

# Video Frame Rates

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## Product Name

Digital Video

## General Information

### **Indoor Surveillance - (~7-8 FPS)**

-General Security Video

### **-Office Environments Outdoor Surveillance - (~15 FPS)**

-Parking Lots

### **-Faster Moving Objects 'High Speed' Applications (~25-30 FPS)**

-Allow very detailed "slow motion" playback

-Use ONLY when absolutely necessary (i.e. where required by industry regulation or law)

Higher frame rate will result in a larger file size

**-Movies are typically shot in 25 - 30 fps**

**-Security video is typically set to no more than 15 fps**

Analog video converted to digital is a maximum of 720x480 (NTSC), D1 resolution

**-Commonly used resolution is 4CIF (704 x 480) 1.3 Megapixel network camera resolution is 1280 x 1024**

### **Industry standards are:**

-Motion JPEG (MJPEG)

-MPEG-4

-H.264

### **Stream consists of multiple frames**

- I-frame (intra frame) / Key Frame – self-contained reference frame encoded as a still image
- P-frame (predictive inter frame) – depends on previously displayed reference frame
- B-frame (bi-predictive inter frame) – makes reference

**TCP and UDP are IP protocols** used to transmit data across a network TCP is a reliable connection based transfer

-Potential delays as TCP ensure data is received UDP is a connectionless transfer and does not guarantee the data is sent

-Error control and data checking is up to the application

-Smallest overhead HTTP is the most common communication method for network cameras and it uses TCP/IP

-Uses Port 80

**RTP (Real Time Protocol)** can be used with H.264 and MPEG-4

-Sequential and time stamping of video data packets allows for more efficient reassembling of the packets

-TCP and UDP are supported

-Can be selected in OnGuard if the camera supports RTSP (Real Time Streaming Protocol) can be used with H.264 and MPEG-4

-Uses TCP only

-Port 554

-Can be selected in OnGuard if the camera supports

**CPU utilization on client machines should be less than 70% for best performance**

-Use task manager to monitor -Starting at 70%, OnGuard will not display all frames being sent from the recorder in order to prevent 100% CPU utilization

## Applies To

Digital Video

## Additional Information

None

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