

# Using BitFlow Frame Grabbers With Cognex CVL

## Rev 1.0

### Introduction

This document explains how to get BitFlow frame grabbers working with Cognex CVL. These instructions assume that CVL has already been installed and tested on the target system.

### 1. Download and install the BitFlow SDK

The latest BitFlow SDK can be downloaded from here:

[www.bitflow.com/downloads/bfsdk66.zip](http://www.bitflow.com/downloads/bfsdk66.zip)

This ZIP file includes a "Getting Started" document. Please follow the steps outlined in the section "Installing the SDK".

### 2. Perform basic system test

It is highly recommended that you test the BitFlow frame grabber using the internal synthetic image generator to verify the installation. Please follow the instructions in section call "How To Test the System Without a Camera" in the "Getting Started" document.

### 3. Test the system with your camera

The "Getting Started" document include instruction on how to configure your system to work with your specific camera. Please follow the instruction in the section called "Configure Your Board for Your Camera".

### 4. Configure the frame grabber I/O to meet you application needs

It's best configure and test the frame grabber I/O with the BitFlow applications, before moving on the CVL. On the input side, make sure you have your triggers and encoders properly connected to the grabber. Similarly, make sure all outputs are being driven by the correct I/O pins. The pin-outs are located in the hardware reference manuals.

Next use the BitFlow applications such as CamML and Ximilon to test the setup. These applications make it easy configure, test and re-configure everything until you get the perfect setup. Once the I/O subsystem is working with the BitFlow applications, it should also work correctly in CVL.

### 5. Download and install the BitFlow adapter for Cognex applications

The BitFlow adapter can be downloaded from here:

[www.bitflow.com/downloads/BFCognexAdapter.zip](http://www.bitflow.com/downloads/BFCognexAdapter.zip)

Unzip the download file and run the installer. This will install the adapter on your computer and setup the Windows Registry so that Cognex applications can find the BitFlow adapter.

## 6. Modify your CVL code to work with the BitFlow adapter

Only minor code changes are needed in order make an existing CVL application work with BitFlow frame grabbers. The main difference is BitFlow has its own system to handle camera configuration. Selecting configuration files is done using BitFlow utilities (i.e. SysReg). Traditional CVL users may be used to selecting the configuration file within their CVL code. Note: it is still possible to select BitFlow camera configuration files directly from your CVL code.

Traditional CVL applications select the camera configuration file (\*.CCF) using code like this:

```
try
{
    if (!format_)
    {
        format_ = &ccStdVideoFormat::getFormat(cmT
("Sony XC-HR50 640x480 IntDrv CCF"));
    }
}
catch (ccException& exc)
{
    resultText_ = cmT("Couldn't get format: ") + exc.message();
    format_ = 0;
}
```

In this case, the `getFormat()` function takes one parameter which is the name of the desired camera configuration file. To get this code to work with the BitFlow adapter, all that is needed is to change the configuration file name to "Cognex NullFormat". This string tells CVL to let the frame grabber adapter determine the correct configuration file.

The code would look like this:

```
try
{
    if (!format_)
    {
        format_ = &ccStdVideoFormat::getFormat(cmT
("Cognex NullFormat"));
    }
}
catch (ccException& exc)
{
    resultText_ = cmT("Couldn't get format: ") + exc.message();
    format_ = 0;
}
```

After making these changes, recompile your CVL application and you should see images coming from the BitFlow frame grabber.

## **7. Other areas that might need changes**

If you are using any of your frame grabber's custom properties, you will need to change these to work with BitFlow's frame grabbers. The quickest path forward there would be to make a list the current custom properties that you are using and send them to both Cognex and BitFlow customer support. They should be able to quickly determine how to reproduce the same functionality with the BitFlow frame grabbers.

## **8. We are here to help**

The best way to contact BitFlow customer support is email. Send support emails directly to:

`bitflow.support@advantech.com`