



## A Guide To Better Video

VBrick Video Network Appliances use MPEG to deliver excellent picture and sound quality over digital networks. Some knowledge about the behavior of video compression in general, and MPEG in particular, can lead to better quality video.

**GIGO** Garbage-In-Garbage-Out. High quality source video encodes better than low quality. If there is noise in the video, the MPEG compression process will do its best to encode the noise – using available transmission bandwidth to send unwanted artifacts. Normal composite video works fine, but for even higher quality, use S-Video.

**Lighting** For live video, the subject should be lit well enough to produce reasonable contrast and good color saturation. Most modern camera will compensate for various lighting conditions, up to a point. But generally, the more light on the subject the better.

**Cameras** The video source is key to high quality video, and cameras that deliver good contrast and good color saturation will produce better result. Higher color saturation with compressed video results in a higher “score” from most viewers.

**Motion** MPEG deals with high motion video very well. But there are limits. Normally we think of motion as natural activities seen on the video, like a moving car caught on a security camera, or a person waving their arms in a two-way videoconference. But to MPEG, motion is any difference between two video frames. A poor source video that contains noise, “sparkles”, or other artifacts is seen as “motion” to MPEG. If the encoding rate is too low to encode all of the motion, the output video will become “blocky”. Therefore, the source video should be as “clean” as possible.

**Input Type** VBrick supports both composite and S-Video video. S-Video delivers slightly higher quality than composite because the components that make up full color video are delivered on their own physical conductors.

**Film** Film is projected at 24 frames per second, and video is delivered at 30 frames per second. To make up for the difference when displaying a film over video, certain frames are duplicated. Since there is no difference between these frames they are easily compressed and film over MPEG produces good result.

**Text** Text is high frequency video that does not compress easily. If text is to be inserted at the source, use large fonts.

**Lines** Like text, video containing very fine lines contains high frequency and can cause “aliasing”. Fine lines can be avoided by moving a camera closer to the source and by adjusting contrast.

**Color** While MPEG resolution is lower than analog video, the number of colors MPEG can handle is very high. The human eye sees contrast (retina rods) and color (retina cones) differently, and high color video gives a better overall viewing impression.

**TV Monitor** The quality of the monitor is much less important than the source. The monitor should be the right size for the audience, and should accept conventional composite or S-Video video and audio input. Because the resolution of MPEG is lower than analog, conventional TV's tend to look better than professional monitors (MPEG is a better match to the resolutions found in consumer TV's). From typical viewing distances MPEG looks quite good when projected on large screens, but large screens also make any artifacts larger.

**Sound** The overall perception of video is weighted by the quality of the sound. Use good quality audio equipment, and go with stereo when possible. Echo control is key to good quality two-way conferences.