

TechTip V1023 - Optimizing the Lenel OnGuard NVR System for IQinVision Cameras

IQinVision has been informed that the latest release of Lenel On Guard has challenges when dealing with images greater than 2MP. Please find their recommendations however, also note that the recommended image settings will have a negative impact on image quality.

Source: Factory Certified Product (FCP) Interface Document

OnGuard Version/Build, Firmware -

- OnGuard 6.3.249, LNVR 6.3.249
- LNVR 6.3.249 Add-on for IQinVision Camera Support 1.0.1

Source:

Name: See appendix below

Model: See appendix below

Version/Firmware: See appendix below

Proprietary Files Required (for communication with OnGuard system):

IQinVision.xml, ReadMe.txt (both part of the Add-on)

Optional/Recommended Products IQfinder – Windows utility used to discover cameras on a network

Web location for download of Proprietary files: <http://www.iqeye.com/support/faqs-tech-tips.html>

Brief Description of Product: Megapixel IP Cameras

Brief Description of Integration: Support for IQinVision IP cameras models

Business Description of Product: Customers can choose from a variety of IQinVision megapixel IP cameras to meet their specific requirements.

Limitations;

1.1 When using a resolution configuration of 1600X1200 or greater, it is recommended that you configure the settings as follows:

- Compression should be 35 or greater.
The valid compression range is from 1 - 100 with 1 representing the highest quality. High compression values will result in loss of image detail.
- Brightness should be less than 50.
Lower brightness values may cause darker portions of the image to be difficult to see.
- Sharpness should be less than 100.
Extremely low sharpness values may decrease image crispness and cause a loss of image details.
- Saturation should be less than 75.
Low saturation values may cause the colors to display incorrectly.

- Crop the image to a resolution equal to or lower than 1600x1200 through the camera's interface.

Note: *If you use values different than those recommended here, this may result in problems with the video display in OnGuard such as partial display of the image or the image freezing.*

1.2 Exporting a recorded video segment to the ASF file format will not work with the 2560X1920 resolution configuration. Exporting to the LNR file format will work as expected.

1.3 Camera Lens Iris Adjustment

1.3.1 Frame rate - Adjusting the camera lens iris to not fully open may lead to a limited frame rate from the camera.

1.3.2 Day/Night mode - Adjusting the camera lens iris incorrectly may lead to the following:

- Camera stays in night mode and does not switch back to day mode.
- Camera stays in day mode and does not go into night mode.

Note: *For information on setting the camera lens iris, refer to the camera manufacturer guidelines.*

1.4 Miscellaneous:

1.4.1 Changing the camera password is not supported.

1.4.2 Gamma values cannot be configured from OnGuard. For information on setting the gamma values, refer to the camera web page.

1.4.3 IQeye302 and IQeye602 cameras - the saturation value cannot be configured from OnGuard. For information on setting the saturation value, refer to the camera web page.

1.4.4 IQeye602 camera - When selecting a resolution of 400x300, the actual displayed resolution will be 400x296.

Set-Up Process:

1. This process assumes that standard installations of the respective products have been established according to manufacturer supported and documented processes.
2. Make sure the camera's firmware version is v2.7/3 or higher. See table above
3. Install and run the IQFinder utility located on the Installation CD shipped with the camera or downloaded from: <http://www.iqeye.com/software.html>. This utility will locate all the IQinVision cameras connected to the network and allow you to assign IP addresses and access the camera's browser-based user interface.
4. Assign the IP address to the camera using the IQFinder utility. NOTE: IQinVision cameras are shipped with a default IP Address of 0.0.0.0, with the exception of the 4 Series cameras that have a default IP Address of 169.254.x.x
5. To configure the cameras settings type in the IP address in your browser or a. Click on IQFinder's Web Page button to launch the browser UI
 - b. Login: user=root, password=system
 - c. Click on the Settings tab and select Image tab for adjusting image quality, frame rate, contrast, resolution, etc.
 - d. Click on Window tab to configure: cropping, exposure, privacy masking, and motion detection.
 - e. Click on the Security tab for firmware version information.

6. If the camera's firmware version is less than what is detailed in the table above then upgrade to the latest firmware found at: <http://www.iqeye.com/software.html>.

- a. Connect to the camera by its IP address or by running the IQFinder utility as stated above.
- b. On the Security tab browse to the firmware file location and click the Upload button.
- c. Wait for camera to update and reboot itself.

7. Put the IQinVision.xml file on the LNVR and OnGuard systems under caps/cameras sub folder

8. Update Capabilities on system administration

9. Use the Restore Defaults button in the camera's UI to update the factory default settings for each camera.

10. Add the camera

Business Benefits of the Interface:

Customers may use this interface to view and record video from IQinVision cameras. The API is common across all IQinVision cameras so as new models are introduced it will be very easy to update the XML definitions to include support for them while remaining backward compatible.

Functional Features of the Interface:

Customers should expect the interface to allow them to configure OnGuard to capture video from IQinVision cameras. The interface provides the following configurable options:

- a. JPEG Quality (settings from low to high: medium, high, fine, superfine) – the higher the setting (i.e. superfine) the better the image quality and consequently the larger the file size and bandwidth requirement. Conversely a lower setting (i.e. medium) yields a lesser image quality, smaller file size and smaller bandwidth requirement.
- b. Contrast/Gamma (numeric value between .1 and 2.55) – adjusts the gamma levels of the image. A low number makes the image lighter with less contrast than a higher number.
- c. Sharpness (settings: xlow, low, medium, high) - Increasing the sharpness value will enhance the edges and small features the image. If the image's edges appear too smooth or blurred, increase sharpness. If the image seems rippled or noisy, decrease sharpness. Increasing sharpness works against increasing compression and thus increases file sizes.

d. Frame Rate & Resolution (numeric value) - enter the desired frame rate (frames per second) that the camera will stream. Available frame rate and resolution per camera model are indicated below.

PRO LINE

IQinVision Model	Frame Rate	Supported Resolutions
IQA11S IQ751, IQ851 IQ711	1-30	1280 x 1024 640 x 512 320 x 256
IQA12S, IQ752, IQ702 IQ852, IQ802	1-20	1600 x 1200 800 x 600 400 x 300
IQA13S, IQ703, IQ753 IQ803, IQ853	1-12	2048 x 1536 1024 x 768 512 x 384
IQA15S, IQ705, IQ755 IQ805, IQ855	1-8	2560 x 1920 1280 x 960 640 x 480 320 x 240
IQA10S	1-30	640 x 480 & 320 x 240

BASIC LINE

IQinVision Model	Frame Rate	Supported Resolutions
IQ041S, IQD41S IQ541S IQ511 IQ042S	1-15	1280 x 1024
IQD42S, IQ542S	1-15	1600 x 1200
IQ040S, IQD40S, IQ540S	1-15	720 x 480
IQ510	1-60	752 x 480
Discontinued Models; IQ302, IQ501, IQ602, IQ701		

e. A/C power frequency (settings: 60 Hz or 50 Hz) - If your camera is trained on a scene lit by artificial lighting, then you may set this value to reduce banding in your images. The United States uses A/C power with a 60 Hertz (Hz) frequency. 50Hz is used in many other countries. A few countries use both frequencies.

f. Exposure/Gain style - the auto-gain algorithm sets the brightness level based on exposure methods. The following are available:

peakdetect: uses only the brightest pixels in the exposure window/scene, making sure the image is appropriately-adjusted for bright pixels. This is a good setting for watching bright areas.

darkdetect: uses only the darkest pixels in the exposure window/scene, making sure the image is adjusted for dark pixels. This is a good setting for outdoor scenes where you want to watch a shaded region.

average: uses all of the pixels in the exposure window/scene. This is a good setting for indoor scenes where there are no very bright or very dark areas to skew the gain calculations.

clipaverage: uses all pixels except for the very darkest and brightest pixels. This is a good setting for outdoor scenes where you want to ignore both sky and shadows and to watch a region of intermediate brightness levels. This is also a good setting for interior scenes.

g. Saturation (numeric value 0.00 – 1.99) - Increasing saturation will deepen the colors of your images, making reds redder and blues bluer. Decreasing saturation will bring your image closer to a grayscale (i.e. monochrome, black and white) image. When saturation is set to 0, your camera will go into monochrome mode. In this case, your camera will discard all color information, creating grayscale images. Monochrome images compress better and transfer faster than comparable quality color images. In dark scenes, there is often little or no useful color information, so image quality will improve with monochrome images.

h. Brightness (numeric value between .2 and 1) – the higher the number the brighter the image.

i. NTSC/PAL – Selects output on the analog video connector.

j. Camera Motion Detection – User can enable and disable this option in OnGuard. However, all PRO LINE cameras, as well as the IQeye511 and IQeye510 have eight (8) motion detection zones can be configured directly from the camera's native UI. The sensitivity setting determines how much a pixel value must change in order to trigger. Values range from 0 – 255. The default setting is “auto” which is high enough to filter out most noise and slight lighting changes yet low enough to detect most motion. A lower value increases sensitivity and a higher one decreases it. The Size setting (0-100) specifies what percentage of the pixels in the user defined motion window must change in order to actuate a trigger. All BASIC LINE cameras have one global parameter for motion detection that is controlled by the NVR. Configurable settings in the camera's UI are motion sensitivity of low, medium and high.

k. Camera Inputs/Outputs – User can enable and disable triggers from the camera’s external digital inputs/outputs as well as the motion detection windows. If the “activate on motion” setting is enabled, motion trigger events will activate the camera’s relay output. If “activate on external trigger” setting is enabled the camera’s external relay input will activate the relay output.

Appendix:

The following IQinVision cameras/firmware are supported with the LNVR 6.3.249 Add-on for IQinVision Camera Support 1.0.1:

Camera Model Firmware Version

1 IQ302 V2.7/3	13 IQ753 V3.0/6	25 IQA12S V3.0/6
2 IQ602 V2.7/3	14 IQ755 V3.0/6	26 IQA13S V3.0/6
3 IQ501 V2.8/7	15 IQ802 V3.0/6	27 IQA15S V3.0/6
4 IQ510 V2.8/7	16 IQ803 V3.0/6	28 IQA20S V3.0/6
5 IQ511 V2.8/7	17 IQ805 V3.0/6	29 IQA21S V3.0/6
6 IQ701 V3.0/6	18 IQ811 V3.0/6	30 IQA22S V3.0/6
7 IQ702 V3.0/6	19 IQ851 V3.0/6	31 IQA23S V3.0/6
8 IQ703 V3.0/6	20 IQ852 V3.0/6	32 IQA25S V3.0/6
9 IQ705 V3.0/6	21 IQ853 V3.0/6	33 IQ040S V3.1/4
10 IQ711 V3.0/6	22 IQ855 V3.0/6	34 IQ041S V3.1/4
11 IQ751 V3.0/6	23 IQA10S V3.0/6	35 IQ042S V3.1/4
12 IQ752 V3.0/6	24 IQA11S V3.0/6	36 IQD40S V3.1/4

For additional help with the IQ camera, please contact IQinVision at: support@iqeye.com

IQinVision cameras support a number of other features that are not supported with this integration of OnGuard yet are accessible via the camera’s web interface such as: password protection, motion detection, digital image cropping, privacy masking, virtual cameras, e-mail notifications, and more. Please refer to Help icon (?) in camera’s web interface for more details.

For additional help with the Lenel OnGuard system, please contact Lenel Technical Support at: (585) 248-9720 x4 or (800) 631-6046, tech@lenel.com