

September 19, 2019

**Extron H.264 Media Processors and Encoders
Streaming to third parties using RTMPS**



The following notes provide guidance on setting up the Extron Media Processors and Encoders for publishing live streams to third party services such as Facebook Live via RTMPS. For more information, please call your Extron Application Engineer.

Extron Products Affected:

SMP 111	60-1594-01
SME 211	60-1763-01
SMP 351	60-1324-01 / 60-1324-11
SMP 351 3G-SDI	60-1324-02 / 60-1324-12
SMP 352 - 400 GB SSD	60-1634-11
SMP 352 3G-SDI - 400 GB SSD	60-1634-12

SPECIAL NOTES

Streaming to 3rd party services requires a user to have an account with those services. Accounts with third party providers are the responsibility of those maintaining the stream and its content.

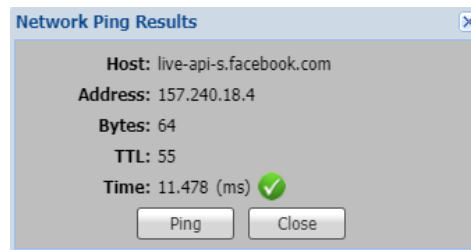
TECH NOTE

Extron encoders support RTMP push streaming for publishing live video to third party services like YouTube, Wowza Cloud, Twitch, MS Stream, and others, as well as support for RTMPS for live video uploads to Facebook Live.

Note: The examples in this document show the interface of the **SMP 351**. The interfaces of the **SME 211** and **SMP 111 series** may look different, but the same settings apply.

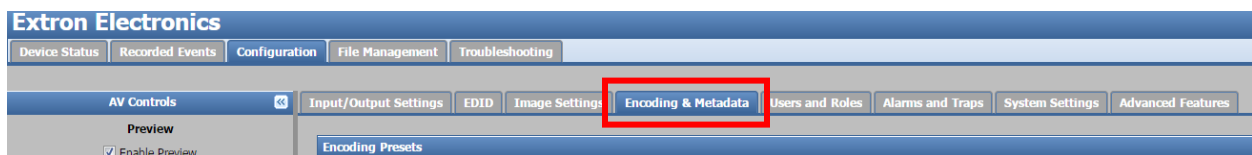
To configure the Encoder for RTMPS Push streaming to Facebook Live:

1. Ensure you SMP unit is connected to the network and has access to the internet
 - a. Open the web browser of the Encoder, **Troubleshooting, Diagnostic Tools**
 - b. Ping your live service, such as [live-api-s.facebook.com]
 - i. If successful, a green checkmark is shown.



- ii. If results fail, verify network and DNS settings.

2. Open a web browser of the Encoder, **Configuration, Encoding Presets:**



3. Confirm the Encoder is in **Stop Mode**. If needed, press stop on the front panel (SMP series only).
4. Select **PUSH** from the Streaming Method slider and select RTMP for the Streaming Protocol.

SMP 351 example

SMP 111 example

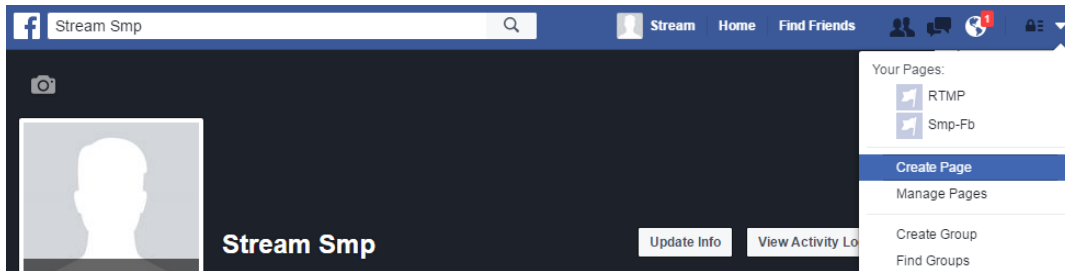
SME211 example

5. The **Server URL**, **Stream Name/Key** and optionally the **Username**, and **Password** information is needed:
 - a. Follow the directions below to obtain the fields from this service provider.

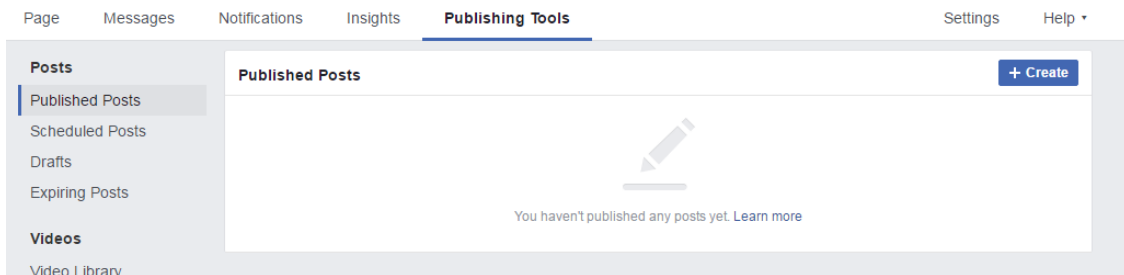
Streaming to Facebook Live

Facebook allows live streaming from a Facebook Page, not a Facebook Profile. Using Profiles for business is against their policy.

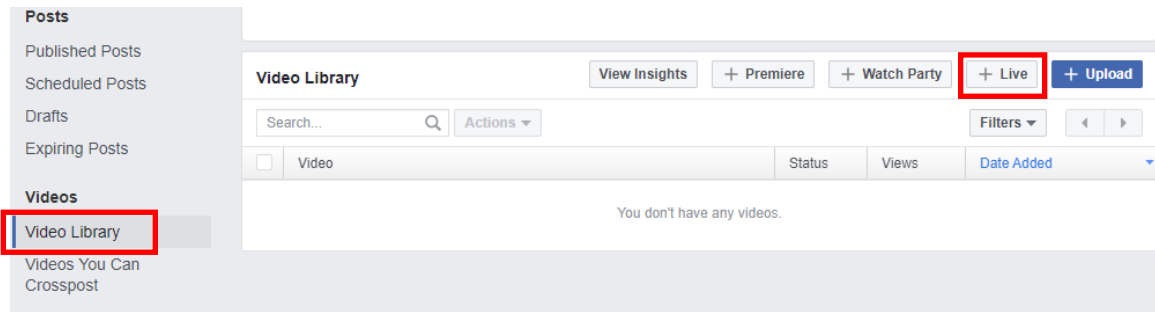
1. Go to www.facebook.com and login to your account for the Facebook Page.
2. If you don't have a Facebook Page, select from the top right, [Create Page].
 - a. Alternatively, you can convert a Facebook Profile to a Facebook Page: <https://www.facebook.com/help/175644189234902/>



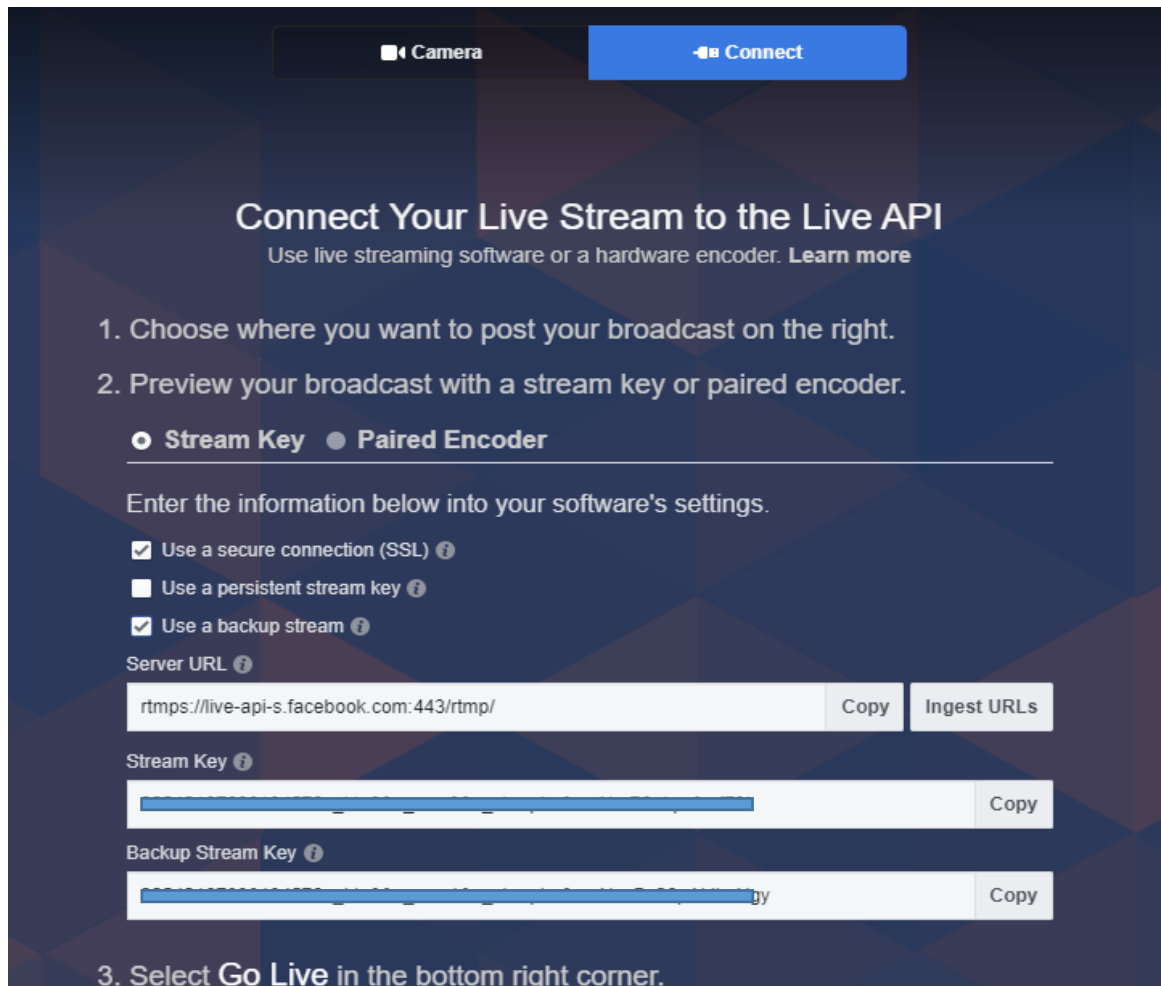
3. Select Type of page; Company, Organization or Institution. Follow the instructions to setup the Facebook Page.
4. Once you are on the Facebook Page, select [**Publishing Tools**].



5. Select **Video Library** on the left side bar.



6. Click on **[+Live]** button to open the Server URL and Stream Key information.



WORLDWIDE HEADQUARTERS

1025 E. Ball Road · Anaheim, California 92905
 800.623.9876 · 714.491.1500 · FAX 714.481.1517 · www.extron.com

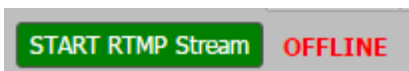
Anaheim · Raleigh · Silicon Valley · Dallas · New York · Washington, DC · Toronto · Mexico City · Paris · London
 Amersfoort · Frankfurt · Stockholm · Moscow · Dubai · Johannesburg · Tel Aviv · Sydney · Melbourne · New Delhi
 Bangalore · Singapore · Seoul · Shanghai · Beijing · Tokyo

- Copy and paste the **Server URL** and **Stream Name/key** to the Encoder’s Streaming data fields, then Click **[Apply]**.

IMPORTANT NOTE:

- Use a secure connection (SSL) is supported by Extron encoders using RTMPS streaming.
- Use a persistent stream key – (optional) if you use the same setup repetitively.
- Use a backup stream – (optional) will require copy and paste of server URL and Backup Stream key into the Extron encoder.

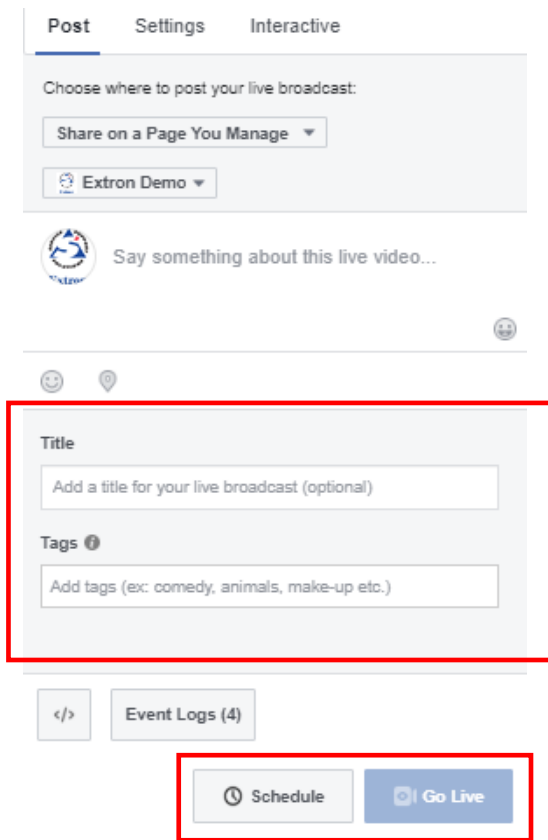
- On the Encoder’s Streaming page, click “Start RTMP stream” button to activate the stream.



- After a few seconds, the button will change to red and indicate the RTMP stream is now live.



- Back on the Facebook Page, a live preview should be shown. Enter information about the stream on the Facebook window to the right.



WORLDWIDE HEADQUARTERS

1025 E. Ball Road · Anaheim, California 92905

800.623.9876 · 714.491.1500 · FAX 714.481.1517 · www.extron.com

Anaheim · Raleigh · Silicon Valley · Dallas · New York · Washington, DC · Toronto · Mexico City · Paris · London
 Amersfoort · Frankfurt · Stockholm · Moscow · Dubai · Johannesburg · Tel Aviv · Sydney · Melbourne · New Delhi
 Bangalore · Singapore · Seoul · Shanghai · Beijing · Tokyo

11. Enter Video Title information and Video Tags information.

12. To go Live, there are 2 options, **Go Live**, and **Schedule**.
 - a. To start immediately, select [**Go Live**].
 - b. To Schedule an Event, select [**Schedule**], enter date, time, and thumbnail.



13. Stopping the Stream:

- a. If scheduled with a duration, the Schedule live stream from Facebook will automatically stop at the appropriate time.

- b. If scheduled open ended, on the Facebook page, press



Note: Once a streaming event is stopped in Facebook, it cannot be restarted unless the “use a persistent stream key” checkbox is selected.
Facebook limits live streaming to a period of 8 hours

- c. After Facebook is stopped, then stop the Encoder.



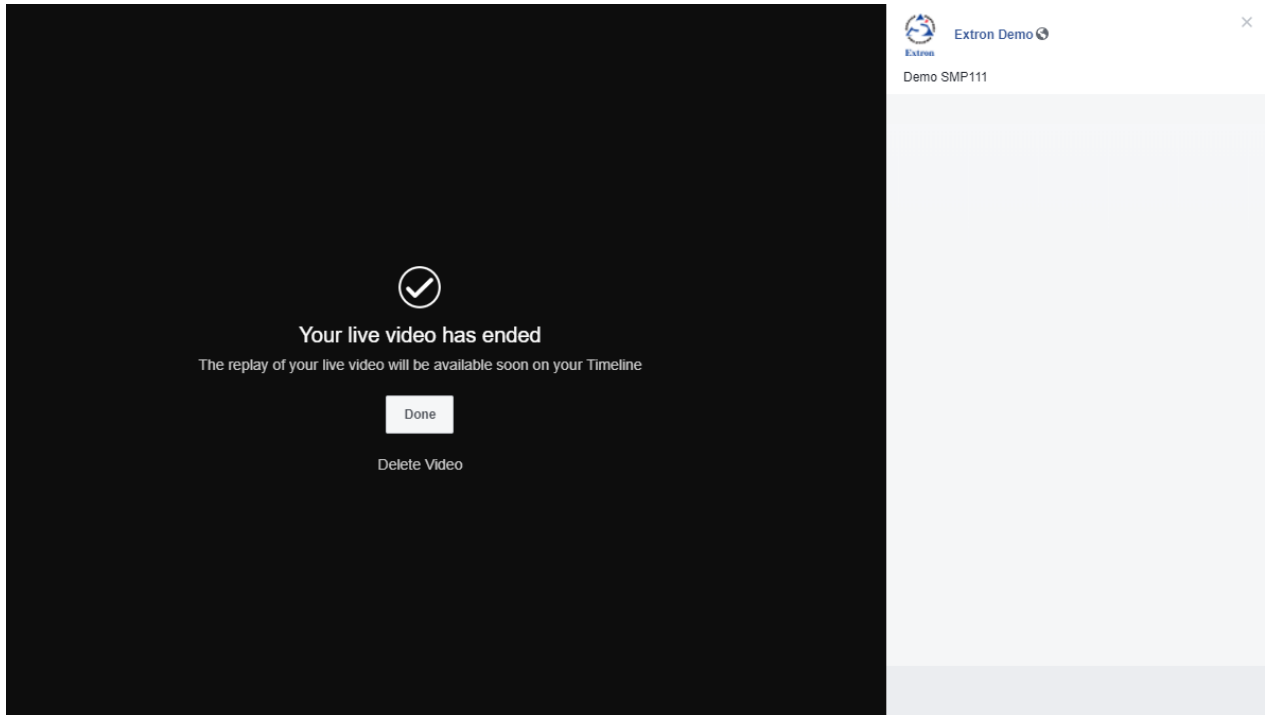
If you stop the Encoder before the Facebook Stream, the public will see an error.

WORLDWIDE HEADQUARTERS

1025 E. Ball Road · Anaheim, California 92905

800.623.9876 · 714.491.1500 · FAX 714.481.1517 · www.extron.com

Anaheim · Raleigh · Silicon Valley · Dallas · New York · Washington, DC · Toronto · Mexico City · Paris · London
Amersfoort · Frankfurt · Stockholm · Moscow · Dubai · Johannesburg · Tel Aviv · Sydney · Melbourne · New Delhi
Bangalore · Singapore · Seoul · Shanghai · Beijing · Tokyo



example: Schedule has Ended 1

14. Troubleshooting:

- Ensure the Encoder is configured for RTMP Streaming format.
- Ensure that the Encoder Stream is started, and that the firewall is open to port 1935.
- Verify Server URL and Stream Name are entered correctly.
- Note: The Stream Name / Key changes with every "Go Live" unless "Use Persistent Stream Key" is checked.

WORLDWIDE HEADQUARTERS

1025 E. Ball Road • Anaheim, California 92905

800.623.9876 • 714.491.1500 • FAX 714.481.1517 • www.extron.com

Anaheim • Raleigh • Silicon Valley • Dallas • New York • Washington, DC • Toronto • Mexico City • Paris • London
Amersfoort • Frankfurt • Stockholm • Moscow • Dubai • Johannesburg • Tel Aviv • Sydney • Melbourne • New Delhi
Bangalore • Singapore • Seoul • Shanghai • Beijing • Tokyo

Recommended Encoder Settings:

Video

- Resolution: 1280 x 720 (720P)
- Frame Rate: Max 30fps
- GOP : I frame every 2 seconds or less***
- Bitrate: Up to 4Mbps (4000 kbps)
- Rate Control: CBR
- H.264 Profile: High
- Profile Level: 4.0 or 4.1

Audio

- Bitrate: 96 or 128kbps
- Sample Rate: 48 kHz or 44.1 kHz (recommend 48 kHz)

Note: The SME 211 has Encoder Presets, including one for Facebook Live. Extron does not currently support RTMPS backup streams for Facebook Live on the SME 211.

WORLDWIDE HEADQUARTERS

1025 E. Ball Road • Anaheim, California 92905

800.623.9876 • 714.491.1500 • FAX 714.481.1517 • www.extron.com

Anaheim • Raleigh • Silicon Valley • Dallas • New York • Washington, DC • Toronto • Mexico City • Paris • London
Amersfoort • Frankfurt • Stockholm • Moscow • Dubai • Johannesburg • Tel Aviv • Sydney • Melbourne • New Delhi
Bangalore • Singapore • Seoul • Shanghai • Beijing • Tokyo

GOP

SMP series products use a GOP setting to set how often a full I frame is sent.

Formula: $\text{GOP}/\text{FrameRate} = \text{Interval}$

Frame rate = 30, and GOP = 30 then $30/30 = 1$ second, or an I frame every 1 second.

Frame rate = 30, and GOP = 60 then $60/30 = 2$ seconds, or an I frame every 2 seconds.

Frame rate = 15, and GOP = 60 then $60/15 = 4$ seconds, or an I frame every 4 seconds.

For the SME series, an additional setting is available for IDR frames (Instantaneous Decoder Refresh). This setting along with GOP determines how often an Interstitial frame is sent. IDR Frames are helpful for editing and seek playback.

Formula: $(\text{GOP}/\text{FrameRate}) * \text{IDR} = \text{Interval}$

Frame Rate =30, GOP =30, and IDR ratio =2:

I frames alternate with IDR frames, with an IDR frame being sent every 2 seconds, in the order IDR, I, IDR, I.

Frame Rate =30, GOP = 60, and IDR ratio = 1:

Every I frame is also an IDR frame and they are sent every 2 seconds, in the order IDR, IDR, IDR, IDR.

Frame Rate =30, GOP = 60, and IDR ratio =2:

I frames alternate with IDR frames, with an IDR frame being sent every 4 seconds, in the order IDR, I, IDR, I

Frame Rate = 30, GOP = 20, and IDR ratio = 3:

Every third I frame is an IDR frame with an IDR frame being sent every 2 seconds, in the order IDR, I, I, IDR, I, I.