



Tech Note

VICON TECHNICAL SERVICES GROUP

Subject: Video Quality - Digital
Recording Duration
Product: ViconNet Series
Number: 1400-0001-97-00
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The purpose of this Tech Note is to explain how baseband analog video input quality and extraneous noise can affect the recording duration of a digital recorder. There are various factors that will contribute to a reduction in the maximum recording duration obtained from any DVR. This Tech Note does not concern itself with recording quality, as that would be covered in the specifications related to the DVR itself.

Video Levels:

1. Video – sync level measurements:
 - a. **At the camera:** Sync & Color burst levels of 286 mV (40 IRE) are typical.
 - b. **At the DVR:** Sync & Color burst levels ranging from 144 mV (20 IRE) to 360 mV (50 IRE) are necessary for efficient recording.
These measurements are typically made with a video meter or oscilloscope.
2. Does the camera have an Auto Iris lens?
 - a. Adjust the Auto Iris level for maximum video out while having good video in both light and dark conditions.
 - b. Auto iris lenses can trigger recording, even if the iris movement is caused by something in a "masked" area. For example configuring the DVR to ignore an area by removing it from the Region Of Interest (ROI) could eliminate a car headlight that triggers recording. But, an auto iris lens or AGC circuit in a camera may attempt to compensate for this change, triggering recording even if the light was outside of the "masked" detection zone because the auto-iris & AGC will affect the entire scene.
3. If the camera is using a manual iris lens, adjust the iris to achieve best all around day/night picture.
For more information regarding cable requirements and camera adjustments please go to:
ftp://ftp.vicon-cctv.com/Bulletins/Tech_Tips/
4. If under those conditions the video from the camera is still noisy (especially at night or in low light conditions):
 - a. Turn AGC OFF (AGC will add noise ("snow") to a scene and the recording trigger will interpret this as motion)
 - b. Improve illumination of scene.
 - c. Replace with higher sensitivity camera.
5. Be aware that other devices in the video path may have their own AGC circuitry (fiber encoders, video amps, etc.).

Cabling and Connections

1. Other causes of noise are cabling connections (beware of Twist-On BNCs!) and grounding. Many installers favor twist-on BNCs because they are quick and easy to install but often result in a poor connection that can degrade over time. Crimp-on BNC's are preferred because of their stability and longevity. Cables too large for the connector, or the shield not being folded back correctly, account for a great number of problems with noisy pictures and create ground loops. These may look fine on the monitor but close inspection can reveal a picture that varies sporadically in brightness as the ground level changes; this can trigger recording. VICON RECOMMENDS THE USE OF PROPERLY INSTALLED CRIMP-ON BNC's
2. Coaxial cable should be specifically designed for CCTV use. Cables designed for CATV or MATV will result in poor picture quality due to the non-copper components of the cable.

Installation and Operation

1. Any movement of PTZ cameras will trigger motion recording because the DVR cannot differentiate between a subject moving within a camera scene or the camera itself panning across a scene.
2. Camera vibration caused either by wind in outdoor settings or by general vibration at the camera, as in some industrial applications, must be eliminated or minimized.
3. Most DVR's have the ability to mask out areas where motion detection is undesirable. Things to consider:
 - a. Television screens, Security monitors, and computer monitors.
 - b. Clouds, trees, flags and other "wind blown" objects.
 - c. Roadways not relevant to the security of the facility (consider day and night conditions as per above Auto Iris and Automatic Gain Control warnings).
 - d. Distortion or tearing in video resulting from ground loops, voltage or and other external interference should be rectified.

The effect of these conditions can be reduced or eliminated by adjusting the Region of Interest (ROI) in the setup menu of the ViconNet software.

For specific installation & operation manuals please go to: <ftp://ftp.vicon-cctv.com/Manuals/>