

GigE Vision Compliant Camera

SDK selection for GEV (GigE Vision)

GigE Vision version must use an e-Bus driver (eBus Universal or e-Bus Optimal) or Windows Stack. The SDK required is the iPort Pure GEV which is in version 2.3.0. Version 2.2.0 or iPort SDK (iPort Vision Suite) does not support GEV protocol.

Note: For any newer SDK versions, only eBus driver (eBus Universal or e-Bus Optimal) can be used.

GigE Vision is an open frame-work for transferring imaging data and control signals between cameras and PCs over standard GigE connections. The four major elements are;

1. Device Discovery
 - Defines how compliant devices obtain IP addresses and are identified on the network
2. GigE Vision Control Protocol (GVCP)
 - Defines how to specify stream channels and control / configure compliant devices.
3. GigE Vision Stream Protocol (GVSP)
 - Defines how images are packetized and provides the mechanism for cameras to send image data and other information to host computers.
4. XML Camera Description File
 - Computer-readable data sheet of the features of compliant devices
 - Must be based on schema in EMVA's GenCam standard.
 - Seven mandatory features required for compliance.

GigE Vision standard requires 7 mandatory features to be compatible.

These features are;

- **Width:** Image width
- **Height:** Image height
- **PixelFormat:** Pixel format defined in GVSP
- **PayloadSize:** Number of bytes transferred for each image on the stream channel
- **AcquisitionMode:** Manner in which images are sequenced from the camera
- **AcquisitionStart:** Starts image acquisition in the specified mode
- **AcquisitionStop:** Stops image acquisition in the specified mode

In GEViCAM prototype, these basic functions and a test pattern are provided.

Access GEViCAM (GEV version)

Since GEV version is GigE Vision compliant, it can be accessed from any GigE Vision compliant drivers and

PC software.

The prototype models are equipped with a test pattern to first confirm connectivity. Once the device (camera) is found, the driver will show the connection.

Once image acquisition is activated, you will be able to see the test pattern on your display.

GenApi Explorer

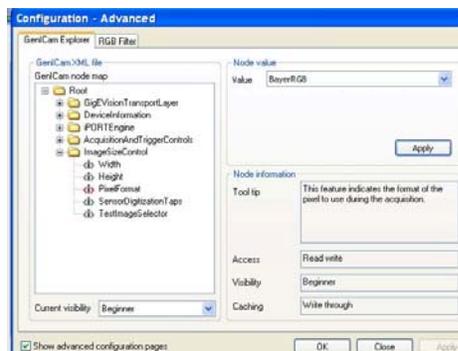
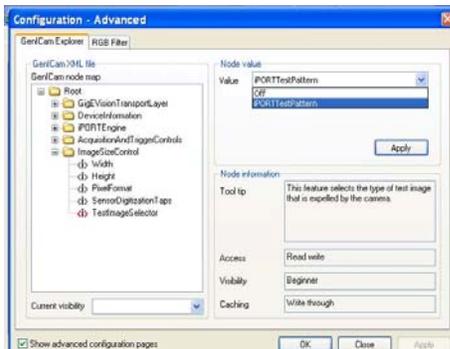
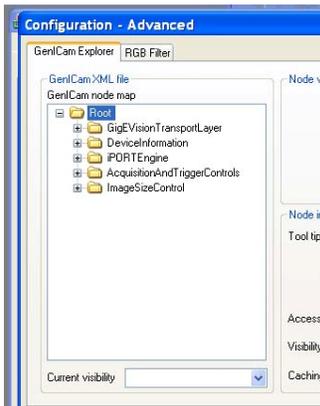
You can now open up device configuration (or equivalent) tab of each application software. Typical GigE Vision application software will show device configuration explorer window.

In GenApi application of Coyote SDK 2.3.0, the dialog appears as shown to the left.

In ImageSizeControl", there are mandatory features required.

To turn off the test pattern, "Stop" the image acquisition, then open GenCam Explorer and find TestImageSelector and turn it Off.

The Image width for XGA (GP-3780-0107GEV)



is 1024, height is 778. The PixelFormat for Bayer is RG8.

Click "OK" and go back to image acquisition. You will see continuous images.

The above example is part of a Coyote application but it will be a similar process in working with other API software.