Technical Bulletin

Programming Steps • Installation Notes • Integration Tips

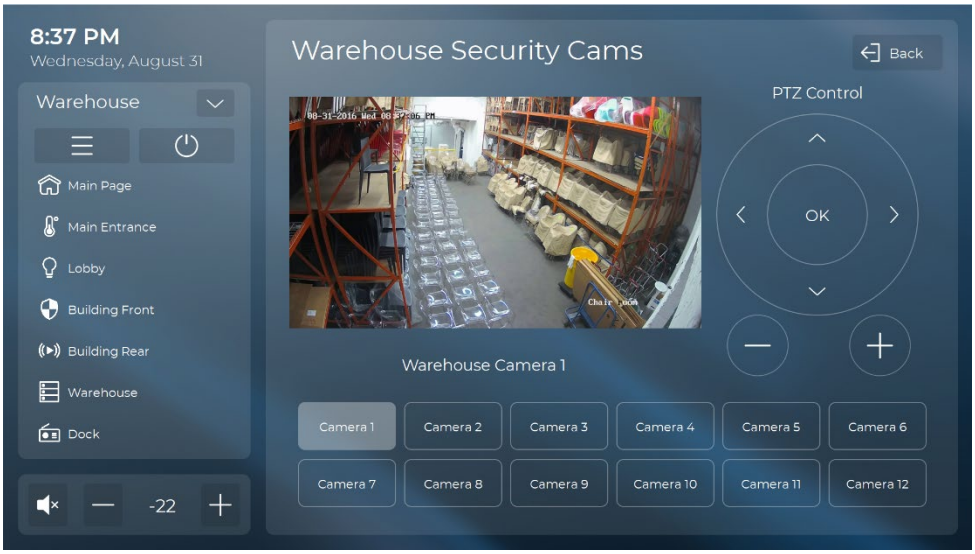
RTSP Streaming Video from IP Cameras to RTI Control Devices

Contents

A. Overview

This document is intended to explain in detail the configuration steps to integrate IP camera streams using Real Time Streaming Protocol (RSTP) with Integration Designer.

Commands for “RTSP Video” and “RTSP Video and Audio” are available to create the ideal video stream window for your client.



B. Supported RTI Control Devices

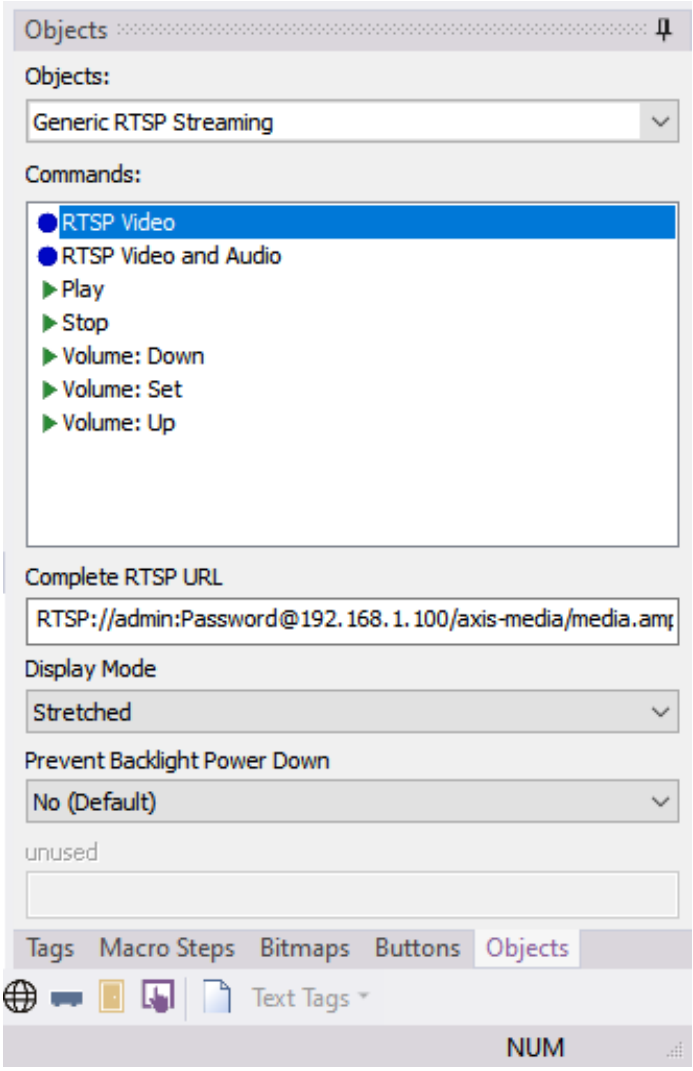
	T4x	KX4	CX7 / KX7s	CX10 / KX10s	KA8	KA11	RTiPanel Android	RTiPanel iOS
Profiles:								
H.264 B (Baseline)	●	●	●	●	●	●	●	●
H.264 (Main)				●	●	●	●	●
H.264 High				●	●	●	●	●
Delay: Real / Controller	1s	1s	1s		3s	3s	1s	3s
RTSP Stream / Frame	1	1	1	1	6	6	6	6
Resolutions:								
QVGA : 320 x 240	●	●	●	●	●	●	●	●
VGA : 640 x 480				●	●	●	●	●
SVGA : 800 x 600				●	●	●	●	●
XGA : 1024 x 768				●	●	●	●	●
720p : 1280 x 720				●	●	●	●	●
SXGA : 1280 x 1024					●	●	●	●
UXGA : 1600 x 1200					●	●	●	●
1080p : 1920 x 1080					●	●	●	●
QHD Cam : 2304 x 1296							●	●

C. Getting Started

1. Click on the **Objects** tab at the bottom right corner of the Integration Designer 9 “Library Browser or Integration Designer 11 tabbed window area.

2. Select **Generic RTSP Streaming** from the drop-down menu.

3. Enter the camera's "Complete RTSP URL" and adjust settings.
   Complete RTSP URL Format:
   rtsp://[username]:[password]

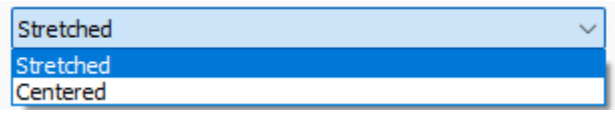


Fields

Complete RTSP URL

The URL of the source RTSP stream. Refer to the manufacturer's device documentation for available streams and their URLs or check the Camera Connection Database.

Display Mode



Indicates whether to center or stretch the incoming video into the dynamic area created on the user interface.

Prevent Backlight Power Down

Indicates whether or not the RTI controller backlight should be prevented from powering down / dimming while video is being displayed.

D. Important Notes

1. The RTSP resolution should not exceed that one from the RTI controller displaying it. However, some manufactures allow for multiple substreams at different resolutions. You may need to adjust each RTSP Complete URL to accommodate for these substreams. Take this into consideration based on the RTI controllers you are using to pull and display the video.

2. When setting up the 3rd party IP Camera user credentials, passwords cannot have any space or special characters such as !%"#'()*+,-./:;<=>?@[\]^_`{|}~ in order for RTI controllers to access them. If a special character is required, we suggest you use one of these $€&

3. You can choose a higher bitrate and a reduced frame rate to get better quality image (less compressed), or you can choose a higher frame rate but lower bitrate to get faster frames but at reduced quality:
   - » The combination of frame size, frame rate and bit rate will control how the video streaming performs. Lowering each will improve performance but could degrade the quality of the image. A decision must be made on what to sacrifice.
   - » Lowering frame rate or frame size will certainly improve performance as there's less for the decoder to do.
   - » Lowering bit rate does reduce quality / compresses the image more.

E. Performance Considerations

If video performance is poor (lagging or missing frames) or if the Video Packets Lost variable is increasing steadily while streaming, consider adjusting the source device settings to stream at a lower resolution, frame rate and/or bit depth.

Many cameras allow for multiple streams with varying configurations, consider using a stream that allows for the reduced parameters.

F. Debugging Connection Issues

VLC media player streams RTSP/H.264 and is a recommended tool for debugging connection issues and for verifying URL formats.

G. RTSP Internal Feedback Variables Available

Connecting
Indicates that the device is attempting to connect to the RTSP source device.

Connected
Indicates that a successful connection has been made to the RTSP source device.

Connection Failed
Indicates that the connection to the RTSP source device has failed.

Authentication Failed
Indicates that the connection to the RTSP source has failed because of an authentication error (invalid username or password).

Video Packets Lost
Indicates the number of Video packets that have been lost during transmission.