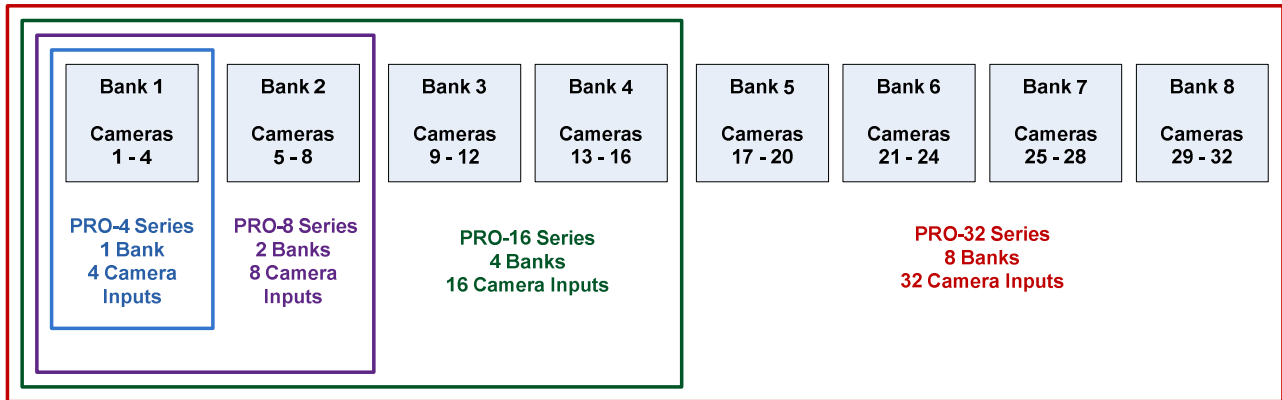




























1 PRO Series Bank Diagram



2 Maximum FPS for each Number of Camera Inputs per Bank

Banks with 1 Enabled Camera			Camera Input 1 	
			Camera Input 2 	N/A
			Camera Input 3 	N/A
			Camera Input 4 	N/A
Resolution	FPS Max	Bitrate Recommended		
352x240	30	1000		
528x320	30	1408		
704x240	30	1408		
704x480	30	2000		
Banks with 2 Enabled Cameras			Camera Input 1 	N/A
			Camera Input 2 	
			Camera Input 3 	N/A
			Camera Input 4 	
Resolution	FPS Max	Bitrate Recommended		
352x240	30	1000		
528x320	30	1000		
704x240	30	1000		
704x480	30	1000		
Banks with 3 Enabled Cameras			Camera Input 1 	
			Camera Input 2 	
			Camera Input 3 	
			Camera Input 4 	N/A
Resolution	FPS Max	Bitrate Recommended		
352x240	30	660		
528x320	30	660		
704x240	30	660		
704x480	20	660		
Banks with 4 Enabled Cameras			Camera Input 1 	
			Camera Input 2 	
			Camera Input 3 	
			Camera Input 4 	
Resolution	FPS Max	Bitrate Recommended		
352x240	30	500		
528x320	30	500		
704x240	30	500		
704x480	15	500		

Note: The maximum bitrate available may vary when different FPS values are selected. The Vigil DVR system automatically adjusts the bitrate to provide an ideal video experience.

3 Skipping Inputs to Optimize Performance

























Example1: PRO-16 DVR with 8 cameras – 2 cameras per bank

If eight cameras were plugged into a PRO-16 Vigil DVR sequentially using inputs 1 through 8 and set to 704 x 480 resolution, the recording speed maximum would be 15 FPS. By using the configuration described below where only the even channels are used, the same eight cameras are able to record up to 30 FPS.

When the camera inputs are plugged in and enabled using only the even numbered inputs, each even numbered camera input can be enabled with the following settings:

Recording Speed: 30 FPS
Resolution: 704 x 480

The recommended bitrate is 1000 per channel for this configuration.





















Bank 1	Camera Input 1		N/A
	Camera Input 2		
	Camera Input 3		N/A
	Camera Input 4		
Bank 2	Camera Input 5		N/A
	Camera Input 6		
	Camera Input 7		N/A
	Camera Input 8		
Bank 3	Camera Input 9		N/A
	Camera Input 10		
	Camera Input 11		N/A
	Camera Input 12		
Bank 4	Camera Input 13		N/A
	Camera Input 14		
	Camera Input 15		N/A
	Camera Input 16		

Example2: PRO-16 DVR with 4 cameras – 1 camera per bank

If four cameras were plugged into a PRO-16 Vigil DVR sequentially using inputs 1 through 4 and set to 704 x 480 resolution, the recording speed maximum would be 15 FPS and the maximum bitrate would be 1000. By using the configuration described below where only the first channel is used for each bank, the same eight camera inputs are able to record up to 30 FPS. When recording one camera per bank, the bitrate can be manually increased to a maximum of 3120 kbps.

When the camera inputs are plugged in and enabled using every fourth input, each of the inputs can be enabled with the following settings:

Recording Speed: 30 FPS
 Resolution: 704 x 480
 Recommended Bitrate: 2000



























Bank 1	Camera Input 1		
	Camera Input 2		N/A
	Camera Input 3		N/A
	Camera Input 4		N/A
Bank 2	Camera Input 5		
	Camera Input 6		N/A
	Camera Input 7		N/A
	Camera Input 8		N/A
Bank 3	Camera Input 9		
	Camera Input 10		N/A
	Camera Input 11		N/A
	Camera Input 12		N/A
Bank 4	Camera Input 13		
	Camera Input 14		N/A
	Camera Input 15		N/A
	Camera Input 16		N/A

Example 3: PRO-16 DVR with 10 cameras: 8 regular cameras and 2 high importance cameras

In this example, two cameras of high importance are plugged into the last two banks in order to record the highest quality image possible. To do this, we keep cameras 1 – 8 on banks 1 and 2 and leave the last two banks available for the high importance cameras.

In this example, before plugging in any cameras, it is decided which two cameras are of the most importance. The two high importance cameras are plugged into inputs 9 and 13. The remaining 8 cameras are plugged into inputs 1 – 8. If inputs 1 – 8 are set to 704 x 480 resolution, the recording speed maximum is 15 FPS. By using only the first channel of the bottom two banks, we are able to maximize the FPS and bitrate for the two most important cameras.

On the bottom two banks where there is only one camera per bank, the bitrate can be manually increased to a maximum of 2000 kbps.

Bank 1	Camera Input 1  	For banks 1 and 2 where 4 camera per bank are used, the settings can be configured as follows:
	Camera Input 2  	
	Camera Input 3  	
	Camera Input 4  	
Bank 2	Camera Input 5  	Recording Speed: 15 FPS Resolution: 704 x 480 Bitrate: 500
	Camera Input 6  	
	Camera Input 7  	
	Camera Input 8  	
Bank 3	Camera Input 9  	For the bottom two banks where 1 camera per bank is used, the settings can be configured as follows:
	Camera Input 10  N/A	
	Camera Input 11  N/A	
	Camera Input 12  N/A	
Bank 4	Camera Input 13  	Recording Speed: 30 FPS Resolution: 704 x 480 Bitrate: 2000
	Camera Input 14  N/A	
	Camera Input 15  N/A	
	Camera Input 16  N/A	

4 A Bit about Bitrates

What is a Bitrate?

In the PRO Series Vigil DVR System, the bitrate of the video stream is the average number of kilobits transferred per second from the video capture board. The bitrates are configurable per camera input.

How does the bitrate affect the Video quality on my PRO Series Vigil DVR system?

Increasing the bitrate of a video stream increases the amount of data being transferred per image resulting with higher quality video. Lower bitrates result in lower video quality but also result in lower file sizes. The Vigil DVR system automatically adjusts the bitrate to provide an ideal video experience. Please refer to the example below, where an unusually low bitrate 704 x 480 image is compared to the default higher bitrate 704 x 480 image.

Note: Increasing the bitrate beyond 2000 kbps per bank can result in dropped frames. In installations where consistent frame rate is important, please configure a maximum of 2000 kbps per bank.

Low Bitrate

High Bitrate (Default)

The red squares in the images below indicate areas where the image detail is visibly affected by the difference in bitrate. See below for enlarged views of the selected areas.



Resolution: 704 x 480 FPS: 30 Bitrate: 500



Resolution: 704 x 480 FPS: 30 Bitrate: 1000

The differences between low bitrate and high bitrate images are most commonly noticed when observing objects with small details for example patterned carpets or tree leaves. This detail can also be noticed when observing fast-moving objects. In low bitrate situations, a moving object can sometimes appear to leave a trail for a moment behind it as it moves through the view.

Low Bitrate Detail

High Bitrate Detail (Default)



5 Contact Information

If you require more information, or if you have any questions or concerns, please contact
3xLogic Technical Support:

Toll Free (North America): 1-877-3XLOGIC (1-877-395-6442)

Email: support@3xlogic.com

Online: www.3xlogic.com