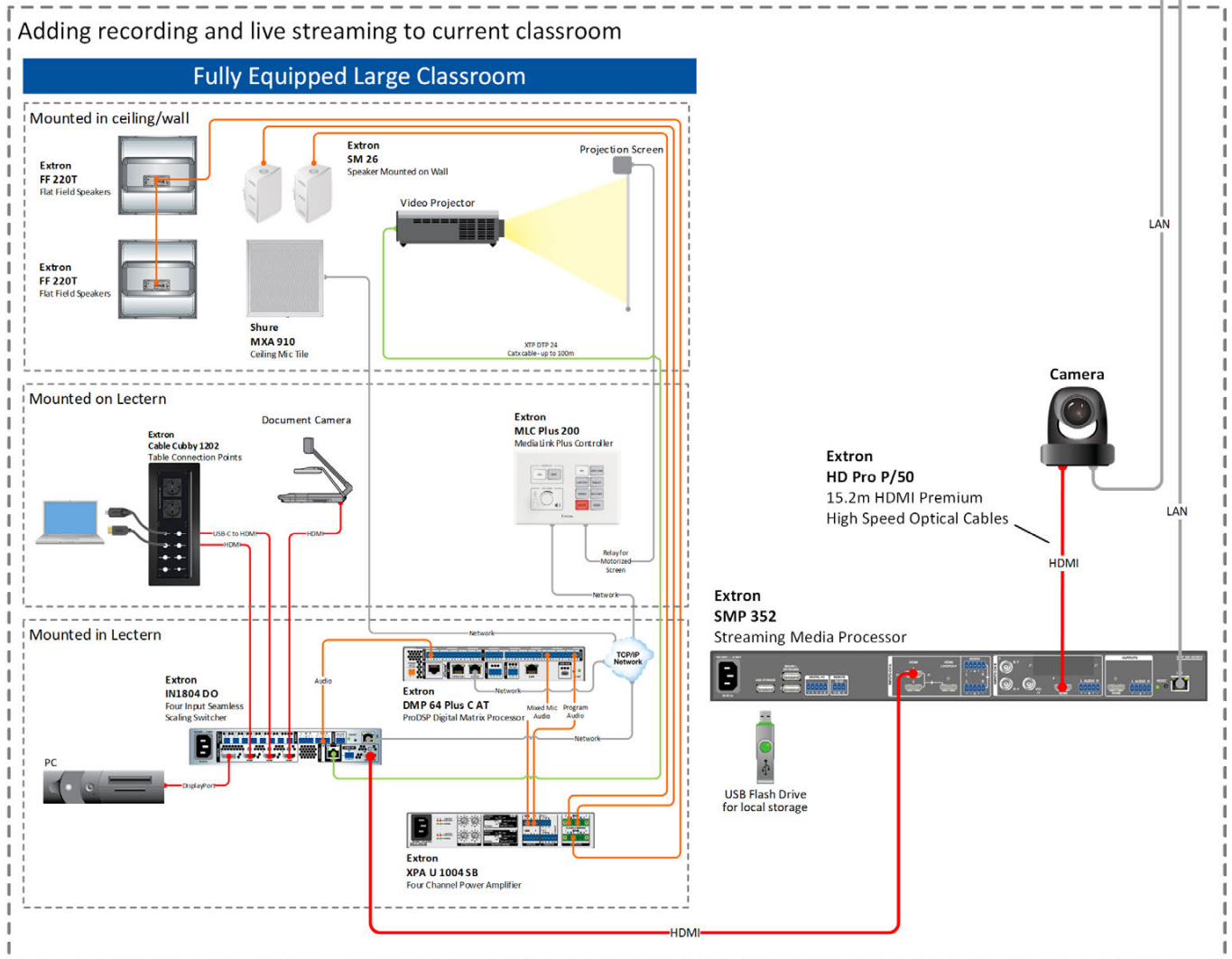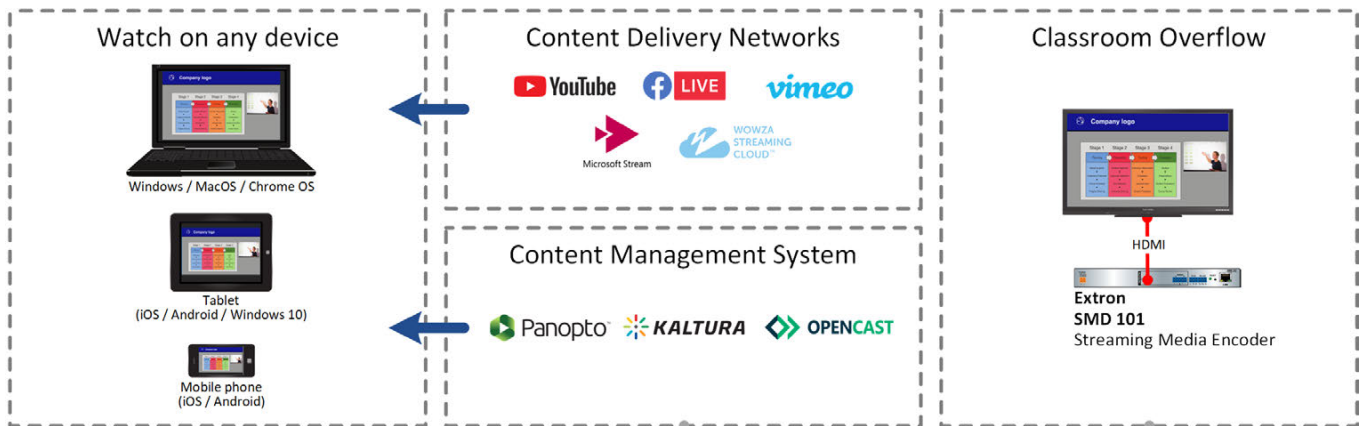
Extron Equipment List

- **SMP 352** – Dual Recording H.264 Streaming Media Processor
- **IN1804 DO** – Four Input 4K/60 Seamless Switcher
- **DMP 64 Plus C AT** – 6x4 ProDSP Digital Matrix Processor
- **XPA U 1004 SB** – Four Channel Bridgeable Output Amplifier 200 Watts Per Channel
- **Cable Cubby 1202** – Cable Access Enclosure for AV Connectivity, Remote Control, and Power
- **MLC Plus 200** – MediaLink Plus Controller
- **SM 26** – SpeedMount Two-Way Surface Mount Speakers with 6.5" Woofer
- **FF 220T** – Full-Range Flat Field Speakers with Low Profile Enclosure

Capabilities

- Integrates Document Camera, PC, TV receiver sources into presentation system
- Record and stream simultaneously
- Supports content management platforms such as Panopto, Kaltura and Opencast
- Supports Live streaming via YouTube, Facebook Live, Microsoft Stream, Twitch and Wowza
- Display camera and laptop picture in various window arrangements, including picture-in-picture and picture-by-picture arrangements
- Dual channel recording and streaming with confidence stream
- Connectivity for HDMI Laptop, Document Camera and TV Receiver
- Simple Button Control for AV functions including power, switching input and recording

System Design

Watch on any device

Windows / MacOS / Chrome OS

Tablet
(iOS / Android / Windows 10)

Mobile phone
(iOS / Android)

Content Delivery Networks

▶ YouTube   f LIVE   vimeo

Microsoft Stream   WOWZA STREAMING CLOUD

Content Management System

Panopto   KALTURA   OPENCAST

Classroom Overflow

HDMI

Extron
SMD 101
Streaming Media Encoder

Internet

LAN

Internet — Internet — **LAN**

LAN

Firewall

Adding recording and live streaming to current classroom

Fully Equipped Large Classroom

Mounted in ceiling/wall

Extron
FF 220T
Flat Field Speakers

Extron
FF 220T
Flat Field Speakers

Extron
SM 26
Speaker Mounted on Wall

Projection Screen

Video Projector

Shure
MXA 910
Ceiling Mic Tile

XTP DTP 24
Catx cable - up to 100m

LAN

Camera

Mounted on Lectern

Document Camera

Extron
Cable Cubby 1202
Table Connection Points

Extron
MLC Plus 200
Media Link Plus Controller

USB-C to HDMI
HDMI
HDMI

Relay for
Motorized
Screen

Network

Extron
HD Pro P/50
15.2m HDMI Premium
High Speed Optical Cables

HDMI

LAN

Mounted in Lectern

Network

TCP/IP
Network

Extron
IN1804 DO
Four Input Seamless
Scaling Switcher

Audio

Extron
DMP 64 Plus C AT
ProDSP Digital Matrix Processor

Mixed Mic   Program
Audio   Audio

Network

Extron
SMP 352
Streaming Media Processor

PC

DisplayPort

Extron
XPA U 1004 SB
Four Channel Power Amplifier

USB Flash Drive
for local storage

HDMI

— USB   — Video   — Audio   — CATx   — Control

Requirements

An existing auditorium needs to be upgraded with the capability to live stream events to remote students.

The auditorium has dual projectors and is equipped with front and ceiling speakers for voice reinforcement and program audio.

Several sources such as a document camera, TV receiver and local PC need to be able to be streamed to remote students but also to be locally viewed by students. Streams from other classrooms (overflow) can also be viewed on the main projectors.
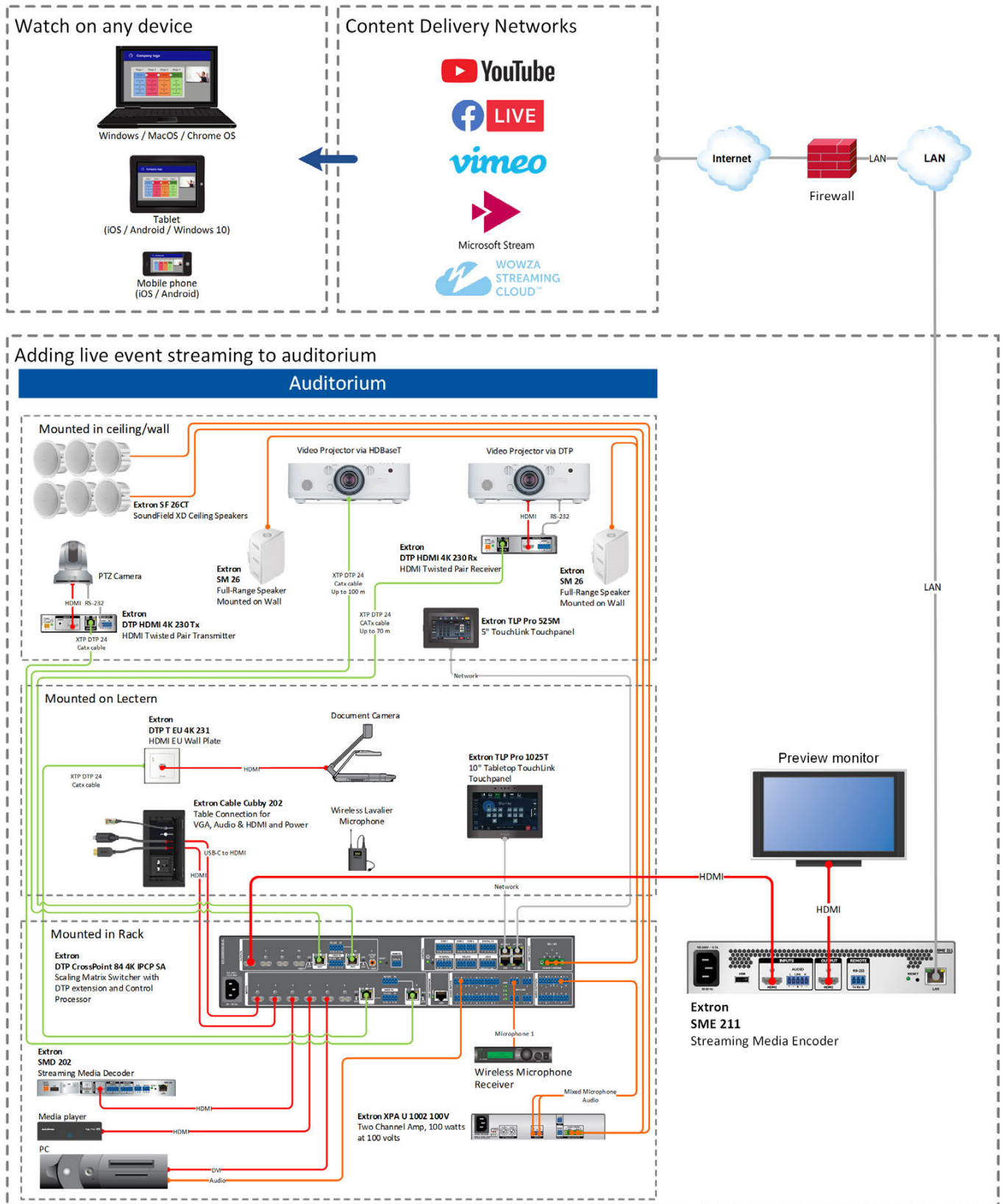
Extron Equipment List

- **SME 211** – H.264 Streaming Media Encoder
- **DTP CrossPoint 84 4K IPCP SA** – Scaling Matrix Switcher with DTP extension, Control Processor, Audio DSP and Amplifier
- **DTP HDMI 4K 230 Tx/Rx** – DTP Transmitter/Receiver for HDMI
- **DTP T EU 4K 231** – DTP Transmitter for Flex55 and EU Junction Boxes
- **Cable Cubby 202** – Cable Access Enclosure for AV Connectivity, Remote Control, and Power
- **TLP Pro 1025T** – 10" Tabletop TouchLink Pro Touchpanel
- **TLP Pro 525M** – 5" Wall Mount TouchLink Pro Touchpanel
- **XPA U 1002-100V** – Two Channel Amplifier 100 watts at 100V
- **SM 26** – SpeedMount Two-Way Surface Mount Speakers with 6.5" Woofer
- **SF 26CT** – SoundField XD Ceiling Speakers
- **SMD 202** – Streaming Media Decoder

Capabilities

- Supports Live streaming via YouTube, Facebook Live, Microsoft Stream, Twitch and Wowza
- All-in-one 4K matrix switcher, scaler, audio DSP with AEC, audio power amplifier, and control processor
- Video preview of live stream
- Seamless switching transitions
- Touchpanel control for AV functions including power, projector, switching sources and volume
- Connectivity and cable management with Cable Cubby

System Design

Watch on any device

Windows / MacOS / Chrome OS

Tablet
(iOS / Android / Windows 10)

Mobile phone
(iOS / Android)

Content Delivery Networks

YouTube

LIVE

vimeo

Microsoft Stream

WOWZA
STREAMING
CLOUD™

Internet

Firewall

LAN

LAN

Adding live event streaming to auditorium

Auditorium

Mounted in ceiling/wall

Video Projector via HDBaseT

Video Projector via DTP

Extron SF 26CT
SoundField XD Ceiling Speakers

HDMI   RS-232

**Extron
DTP HDMI 4K 230 Rx**
HDMI Twisted Pair Receiver

PTZ Camera

**Extron
SM 26**
Full-Range Speaker
Mounted on Wall

XTP DTP 24
Catx cable
Up to 100 m

**Extron
SM 26**
Full-Range Speaker
Mounted on Wall

HDMI RS-232

**Extron
DTP HDMI 4K 230 Tx**
HDMI Twisted Pair Transmitter

XTP DTP 24
Catx cable

XTP DTP 24
CATx cable
Up to 70 m

Extron TLP Pro 525M
5" TouchLink Touchpanel

Network

LAN

Mounted on Lectern

**Extron
DTP T EU 4K 231**
HDMI EU Wall Plate

Document Camera

Extron TLP Pro 1025T
10" Tabletop TouchLink
Touchpanel

XTP DTP 24
Catx cable

HDMI

Extron Cable Cubby 202
Table Connection for
VGA, Audio & HDMI and Power

Wireless Lavalier
Microphone

USB-C to HDMI

HDMI

Network

HDMI

Preview monitor

HDMI

Mounted in Rack

**Extron
DTP CrossPoint 84 4K IPCP SA**
Scaling Matrix Switcher with
DTP extension and Control
Processor

**Extron
SME 211**
Streaming Media Encoder

Microphone 1

**Extron
SMD 202**
Streaming Media Decoder

Media player

HDMI

HDMI

PC

DVI

Audio

Wireless Microphone
Receiver

Mixed Microphone
Audio

Extron XPA U 1002 100V
Two Channel Amp, 100 watts
at 100 volts

| USB | Video | Audio | CATx | Control |

Requirements

To integrate professional grade camera and microphone into software conferencing platforms for remote teaching.

The voice of the teacher is reinforced locally in the classroom and the remote audio from the conference is also amplified and played back via ceiling speakers.
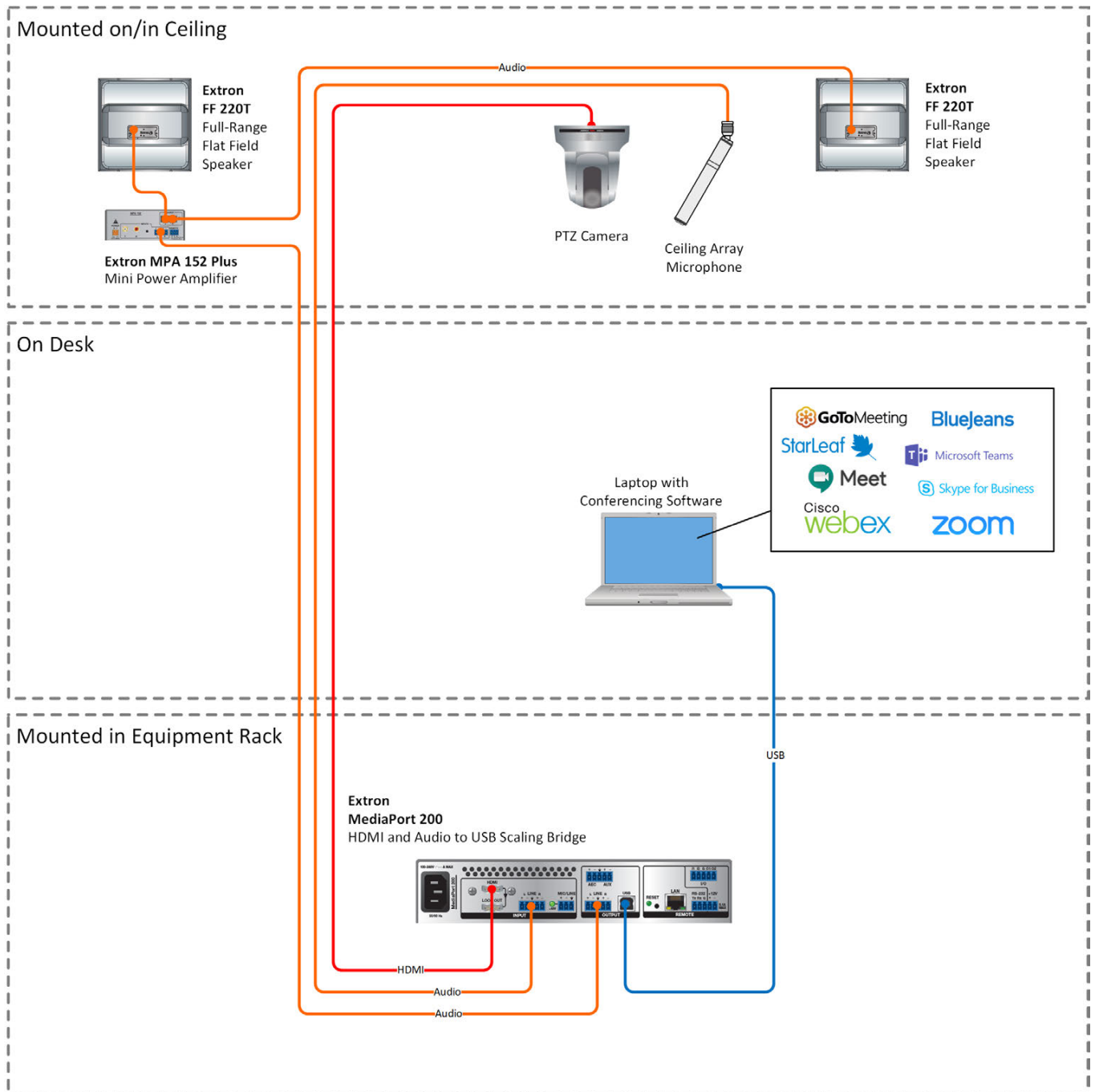
Extron Equipment List

- **MediaPort 200** – HDMI and Audio to USB Scaling Bridge

- **MPA 152 Plus** – Stereo Amplifier 15 W per channel
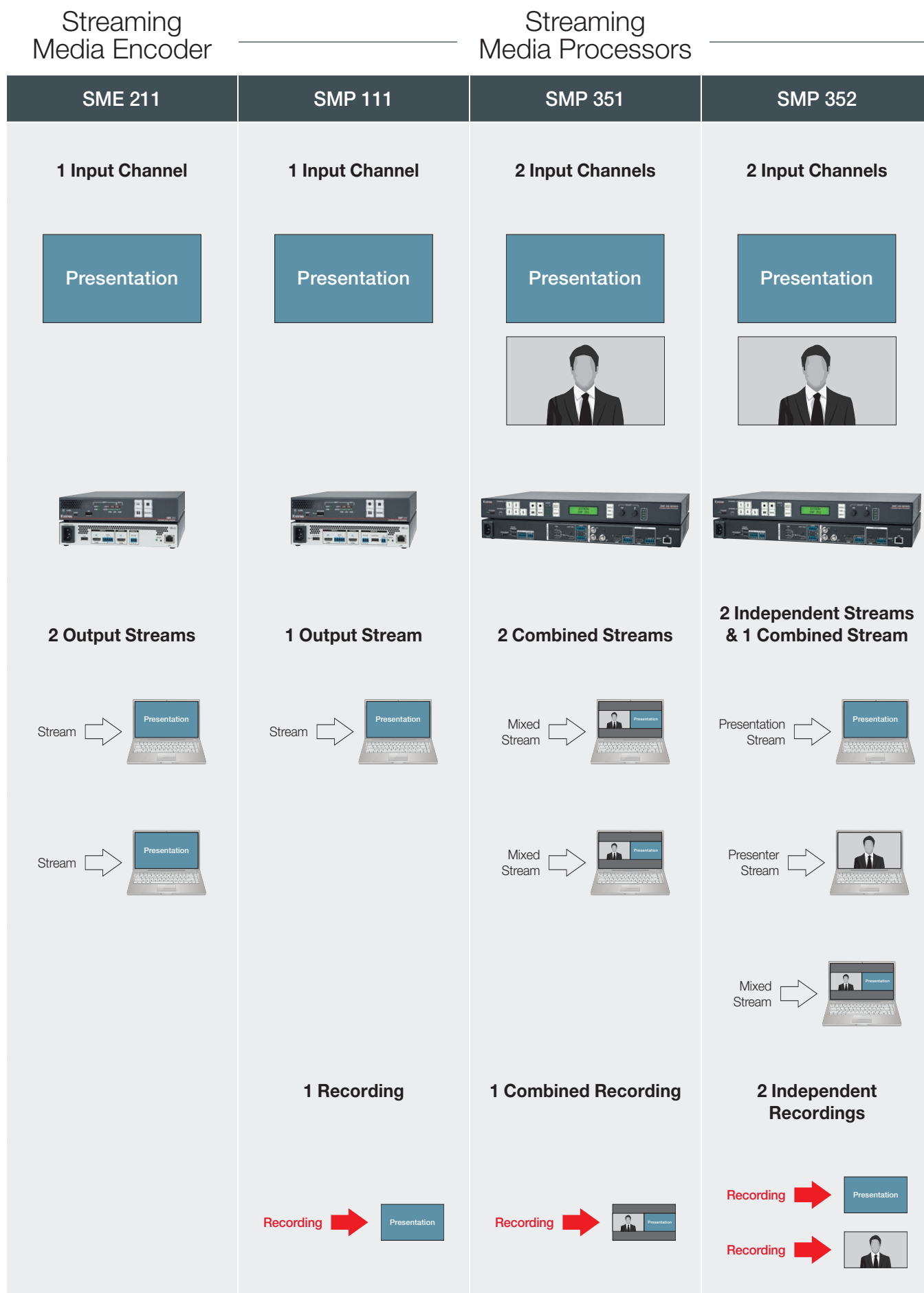
- **FF 220T** – Full-Range Flat Field Speakers with Low Profile Enclosure

Capabilities

- Seamlessly integrates Pro AV cameras and microphones into software codec applications

- Supports popular software communications platforms including Microsoft Skype/Skype for Business/Teams, Adobe Connect, Apple FaceTime, BlueJeans, Cisco Webex, Citrix, GoToMeeting, Google Hangouts, Lifesize Clearsea, and Zoom

- Local audio and voice reinforcement with 2 x 15 W amplifier and ceiling speakers

- USB 4x2 audio interface

- Integrated audio DSP

- Microphone and USB audio ducking

- Digital audio processing including gain, mixing, parametric EQ, filtering, dynamics, and ducking

- AEC reference output

- Video scaling provides USB output from 320x180 to 1080p

System Design

**Extron
FF 220T**
Full-Range
Flat Field
Speaker

**Extron
FF 220T**
Full-Range
Flat Field
Speaker

Audio

Extron MPA 152 Plus
Mini Power Amplifier

PTZ Camera

Ceiling Array
Microphone

On Desk

Laptop with
Conferencing Software

GoToMeeting   BlueJeans
StarLeaf   Microsoft Teams
Meet   Skype for Business
Cisco
webex   zoom

Mounted in Equipment Rack

USB

**Extron
MediaPort 200**
HDMI and Audio to USB Scaling Bridge

HDMI

Audio

Audio

—— USB —— Video —— Audio —— CATx —— Control

H.264 STREAMING AND RECORDING

Streaming Media Encoder		Streaming Media Processors	
SME 211	**SMP 111**	**SMP 351**	**SMP 352**
1 Input Channel	**1 Input Channel**	**2 Input Channels**	**2 Input Channels**
Presentation	Presentation	Presentation	Presentation
2 Output Streams	**1 Output Stream**	**2 Combined Streams**	**2 Independent Streams & 1 Combined Stream**
Stream → Presentation	Stream → Presentation	Mixed Stream →	Presentation Stream → Presentation
Stream → Presentation		Mixed Stream →	Presenter Stream →
			Mixed Stream →
	1 Recording	**1 Combined Recording**	**2 Independent Recordings**
	Recording → Presentation	Recording →	Recording → Presentation
			Recording →

Live Streaming

Scale up live streaming audiences by streaming to a public content delivery network (CDN) such as YouTube or Microsoft Stream. Or via a Content Management System such as Kaltura or Panopto. We support the most common platforms. This will cater for users with different line speeds, resolutions and provide a stream address that's easy to navigate to.
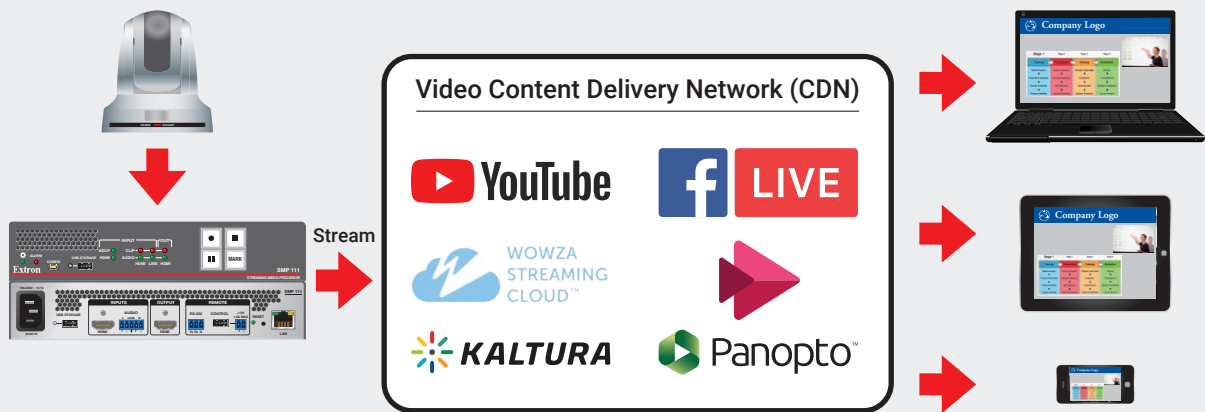
Recording

Publish your recordings to a content management system to allow editing, assignment to different user groups, conversion to support different platforms and the scale to support thousands of users.
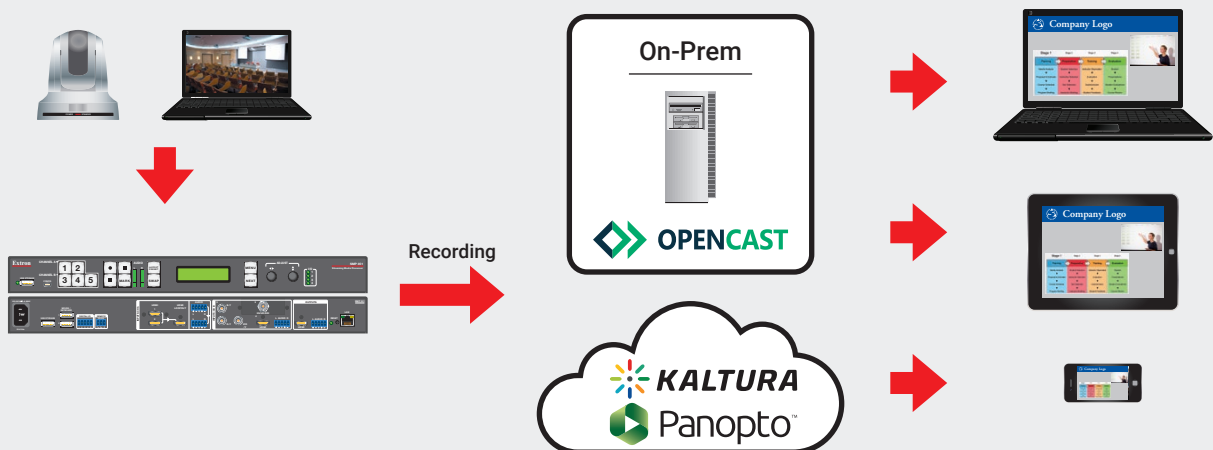
SMP 351

H.264 Streaming Media Processor

The SMP 351 is a high performance recording and streaming processor for capturing and distributing AV sources and presentations as recorded media or live streaming. It incorporates Extron's FlexOS®, a flexible platform for automating system operation. Accepting HDMI, component, composite, and optional 3G-SDI signals, it applies two-window processing to the selected sources. The SMP 351 can record and stream simultaneously and can stream at two different resolutions and bit rates concurrently using a range of transport protocols and session management options. Comprehensive control and configuration features make the SMP 351 integration-friendly, and easy to control and operate. Requiring no licensing fees, the SMP 351 has a low cost of ownership, making it a cost-effective solution for delivering presentations to a larger audience.

Key Features

- Process two high resolution AV sources from up to five available input signals

- Record and stream simultaneously

- High quality scaling with flexible two-window management

- Produce MP4 media or M4A audio files that are compatible with virtually any media player

- Stream concurrently at two resolutions and bit rates from the same source

- LinkLicense® for dual channel recording and streaming
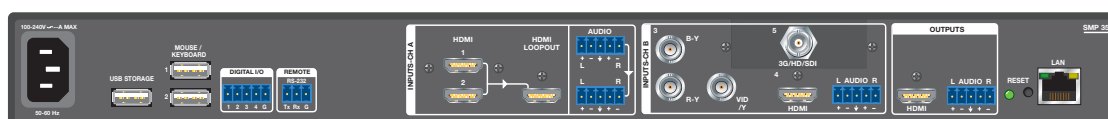
| Model	Version Description	Part Number
SMP 351	Standard Version – 80 GB SSD	60-1324-01
SMP 351 3G-SDI	with 3G-SDI Input – 80 GB SSD	60-1324-02
SMP 351	Standard Version – 400 GB SSD	60-1324-11
SMP 351 3G-SDI	with 3G-SDI Input – 400 GB SSD	60-1324-12
LinkLicense	SMP 351 80 GB Dual Recording Upgrade	79-2547-01
LinkLicense	SMP 351 w/ 3G-SDI 80 GB Dual Recording Upgrade	79-2547-02
LinkLicense	SMP 351 400 GB Dual Recording Upgrade	79-2547-03
LinkLicense	SMP 351 w/ 3G-SDI 400 GB Dual Recording Upgrade	79-2547-04
LinkLicense	SMP 300 Series Panopto Features Upgrade	79-2562-01
LinkLicense	SMP 300 Series Kaltura Features Upgrade	79-2548-01
LinkLicense	SMP 300 Series Horizontal Video Mirroring Upgrade	79-2553-01

SMP 352

Dual Recording H.264 Streaming Media Processor

The SMP 352 is a high performance recording and streaming processor for capturing and distributing AV sources and presentations as recorded media or live streaming. It can create independent recordings from two different sources, and incorporates Extron's FlexOS®, a flexible platform for automating system operation. The SMP 352 accepts HDMI, component, composite, and optional 3G-SDI signals and applies two-window processing to selected sources. It can record and stream simultaneously and can stream at two different resolutions and bit rates concurrently using a range of transport protocols and session management options. With no recuring licensing fees and comprehensive control and configuration features, the SMP 352 is a cost-effective, integration-friendly solution for delivering presentations to a larger audience.

Key Features

- Process two high resolution AV sources from up to five available input signals

- Record and stream simultaneously

- High quality scaling with flexible two-window management

- Produce MP4 media or M4A audio files that are compatible with virtually any media player

- Stream concurrently at two resolutions and bit rates from the same source

- Dual channel recording and streaming with confidence stream
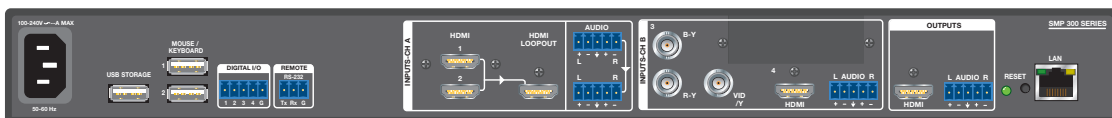
Model	Version Description	Part Number
SMP 352 - 400 GB SSD	Dual Recording – 400 GB SSD	60-1634-11
SMP 352 3G-SDI - 400 GB SSD	Dual Recording w/3G-SDI – 400 GB SSD	60-1634-12
LinkLicense	SMP 300 Series Panopto Features Upgrade	79-2562-01
LinkLicense	SMP 300 Series Kaltura Features Upgrade	79-2548-01
LinkLicense	SMP 300 Series Horizontal Video Mirroring Upgrade	79-2553-01

SMP 111

Single Channel H.264 Streaming Media Processor

The SMP 111 is a high performance recording and streaming processor for capturing and distributing AV sources and presentations as live streaming and recorded media. The SMP 111 accepts an HDMI signal with embedded audio and an analog audio signal. Extron high performance scaling and flexible signal processing enable superior display of content of varying resolutions from computers and HDTV sources. The SMP 111 supports extensive streaming capabilities. It can record and stream simultaneously, with independent resolutions and bit rates, using a range of transport protocols and session management options. Recording with the SMP 111 provides easy capture of live HDMI signals to an internal flash drive and external USB drives. Requiring no licensing fees, the SMP 111 is a cost-effective solution for streaming and recording content.

Key Features

- Process live, high resolution HDMI video and audio with metadata

- Record and stream simultaneously

- High quality scaling with aspect ratio control, size, and position

- Produce MP4 media files that are compatible with virtually any media player

- Automatic file uploading

- RTMP streaming protocol supports popular third party hosting services

Model	Version Description	Part Number
SMP 111	Single Channel Recorder – 32 GB	60-1594-01
LinkLicense	SMP 111 Horizontal Video Mirroring Upgrade	79-2553-02

SME 211

Streaming Media Encoder

The SME 211 is a high performance H.264 streaming media encoder for streaming audio and video signals over IP networks. It accepts an HDMI signal with embedded audio and an analog audio signal. Extron high performance scaling and flexible signal processing facilitate superior display of content from different sources. The SME 211 supports unicast and multicast streaming protocols, including RTMP for streaming directly to major Content Delivery Networks – CDNs, or social media platforms like Facebook and YouTube. Presets allow a quick recall of system configurations. The SME 211 can stream at two different resolutions and bit rates concurrently, supporting up to six simultaneous streams with push and pull streaming. Built in audio mixing and DSP features enable enhanced audio processing without requiring external mixing and DSP equipment.

Key Features

- Stream video at up to 1080p/60

- Bit rates up to 25 Mbps

- Enhanced encoding control

- Process live, high resolution HDMI video and audio

- Stream at two resolutions and bit rates simultaneously with independent stream control

- Simultaneous multicast and unicast streaming

Model	Version Description	Part Number
SME 211	Streaming Media Encoder	60-1763-01

SMD 101

H.264 Streaming Media Decoder

The SMD 101 is a compact, high performance H.264 decoder used with Extron encoders to provide complete end-to-end AV streaming systems. It decodes live streams from H.264 encoders and plays back AV media files available from network shares. It is compatible with streaming resolutions and refresh rates up to 1080p/60. Advanced signal processing, scaling, and aspect ratio management supply high quality signals to AV displays. The SMD 101 offers integration-friendly control features such as IR remote, wired IR, RS-232, or Ethernet and an easy-to-navigate Web interface, which provide flexible control and management options. This compact, energy-efficient decoder is an ideal for use in overflow, monitoring, multi-channel streaming systems, high resolution signage, and messaging applications.

Key Features

- Supports live IP video stream decoding

- Supports streaming resolutions from 480x320 up to 1080p/60

- AV media file playback from network shares

- Compatible with MP4 and MPEG-2 Transport Stream container formats

- Selectable audio output format: HDMI-embedded stereo audio or analog stereo audio

- Integrated scaler offers selectable output resolutions from 640x480 to 1920x1200

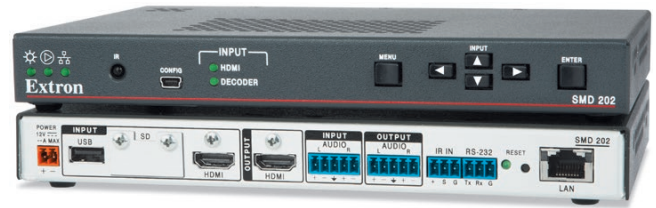| Model	Version Description	Part Number
SMD 101	H.264 Decoder	60-1305-01

SMD 202

H.264 Streaming Media Player and Decoder

The Extron SMD 202 is a compact, high performance media player and live stream decoder used in H.264 streaming applications. It provides the flexibility to present a locally connected AV signal, decode a live streaming source, or play back media files from internal memory, removable SD card, local USB, or network storage. The SMD 202 supports a wide range of media file container formats and streaming protocols, making it adaptable for use with a variety of encoded media. Advanced signal processing, scaling, and aspect ratio management supply high quality signals to AV displays. An intuitive, interactive on-screen menu makes setup and source selection using front panel buttons or the optional handheld IR remote control easy. Designed for pro AV applications, the SMD 202 can be controlled using Ethernet, RS-232, IR, or wired IR.

Key Features

- Plays back media files from internal memory, removable SD card, USB storage, or network shares

- Decodes live H.264 streams using a variety of streaming protocols

- Local HDMI input with embedded stereo or analog stereo audio

- Selectable output resolutions from 640x480 to 1920x1200 including 1080p/60

- Supports streaming resolutions from 480x320 up to 1080p/60

- Multi-language, interactive on-screen display for setup and source selection

Model	Version Description	Part Number
SMD 202	H.264 Player and Decoder	60-1306-01

RCP 101
Remote Control Panels for SMP Series Products

Extron RCP 101 Series remote control panels feature backlit transport controls for remote operation of Extron SMP Series products. A USB port provides convenient access to a thumb drive or external portable storage. RCP 101 panels have status and alarm indicator lights with an audible buzzer. A 15 foot (4.6 meter) USB cable is included. The RCP 101 panels may be used with Extron USB Extender Plus Series twisted pair extenders to support distances up to 330 feet (100 meters). Available in decorator-style, MK, and EU versions; the EU version is compatible with Flex55 enclosures or EU junction boxes. RCP 101 Series panels include black and a white faceplates to compliment a wide range of environments. MK model is available in white only.

Key Features

• Backlit transport controls for SMP Series products

• USB port supports thumb drives and external portable drives

• Available versions include decorator-style, MK, and EU

• Compatible with Flex55 mounting kits and enclosures - RCP 101 EU

• Status and alarm indicators with buzzer

Model	Version Description	Part Number
RCP 101 D	SMP Series Remote Control Panel – Decorator-Style	60-1598-01
RCP 101 MK	SMP Series Remote Control Panel – MK Mount	60-1598-22
RCP 101 EU	SMP Series Remote Control Panel – Flex55 and EU	60-1598-32

MediaPort 200
HDMI and Audio to USB Scaling Bridge

The Extron MediaPort 200 is an HDMI to USB bridge for integrating pro AV sources or systems with software codec conferencing applications. It works seamlessly with a computer using generic USB video and audio drivers. The MediaPort® 200 features an HDMI input with HDCP-compliant loop through, accepts signals up to 1920x1200, and scales video to a USB 2.0 output. Audio features include program and mic inputs, HDMI audio de-embedding, and USB bidirectional audio, plus AEC reference and line level outputs. The MediaPort 200 also includes DSP with EQ, filters, mixing, dynamics, and ducking. This allows the MediaPort 200 to serve as a complete soft codec interface, with the added flexibility of integrating into larger hardware codec or DSP systems. The MediaPort 200 enables versatile integration of conferencing computers into pro AV designs.

Key Features

- Seamlessly integrates pro AV sources or systems into software codec applications

- USB 2.0 device connection uses generic USB drivers for universal compatibility

- Video scaling provides USB output from 320x180 to 1080p/15 to match common software codec requirements

- Integrated audio DSP

- AEC reference output

- HDCP-compliant HDMI input and loop-through

Model	Version Description	Part Number
MediaPort 200	HDMI and Audio to USB Scaling Bridge	60-1488-01

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