GETTING STARTED

ORYX®
GigE Vision

Will your system support the camera?

Recommended System Configuration:

- **OS**—Windows or Linux (32- or 64-bit)
- **CPU**— Intel i7 or greater
- **RAM**—8 GB dual channel
- **Ports**—10GBASE-T network adapter
- **Software**—Microsoft Visual Studio 2010, Visual Studio 2013, or Visual Studio 2015 (to run and compile example code)

Do you have a downloads account?

A downloads account is required to download software and firmware.

1. Go to www.flir.com/account.
2. Enter your email address and click Continue.
3. Complete the Create an account form and click Continue.
4. You will receive an email with a link to activate your account.
5. Once activated, you can login using the credentials you've created.

The Oryx resources page has many resources to help you operate your camera effectively, including:

- Spinnaker® SDK software, including drivers (login required)
- Firmware updates and release notes (login required)
- Dimensional drawings and CAD models
- Documentation

Do you have all the parts you need?

To install your camera you need the following components:

- Ethernet cable
- GPIO cable
- Lens
- Tripod adapter (optional)
- Interface card

Teledyne FLIR sells a number of the additional parts required for installation. To purchase, visit the Accessories page.

Camera Care

To clean the imaging surface of your camera, follow the steps outlined in Cleaning the imaging surface of your camera.
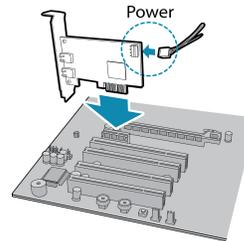
Extended exposure to bright sunlight, rain, dusty environments, etc. may cause problems with the electronics and optics of the system.

Avoid excessive shaking, dropping, or mishandling of the device.

> **Warning!** Avoid electrostatic charging.

Installing Your Interface Card and Software

1. Install your Interface Card

Ensure the card is installed per the manufacturer's instructions.

Connect the internal IDE or SATA power connector on the card to the computer power supply.

Alternatively, use your PC's built- in host controller, if equipped.

Open the Windows Device Manager. Ensure the card is properly installed. Ethernet cards appear under **Network Adapters**. An exclamation point (!) next to the card indicates the driver has not yet been installed.

2. Install the Spinnaker® Software

> **Note:** For existing users who already have Spinnaker installed, we recommend ensuring you have the latest version for optimal performance of your camera. If you do not need to install Spinnaker, use SpinView to install and enable drivers for your card.

a. Go to the Spinnaker SDK page.
b. Click the Download button. You are prompted to login, if not already.
c. Select your operating system. Depending on your selection there may be other versions to select.
d. After download is complete, open the file to start the Spinnaker setup wizard.
e. Follow the steps in each setup dialog.

3. Enable jumbo frames on the Ethernet card

a. In **Start->All Programs-> Spinnaker SDK->SpinView**, right click on the Network Adapter and select Adapter Configuration, then select IP Configuration.
b. Click Open Network Connections.
c. Click Change Settings.
d. Click on the Advanced tab and from the Settings list select Jumbo Packet.
e. Set the Value to 9014 Bytes and click OK.

See How to Optimize GigE Network Adapter Settings for more information on configuring for best performance.

Using the Spinnaker® SDK

You can monitor or control features of the camera through Spinnaker API examples provided in the Spinnaker SDK, or through the SpinView camera evaluation application. A *Programmer's Guide and API Reference* is included in the installation.

TELEDYNE FLIR
Everywhere**you**look™

Installing Your Oryx 10GigE

1. Attach a Lens

Unscrew the dust cap from the lens holder to install a lens.

2. Connect the interface Card and Cable to the Camera

Plug the interface cable into the host controller card and the camera. The cable jack screws can be used for a secure connection.

When the camera is first connected, the operating system automatically installs the camera driver. Camera drivers are available with the Spinnaker SDK installation.

3. Plug in the GPIO connector

GPIO is used for power, trigger, serial input output, and strobe.

4. Confirm Successful Installation

Run the SpinView application: **Start->All Programs-> Spinnaker->SpinView**
The SpinView application can be used to test the camera's image acquisition capabilities.

5. Configure IP Settings if necessary

By default, a dynamic IP address is assigned to the camera according to the DHCP protocol. If DHCP addressing fails, a link-local address is assigned. If necessary, in SpinView change the IP address of the camera to be on the same subnet as the NIC.

Changes to your camera's installation configuration can be made using the SpinView application.

Status Indicator LED

LED	10GigE
No Light	No power or LED is in inactive state or LED is in error status state with no error
Blinking Green (1 blink)	Link-Local Address (LLA)
Blinking Green (2 blinks)	DHCP IP Address
Blinking Green (3 blinks)	Persistent IP Address
Solid Green	Acquisition Started
Rapid Flashing Green	Firmware update in progress
Flashing Green and Red	General Error

Network Status LEDs

|	
No Light	No network connection
Left and Right Bright Green	10 GigE connection
Left Dim and Right Bright Green	1 GigE connection
Left and/or Right Blinking Green	Data transfer in progress

Camera Interface

Ethernet Connector

The 8-pin RJ-45 Ethernet jack is equipped with two (2) M2 screwholes for secure connection. Pin assignments conform to the Ethernet standard.

General Purpose I/O Connector

The camera is equipped with a 12-pin GPIO connector on the back of the case.

Small, Standard, and Large Case Models
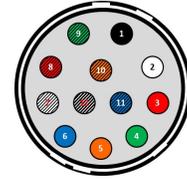
Color	Pin	Line	Function	Description
Black	1	N/A	GND	DC camera power ground
White	2	N/A	POWER	DC camera power
Red	3	Line 1	GPIO_OPT_OUT1	Opto-isolated output (GPO1)
Green	4	Line 4	GPIO_OPT_OUT2	Opto-isolated output (GPO2)
Orange	5	Line 0	GPIO_OPT_IN1	Opto-isolated input (GPI1)
Blue	6	Line 3	GPIO_OPT_IN2	Opto-isolated input (GPI2)
White with black stripes	7	Line 2	GPIO_TTL_IO3	TTL input/output 3*
Red with black stripes	8	Line 5	GPIO_TTL_IO4	TTL input/output 4*
Green with black stripes	9	N/A	GND	DC camera power ground
Orange with black stripes	10	N/A	POWER	DC camera power
Blue with black stripes	11	Line 6	3.3 V OUTPUT	+3.3 V output, current 120 mA (nominal) - firmware enabled
Black with white stripes	12	N/A	OPTO_GND	Ground for opto-isolated I/O, not connected to camera ground

*When configured as output line format is open drain, not TTL. Users should attach their own external pull-up resistor.

For More Information

Teledyne FLIR endeavors to provide the highest level of technical support possible to you.

Support resources can be accessed through the Oryx resources page.

Your camera's settings and capabilities—Technical Reference or Camera Reference

Spinnaker® SDK—API Reference / Programmer's Guide

Selecting a lens for your camera

10GigE Best Practices: Setting Up a Single-camera System

Using third-party applications from our software partners

Contacting Us

For any questions, concerns or comments please contact us via the following methods:

Email	General questions
Support Ticket	Technical support
Website	Find specifications, support articles, downloads on the product page at Teledyne FLIR machine vision

TELEDYNE FLIR
Everywhere**you**look™