

June 25, 2025

Extron Media Processors and Encoders Streaming to third parties using RTMP



The following notes provide guidance on setting up Extron Media Processors and Encoders for publishing live streams to third party services such as Microsoft Teams Town Hall and Live Events via RTMP and RTMPS. For more information, please consult 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	60-1634-01 / 60-1634-11
SMP 352 3G-SDI	60-1634-12
SMP 401	60-1825-01
SMP 401 12G-SDI	60-1825-02

SPECIAL NOTES

Streaming to third-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

The Encoders support RTMP push streaming for publishing live video to third party services like Zoom, MSTeams, YouTube, Facebook Live, Wowza Cloud, Twitch, and others, as well as support for RTMPS for secure live video streaming.

Note: The examples in this document show the interface of the **SMP 401, SMP 300 Series, SMP 111** and **SME 211**, which may look different, but the same settings apply. Specific instructions apply only to the **SMP 401**.

Configuration

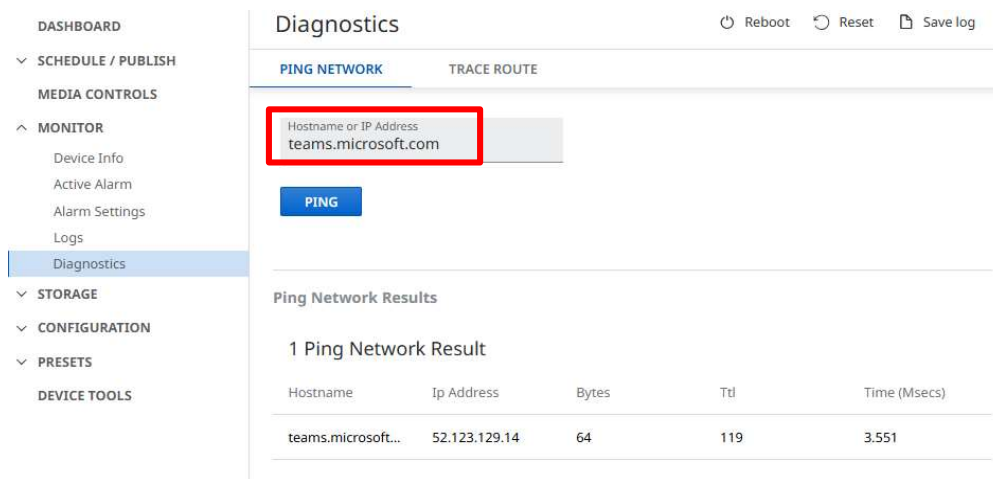
To configure the Encoder for RTMP Push streaming to a live streaming provider:

1. Ensure your Encoder 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 [teams.microsoft.com].
 - i. If successful, a green checkmark is shown.
 - ii. If results fail, verify network and DNS settings.



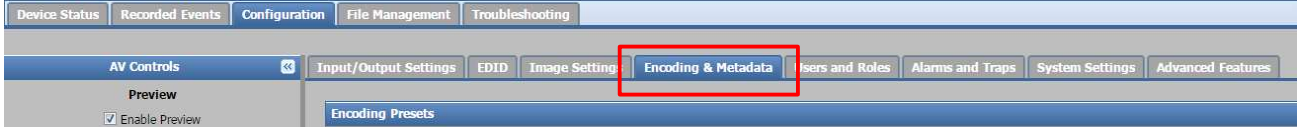
For SMP 401

- a. Open the web browser of the SMP 401, **Monitor, Diagnostics**.
- b. Ping Network, Hostname or IP Address such as [teams.microsoft.com].
 - i. If successful, results shown.

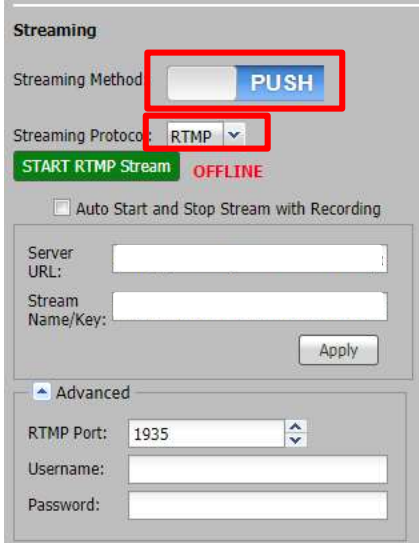


2. Open a web browser of the Encoder, **Configuration, Encoding & Metadata, Encoding Presets**:

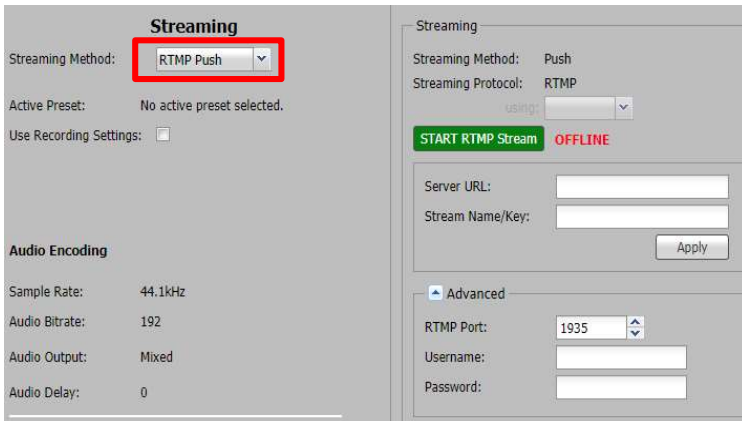
Extron Electronics



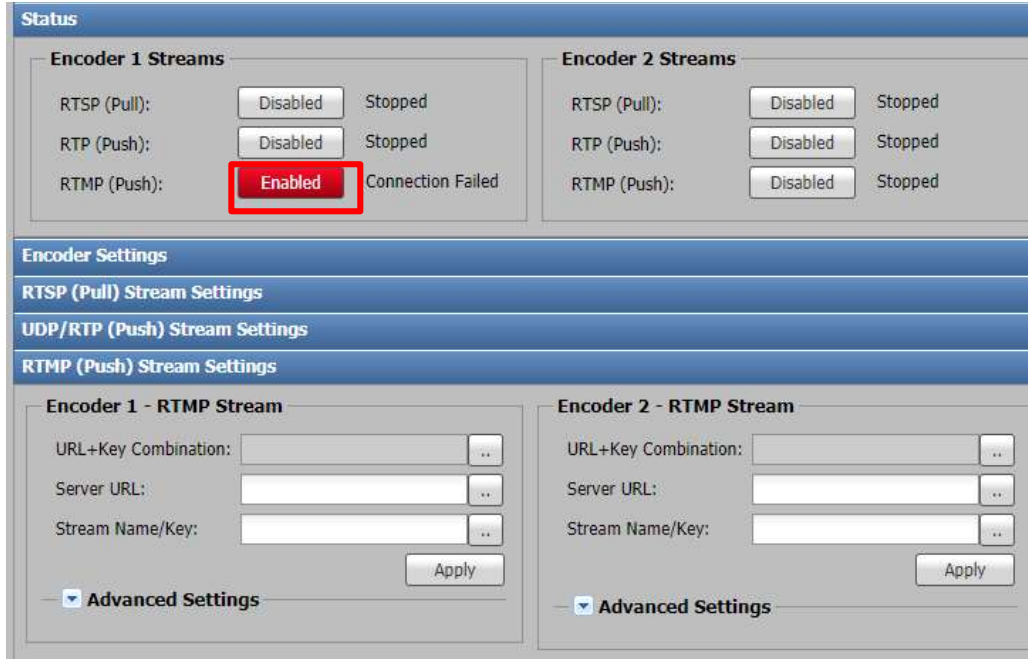
3. Confirm the Encoder is in **Stop Mode**. If needed, press stop on the front panel.
4. Select **PUSH** and **RTMP** from the streaming method and protocol options.



SMP 352 example



SMP 111 example

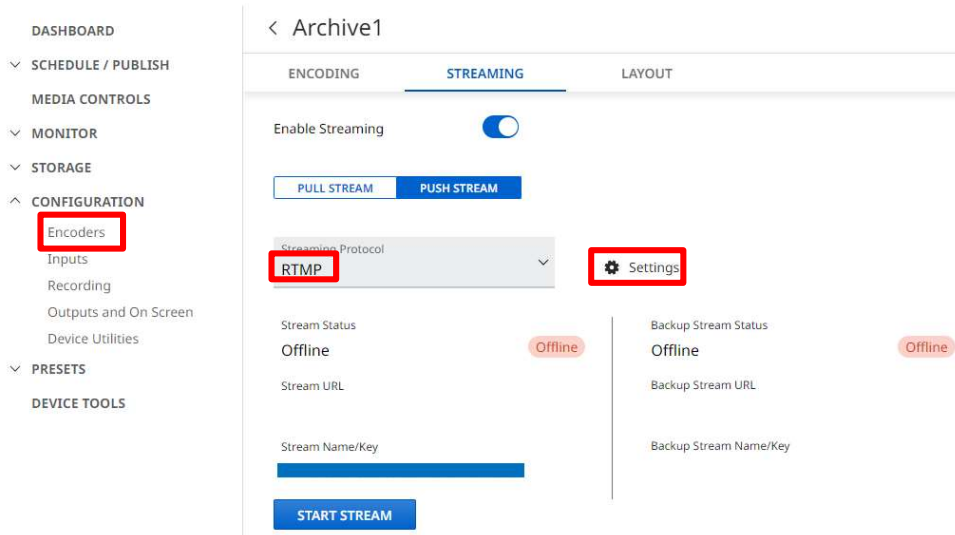


SME211 example

For **SMP 401**

Open the web browser of the SMP, **Configuration, Encoders:**

- Select any of the 4 available encoders or 2 virtual inputs and open **Streaming tab**.
- Select **PUSH STREAM** and select **RTMP** for the Streaming Protocol.
- Open **settings** to input streaming information obtained in the next steps.



RTMP Settings

Enable Auto Start/Stop

Enabled Auto Reconnect

RTMP Port

Username

Password

Full Ingest URL

Server URL

Stream Name/Key

Backup URL

Backup Stream Name/Key

5. The **Server URL**, **Stream Name/Key** and optionally the **Username**, and **Password** information is needed.
6. Follow the link and steps in the next section “**Streaming to Microsoft Teams**” to obtain the Server URL and Stream Name/Key fields for your Microsoft Teams Town Halls and Live Events.

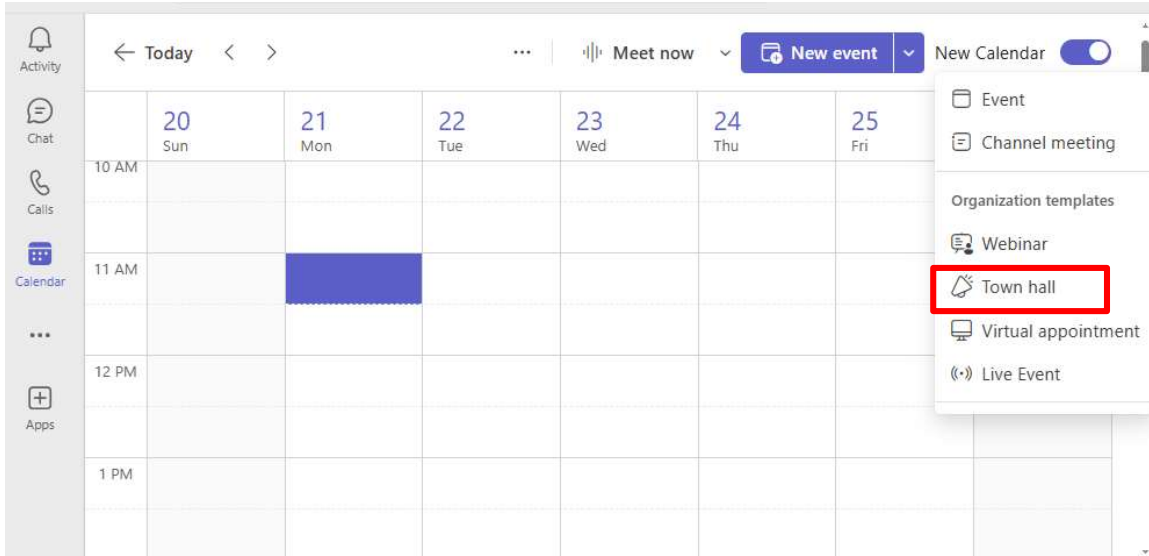
Note: For configuring SMP or SME **encoder settings**, reference the “**MSTeams Recommended Settings**” section at the end of this guide.

Streaming to Microsoft Teams

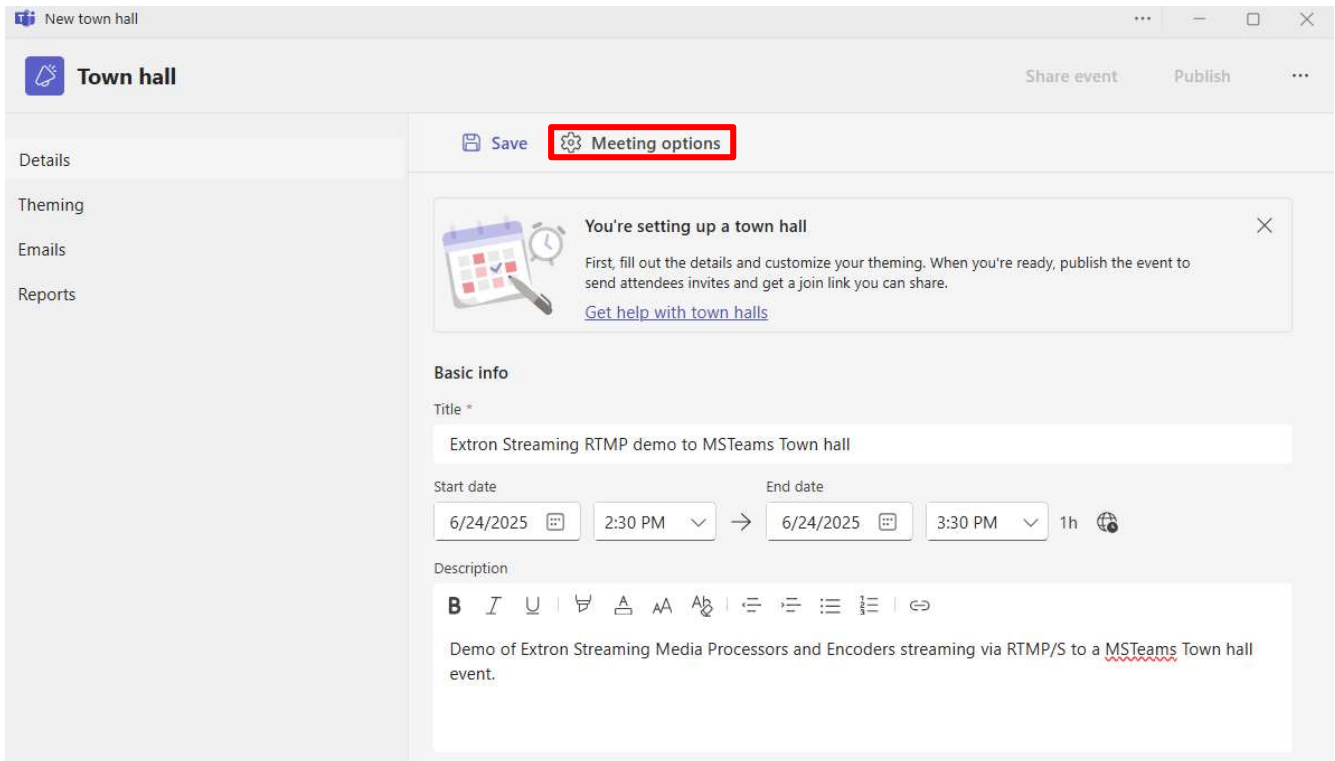
The following steps will provide an example of creating a Microsoft Teams Town Hall, obtaining a stream Key and a Server URL for setting up your Extron SMP or SME for RTMP streaming into Microsoft Teams Town Halls. Other types of Live Events may have slightly different steps. Please refer to the following link for more information.

<https://learn.microsoft.com/en-us/microsoftteams/teams-encoder-configuration>

1. Within the MSTeams calendar click on the **New event** drop down menu and select **Town hall**.



2. Enter Town hall information details for Title, Date and Time, Description.
3. Select Meeting options



4. Select **Meeting options** and under **Production tools** enable **RTMP – In** and select Apply.

Meeting options ×

- Meeting access
- Production tools**
- Participation
- Recording & transcription
- Copilot and other AI
- Accessibility

Production tools

Who has control of production tools ⓘ
 To give people in the meeting control over what is shown on screen for attendees, add them as co-organizers or presenters.

Organizer, co-organizers, and presenters ▼

Manage what attendees see ⓘ
 They'll only see content shared and people you bring on screen. Make someone a presenter to manage this meeting.

RTMP - In
 Send a live or previously recorded media stream into your meeting using Real-Time Messaging Protocol (RTMP). Attendees will see the media after you start the meeting and choose the RTMP stream.

Secure connection SSL

Enable Green room
 Lets organizers and presenters check their audio, video, and content sharing before attendees are admitted. To use this feature, make someone a presenter and turn it on before the meeting starts.

5. Once returned to Details, select **Save**

Extron Streaming RTMP demo to MStTeams Town hall Draft

Save Meeting options

Details

Basic info

Title *

Extron Streaming RTMP demo to MStTeams Town hall

Start date: 6/24/2025 2:30 PM → End date: 6/24/2025 3:30 PM 1h

Description

Demo of Extron Streaming Media Processors and Encoders streaming via RTMP/S to a MStTeams Town hall event.

6. Go back to **Meeting options** and then **Production tools**. Now the RTMP – In is enabled.
 - a. Copy the **Stream Key** and **Stream URL** one at a time and paste them into the SMP or SME encoder data fields. Press **Save** to save the stream URL and Key.

Meeting options ✕

Meeting access

Production tools

Participation

Recording & transcription

Copilot and other AI

Accessibility

Organizer, co-organizers, and presenters ▼

Manage what attendees see ⓘ

They'll only see content shared and people you bring on screen. Make someone a presenter to manage this meeting.

RTMP - In

Send a live or previously recorded media stream into your meeting using Real-Time Messaging Protocol (RTMP). Attendees will see the media after you start the meeting and choose the RTMP stream.

ⓘ To get a link and finish setup, select Save. Save again to make changes.

Server Ingest URL

↻ Copy link

Stream key or name

↻ Copy key

Secure connection SSL

Generate new key

Enable Green room

Lets organizers and presenters check their audio, video, and content sharing before attendees are admitted. To use this feature, make someone a presenter and turn it on before the meeting starts.

Note:

- Specific Stream Keys can be created for different Events and a Backup stream URL can also be used if required.
- The SME 211 does not currently support RTMPS backup streams.

For the **SMP 111** and **SMP 300 Series**

Streaming Protocol: **RTMP** ▼

START RTMP Stream **OFFLINE**

Auto Start and Stop Stream with Recording

Server URL:

Stream Name/Key:

Apply

For **SMP 401**

☰ SMP 401 | SMP-401-2A-52-6C

< Archive1

RTMP Settings

Enable Auto Start/Stop

Enabled Auto Reconnect ⓘ

RTMP Port Range 1024-65535

Full Ingest URL

Server URL
rtmps://msit.rtmpingest.mcr.teams.n

Stream Name/Key

Backup URL

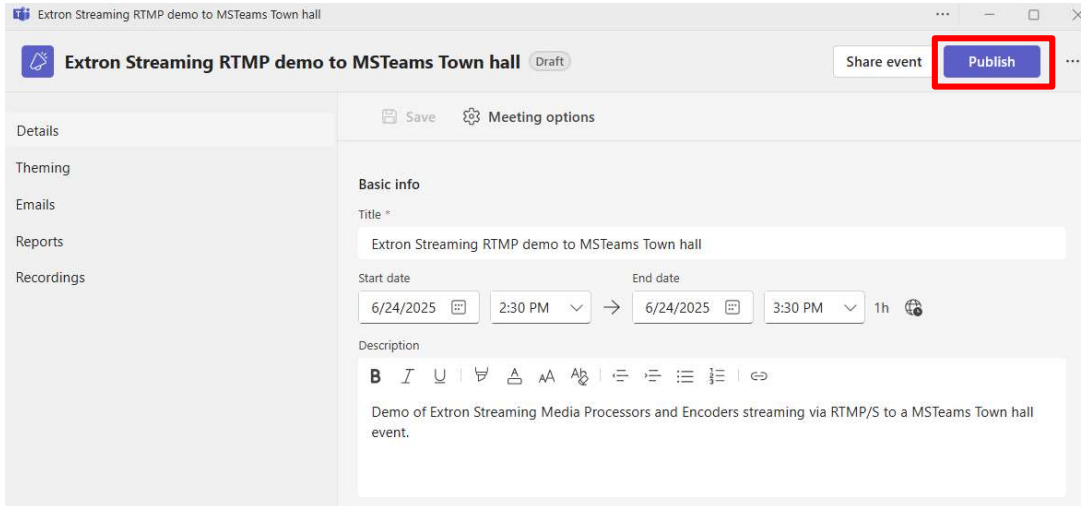
Backup Stream Name/Key

Username

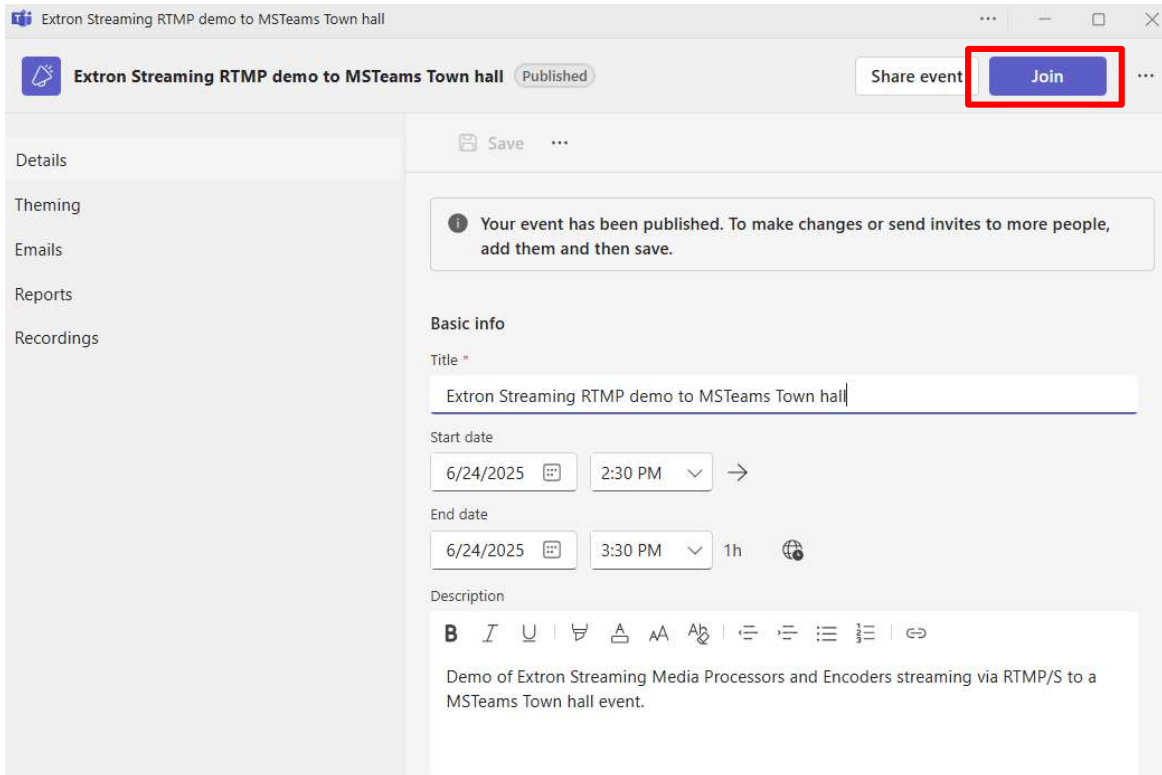
Password

SAVE **CANCEL**

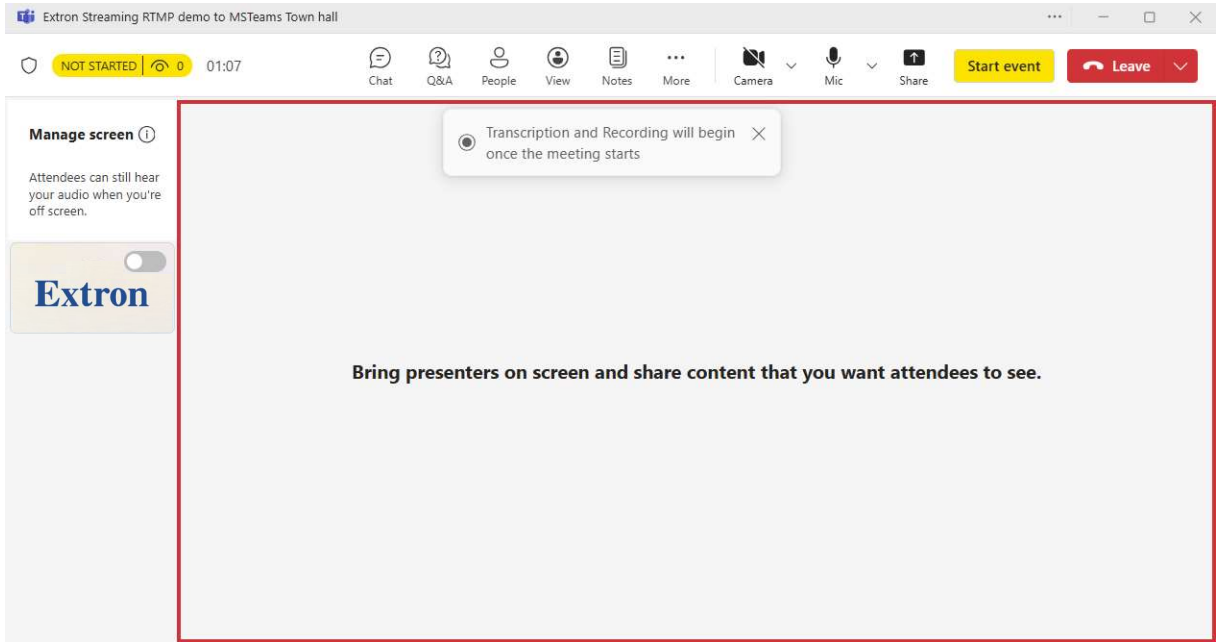
7. Back in the **MSTeams Town Hall** configuration window select **Publish**.



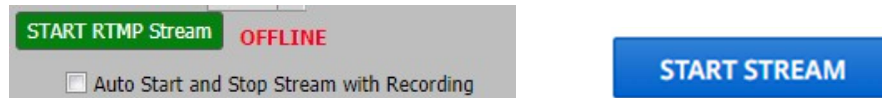
8. From the MSTeams calendar open the event and select **Join**.



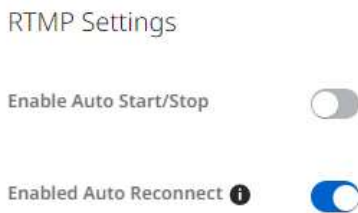
9. Once in the Town Hall you can see the presenter/s



10. On the **SMP** or **SME** Encoder, click “**Start RTMP Stream**” button to activate the stream. On the SMP 401 click “**Start Stream**”. You can also select Auto Start which will start the stream automatically when recording starts.



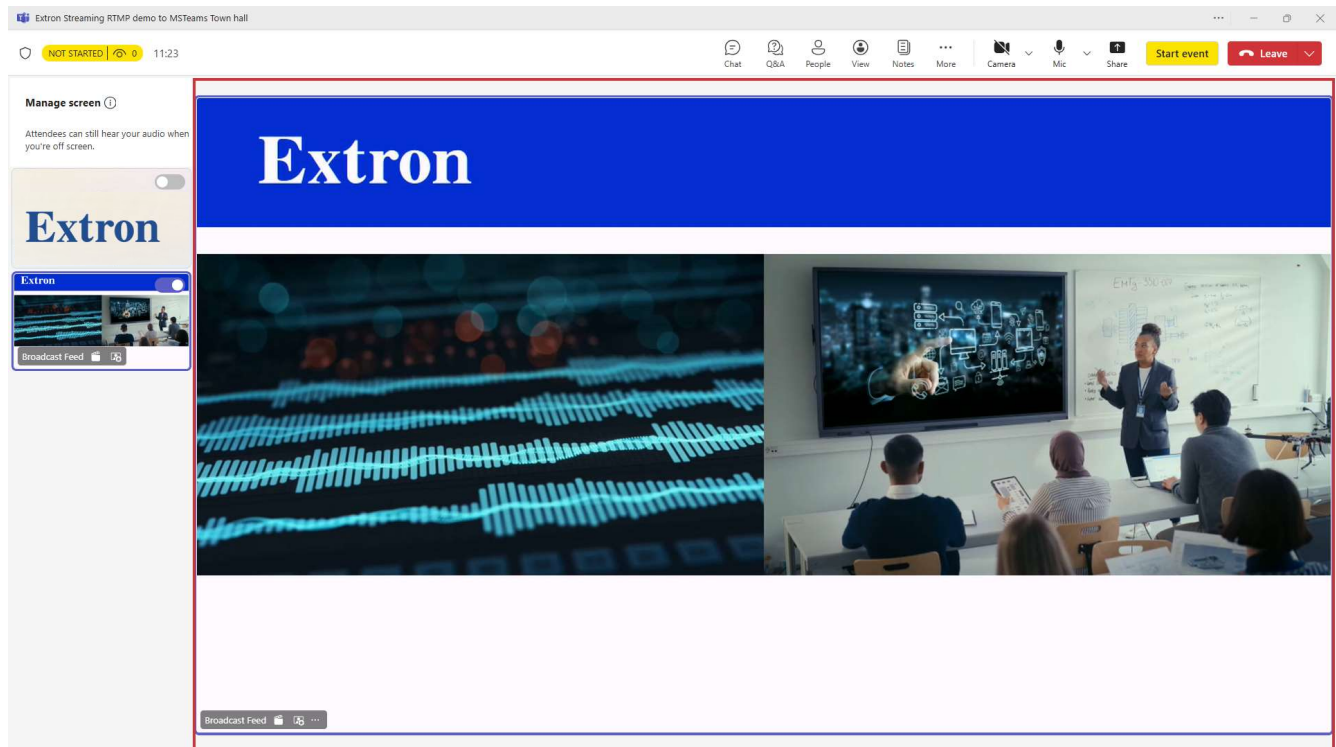
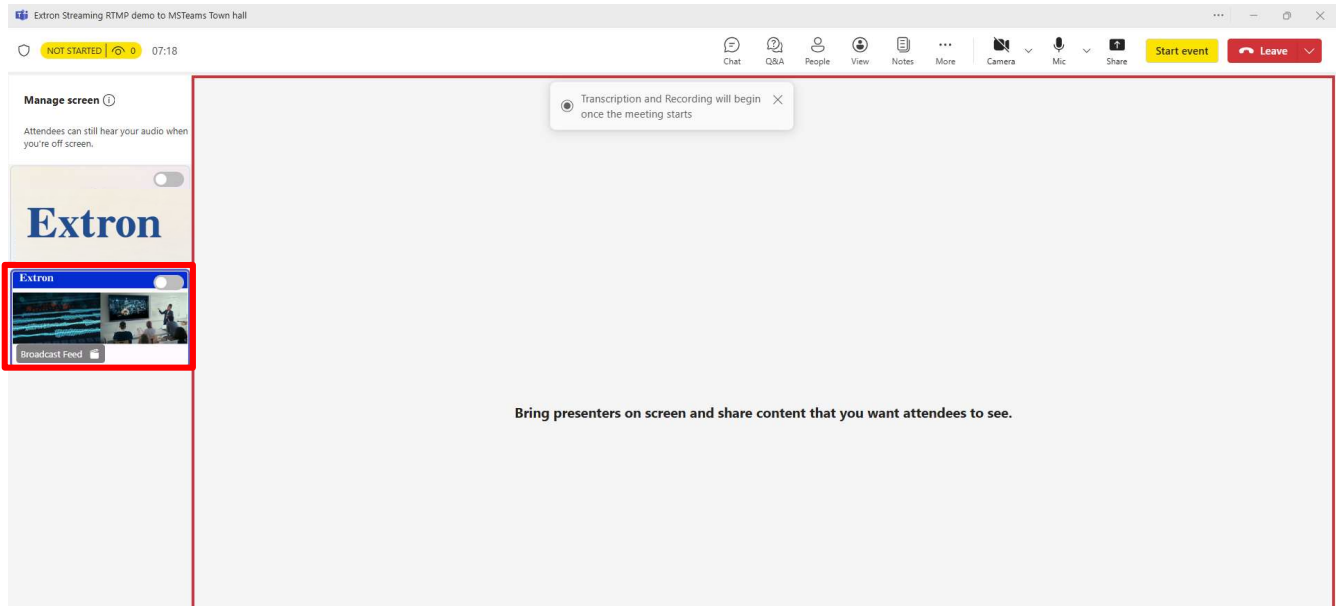
For the **SMP 401**
Use slider “Enable Auto Start/Stop”.



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



11. The RMP stream from the SMP or SME is now available as a source in the MStTeams Town hall event and can be selected to bring as a participant on screen.



MSTeams Recommended Settings

<https://learn.microsoft.com/en-us/microsoftteams/teams-encoder-configuration>

Audio Bitrate: 192 kbps
Audio Sample Rate: 44.1 kHz or 48 kHz (recommended)
Resolution: 720p
Frame Rate: 30 fps
Bit Rate: Up to 5 Mbps
FPS: 30
GOP: Max 60 (ensure IDR interval \leq 2 seconds)
Rate Control: CBR
H.264 Profile: Main/High
Profile Level: 4.1

GOP Information (Group of Pictures)

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.

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.