KestrelSpec for Echelles Version 5.62 (32-bit) Installation Instructions March 4, 2014

KestrelSpec can be used with different versions of Windows depending upon the CCD camera:

Apogee Imaging Systems: The Alta and AltaF cameras are supported and they run under Windows 2000/XP/Vista/7 <u>only</u>. The Apogee legacy cameras are no longer supported.

Andor Technology: all CCD, ICCD and EMCCD models will run under Windows XP/Vista/7.

The minimum requirements are a Pentium processor and 1 GB of RAM, but more RAM is recommended. This version of KestrelSpec executes with English, Asian or European versions of Windows.

Windows Installation Procedure

Please follow this sequence before using the KestrelSpec software:

- 1. Install the KestrelSpec program
- 2. If KestrelSpec will be used with an Apogee camera, run the appropriate Setup Apogee Driver program.
- 3. If KestrelSpec will be used with an **Andor** camera, install Andor's Solis software, the Andor Software Development Kit (SDK), or just the Andor camera driver by itself.
- 1) Install the KestrelSpec program
 - It is best to exit from all application programs before installing new software. For 2000/XP/Vista/7, you must have administrator privilege to install software.
 - Insert the KestrelSpec installation CD into a CD-ROM or DVD drive
 - Windows should display a prompt asking if you want to view files on the CD. Click OK. If no prompt is displayed, use Windows Explorer to view the files on the CD.
 - Execute the SETUP program in the main folder on the CD by clicking on the SETUP.EXE file
 - The SETUP program will lead you through the installation process.
- 2) Install any required drivers and the camera library for an Apogee camera if an Alta camera will be used

For the Alta cameras, the current version for the software driver is v5.4, which is installed by running the SetupApogeeSoftware.exe program in the **Apogee Drivers** folder on the KestrelSpec installation CD. To install the software driver, your Windows user account must have administrator privileges. Make sure the Alta camera is <u>not</u> connected to your computer before executing the SetupApogeeSoftware.exe program. This installation program will detect whether your version of Windows is 32-bit or 64-bit and it will install the appropriate driver for your operating system. Detailed instructions for installing the driver software is in the Apogee Camera Installation Guide.

See the instructions entitled "Using Apogee Cameras" later in this section for more details.

3) Install any required camera drivers for an Andor Technology camera with a PCI or USB2 interface

For all Andor cameras, including the "classic" models, the camera driver is installed by installing Andor's Solis software, the Andor SDK (Software Development Kit), or by installing the driver directly from the KestrelSpec installation CD.

See the instructions entitled "Using Andor Technology Cameras" later in this section for details on installing the driver for your camera. For further reference, see the section for installing/reinstalling the Andor camera driver on Windows 7.

Decimal Point Format

KestrelSpec will only accept numbers in the format that uses a period for the decimal point. If your system is configured so commas are displayed instead of decimal points, then KestrelSpec will not function properly. To change the decimal point setting, go to the Windows **Control Panel** and select **Regional Settings**, or **Regional and Language Options** on Windows XP, or **Clock, Language and Region** in Windows 7. Then select **Number**, or **Customize...** on Windows XP/Vista, or **Additional Settings...** under **Change the date, time or number format** on Windows 7. The "Decimal Symbol" must be set to a period, and not a comma. Apply this setting if any changes were made.

Uninstall Procedure

The installation procedure creates a file called INSTALL.LOG in the same directory as the KestrelSpec files. This log file is used by Windows to remove KestrelSpec from your system.

- Go to Add/Remove Programs or Unistall Programs under the Control Panel and select KestrelSpec for removal. As an alternative on XP and earlier versions of Windows, select "Uninstall KestrelSpec" from the KestrelSpec program group. For Windows Vista/7, it is recommended to use Unistall Programs under the Control Panel.
- To remove the hardware key driver, select Sentinel System Driver Installer for removal under Add/Remove Programs or Unistall Programs under the Control Panel.

Technical Support

Catalina Scientific welcomes your comments, suggestions and questions concerning the use of KestrelSpec for Windows. Here is our contact information:

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Documentation

The document files for the software manual are in the **Documentation** folder on the installation CD. The software manual is split into separate files:

KestrelSpec_1 – document for section 1, Learning KestrelSpec, of the Software Manual KestrelSpec_2 – document for section 2, Using KestrelSpec, of the Software Manual KestrelSpec_3 – document for section 3, Reference, of the Software Manual KestrelScript – document for the section on Scripting in the Software Manual Install KestrelSpec – document for the Installation Instructions of the Software Manual

For the Andor and Apogee cameras used with the SE 200:

SE 200 for Andor – hardware manual for the SE 200 and cameras from Andor Technology SE 200 for Apogee – hardware manual for the SE 200 and cameras from Apogee Imaging Systems

Quick Start

When KestrelSpec is executed for the first time, the following screen will be displayed:

KestrelSpec Full Version 5.62				
CCD, ICCD, EMCCD, CMOS Camera:				
Andor Technology, PLC				
C Raptor Photonics Limited				
Apogee Imaging Systems				
Echelle Spectrograph Option:				
C EMU series from Catalina Scientific				
 Enable KestrelScript (Windows DDE) Always display this prompt at startup 				
<u>OK</u> <u>E</u> xit				

There is a choice of CCD cameras from three manufacturers.

The option to **Enable KestrelScript (Windows DDE)** should be checked whenever commands will be sent to KestrelSpec from another Windows program via DDE (Dynamic Data Exchange). KestrelScript is described in detail in another section of this software manual. KestrelScript is disabled by default because when DDE is activated, KestrelSpec must constantly poll for incoming commands, which uses CPU time. If scripting commands will not be sent to KestrelSpec, it's best to leave DDE disabled.

Select the appropriate camera option and click on the "OK" button. If the option to "Always display this prompt at startup" is left unchecked, then this screen will not be displayed again until the Kestrel.ini file in the installation folder is deleted. This INI file stores the user-entered choices for the camera and whether this screen should be displayed at startup. If the Kestrel.ini file is ever deleted, then the software will be set back to the system defaults and the above screen will be displayed at startup.

An echelle spectrograph is very different from a scanning spectrograph. It is recommended that you become familiar with the software by reviewing the *Learning KestrelSpec* section of the software manual. This section is a tutorial with demo images and spectral curves. Using the SE 200 system is described in detail in both the *Learning KestrelSpec* and *Using KestrelSpec* sections of the manual. The SE 100 is described in the *Appendix* section.

Using Andor Technology Cameras

If your camera came with **Andor's Solis** software, then follow the Solis installation instructions to install the camera driver and software. Once the driver and software are installed, make sure the Solis program can communicate with the camera and acquire images before KestrelSpec is executed for the first time.

If your camera came with **Andor's SDK** (Software Development Kit), the SDK will install all the interface files so KestrelSpec can communicate with your Andor camera. Be sure to install the SDK <u>before</u> the camera is connected to your computer and powered on. If your camera uses a PCI card, install the SDK <u>before</u> installing the PCI card in your computer. It's important to have the driver for the card already on your computer <u>before</u> the card is installed.

If your camera came with just the KestrelSpec software and <u>neither</u> Solis nor the SDK from Andor, skip to step 2) to install the camera driver from the **KestrelSpec CD**.

If you prefer, you can load the driver directly from the KestrelSpec CD because it's faster than installing either Solis or the SDK. But for *Windows 7*, it is highly recommended that Solis or the SDK be installed, because installing just the driver files could result in an incomplete install.

Follow these steps for installing the SDK and then installing the camera driver, either USB2 or PCI card:

1) Install the Andor SDK for your camera model

Insert the Andor SDK CD in your disk drive. If the installation program doesn't automatically start, run the setup.exe program on the CD. The following screen will be displayed:



Click on the "Next" button and the Andor camera models will be displayed:

Install	×
Camera Types	4
Before installing this software you need to know your camera model number and the type of controller card you possess. Please select your type of camera.	
 CCD (Models DB4xx, DH4xx, DM4xx, D04xx, DU4xx, DV4xx, DW4xx, DX4xx, DY4xx) ICCD (Models DH5xx) iStar (Models DH7xx, DK7xx) Xon (Models DV8xx, DU8xx) Newton (Models DU9xx, DV9xx) ✓ iKon (Models DU9xx, DV9xx, DW9xx, DZ9xx) iDus (Models DU4xxA, DV4xxA, D04xxA) USB iStar (Models DK7xxA) Luca 	
InstallShield	el

Select the model that matches your camera. In this example, an iKon camera is being installed. Place a check in the box for your camera model and click on the "Next" button.

Install	
Choose Destination Location Select folder where setup will install files.	
Setup will install Andor Software Development Kit in the following folder.	
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.	
Destination Folder	
C:\Program Files\Andor iKon\Drivers	
InstallShield	-
< <u>B</u> ack Next > Cancel	

Enter a Destination Folder for the Andor SDK and click on the "Next" button.

The SDK and camera driver files will be installed.

An HTML screen will then be displayed after the files have been copied to your computer:



This window can be closed and the final dialog box will be displayed:

Install	
	InstallShield Wizard Complete Setup has finished installing the application on your computer. Please refer to SDKReadMe.htm for important installation information. You must restart the machine in order to use the application. Yes, I want to restart my computer now. Yes, I want to restart my computer now. No. I will restart my computer later. You may launch the application by selecting the Andor iKon icon in the Start Menu.
	< <u>B</u> ack Finish Cancel

Select the option for "No, I will restart my computer later" and click on the "Finish" button.

If your camera has a PCI card interface, then shutdown your computer now and install the PCI card according to the instructions in the camera user manual. Once the card is installed, then reboot the computer so the camera driver can be installed.

If your camera has a USB2 interface, then there is no need to reboot your computer after installing the SDK and interface files.

2) Install the driver for your camera either from the SDK files or from the KestrelSpec CD

Follow the instructions in the camera user manual to connect the camera to your computer using either a PCI card or a USB2 port. If the camera has a PCI card, then be sure to power <u>off</u> the computer, install the board and connect the camera according to the camera user manual, then power on the computer. Once the computer has booted and the camera is connected, then power on the camera. When the camera is powered on the first time, Windows will acknowledge that it found new hardware and the Hardware Wizard will prompt for the driver:



Click on the "No, not this time" radio button as shown above, then click on the "Next" button.

On the next screen, Windows will prompt for the location of the driver for the camera:



If **Andor's SDK** has been installed, select the first (**Recommended**) option to "Install the software automatically" and then click on the "Next" button. Continue to option **a**) on the following page.

To install from the **KestrelSpec CD**, select the second (**Advanced**) option to "Install from a list or specific location", and then click on the "Next" button. Continue to option **b**) on the following page.

a) Recommended option to "Install the software automatically" with Andor's SDK: The Hardware Wizard will automatically locate the driver for the camera. If only one file is found, then the wizard will go ahead and install it. In this example, two potential files were found as shown below. The second file was selected because it was more recent than the first file:

Found New Hardware Wizard				
Please select the best match for your hardware from the list below.				
Andor i Kon				
Description Version Manufacturer Location				
Andor iKon 0.1.12.0 Andor Technology c:\windows\inf\oem23.inf				
AndoriKon 0.1.12.0 Andor Technology c:\windows\inf\oem66.inf				
This driver is not digitally signed! <u>Tell me why driver signing is important</u>				
< <u>B</u> ack <u>N</u> ext > Cancel				

Select the most recent file if given a choice and then click on the "Next" button.



Click on the "Finish" button and the Andor camera driver will now be installed.

b) Advanced option to "Install from a list or specific location" from the KestrelSpec CD: The Hardware Wizard will prompt for the location of the driver file. Direct the Wizard to either the PCI or USB folder under "Andor Drivers" on the KestrelSpec installation CD loaded in your disk drive:

Ple	ase choose your search and installation options.
	Search for the best driver in these locations.
	Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
_	Search removable media (floppy, CD-ROM)
\rightarrow	✓ Include this location in the search
	D:\Andor Drivers\PCI Scowse
	Don't search. I will choose the driver to install. Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
	< <u>B</u> ack Next > Cancel

If your camera has a PCI card, use the "Browse" button and go to the PCI folder under "Andor Drivers" on the KestrelSpec CD. Otherwise, go to the USB folder. Then click on "Next".

In the example shown on this page, the Andor camera had a PCI interface card.

When the Wizard has finished, it will display a message similar to this one:

Found New Hardware Wizard		
	Completing the Found New Hardware Wizard The wizard has finished installing the software for:	
	Andor Technology - Driver for PCI Device.	
	< Back Finish Cancel	

Click on the "Finish" button to exit the Hardware Wizard.

Whenever a hardware driver has just been installed, it is highly recommended that the computer be **shutdown** and **rebooted** to make sure it is a "clean" install. Rebooting the computer is especially important for a camera with a PCI interface.

Once the driver installation has been completed, the camera will be listed in the Windows Device Manager whenever the camera is powered on and connected to the computer.

To check on the camera driver, open the Windows Device Manager and the camera will be listed as either a PCI device or a USB device, depending upon the type of interface your camera uses. In this example, the camera on the left has a USB interface and the one on the right has a PCI card:

💄 Device Manager	\mathbf{X}	
<u>File A</u> ction <u>V</u> iew <u>H</u> elp		
⊕… 😼 Computer ⊕.≪∞ Disk drives		
Display adapters DVD/CD-ROM drives		🖳 Device Manager
IDE ATA/ATAPI controllers Imaging devices		Eile Action View Help
Keyboards EibUSB-Win32 Devices	=	
Andor Kon		Computer
Hardems		Bisk drives
PCMCIA adapters		BUD/CD-ROM drives
Ports (COM & LP1) Fi se Processors	~	Eloppy disk drives

To see more details about the driver, double click on the camera model and more information will be displayed:

Andor iKon Properties	Andor Technology PCI driver Properties
General Driver Details	General Driver Details Resources
Andor iKon	Andor Technology PCI driver
Device type: LibUSB-Win32 Devices	Device type: Andor
Manufacturer: Andor Technology	Manufacturer: Andor Technology
Location: Location 0 (USB Device)	Location: PCI Slot 3 (PCI bus 5, device 1, function 0)
Device status	Device status
This device is working properly.	This device is working properly.
If you are having problems with this device, click Troubleshoot to start the troubleshooter.	If you are having problems with this device, click Troubleshoot to start the troubleshooter.
×	
Iroubleshoot	Iroubleshoot
Device usage:	Device usage:
Use this device (enable)	Use this device (enable)
OK Cancel	OK Cancel

USB Camera

PCI Camera

Now that the camera is defined in Windows Device Manager, run the KestrelSpec program and select your Andor camera model:

Andor Technology Cameras		
Please select your camera model:		
CCD Classic Camera (models DV4xx)		
Model: 420 💌	Controller: CCI-010	
C ICCD Classic Camera (mod	els DH5xx)	
Model: 534 💌	Controller: CCI-010 🔻	
Photocathode: C 18mm C 25mm	Software Controlled Gain	
🔿 iStar Classic Camera (mode	els DH7xx)	
Model: 734 💌	Controller: CCI-010 🔹	
Photocathode: © 18mm © 25mm	🗆 Intelligate capable	
Euca or iXon EMCCD, iKon or iDus CCD, USB iStar		
<u>OK</u> <u>D</u> emo <u>C</u> ancel		

Note: For cameras with a USB2 interface, it is a good idea to connect the camera to the <u>same</u> USB2 port on your computer each time KestrelSpec is executed. The camera can be used with any USB2 port on your computer. But every time it is switched to a new port, the Hardware Wizard will prompt you to install the driver.

To run the KestrelSpec program without connecting to a camera, just click on the "Demo" button.

If a camera is connected to the computer, then select its model and click on "OK" so the camera can be initialized.

To exit the program, click on "Cancel".

How to Install/Reinstall the Andor USB or PCI Camera Driver on Windows 7

For Windows 7, it is best to install either the Andor SDK or Andor's SOLIS software because they will install the PCI or USB device driver for any Andor camera. Always install the SDK or SOLIS <u>before</u> connecting the camera to the computer. However, it is possible to install or reinstall any camera driver using just the driver files for either a PCI or USB camera.

These driver files are in the following folders on two disks:

Andor SDK disk:	Device Drivers folder, PCI and USB subfolders
KestrelSpec disk:	Andor Drivers folder, PCI and USB subfolders

If the Andor SDK has been installed, then the camera driver files reside in the SDK's installation folder. The camera drivers can only be installed by a user with *Administrator* privilege.

Follow these step-by-step instructions to install/reinstall the driver for either a PCI or USB Andor camera.

1) Open the **Advanced System Settings** option under the Windows **Control Panel**. Click on the Windows **Start** button, then click on **Computer**, then click on the **System properties** option.

The Control Panel window will be displayed with these options in the upper lefthand corner:



2) Click on the **Device Installation Settings** button under the **Hardware** tab of the System Properties window:



3) Configure the **Device Installation Settings** as follows:



Click on the Save Changes button, and the System Properties window will reappear.

4) Open the **Device Manager** from the System Properties window:

System Properties	
Computer Name Hardware Advanced System Protection Remote	
Device Manager The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device. Device Manager	Click on Device Manager
Device Installation Settings Choose whether Windows downloads driver software for your devices and detailed information about them.	
Device Installation Settings	
OK Cancel Apply	

5) If installing the driver for the first time, go on to step 6. Otherwise, if this is a <u>reinstall</u>, then uninstall the driver for the currently connected camera. Find the Andor device that needs to be reinstalled, as in this example:



The Andor Luca camera is marked with an ! because Windows 7 is having a problem recognizing the camera driver. This current driver first needs to be uninstalled, before it can be properly reinstalled

Double click on the camera name, which in this example is "Andor Luca". Click on **Uninstall** under the Driver tab:

Andor Luca Properties		
General Driver Details		
Andor Luca		
Driver Provider:	Andor Technology	
Driver Date:	8/27/2006	
Driver Version:	0.1.12.0	
Digital Signer:	Not digitally signed	
Driver Details	To view details about the driver files.	
Update Driver	To update the driver software for this device.	
Roll Back Driver	If the device fails after updating the driver, roll back to the previously installed driver.	
Disable	Disables the selected device.	
Uninstall	To uninstall the driver (Advanced).	Click on Uninstall to remove the driver causing a problem
	OK Cancel	

Confirm the uninstall and be sure to delete the driver files:



Once the camera is removed from the Device Manager, disconnect the camera and power it off.

6) Whether the driver is being reinstalled or the driver is being installed for the first time, make sure the camera is connected to the computer and powered on.

The camera will be unrecognized in Device Manager and it should be marked as an unknown device:



The Andor camera is unknown because Windows 7 cannot find its driver, which will be installed in the next step.

If you can't find the camera device, then scan for hardware changes under the "Action" menu option.

7) Double click on the "Unknown device" so the driver can be updated:

Unknown	device Properties	;	×	
General	Driver Details			
1	Unknown device			
	Device type:	Other devices		
	Manufacturer:	Unknown		
	Location:	Port_#0002.Hub_#0008		
The The elem To fi	drivers for this device re is no driver select ent. nd a driver for this c	ce are not installed. (Code 28) red for the device information set or levice, click Update Driver.	*	
		Update Driver.	Cancel	Click on Update Drive

8) Be sure to locate the driver manually by clicking on **Browse my computer for driver software**:

	How do you want to search for driver software?	
	Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.	
on this	 Browse my computer for driver software Locate and install driver software manually. S option 	

9) Click on the option to Let me pick from a list of device drivers on my computer:

	Browse for driver software on your computer
	Search for driver software in this location:
	C:\PROGRAM FILES (X86)\ANDOR SOLIS V 4.18.30004 Browse
	✓ Include subfolders
k on th	 Include subfolders s option Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver of there in the came of the device.
k on th	 Include subfolders s option Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver software in the same category as the device.

10) If Andor has a category in the list, choose the Andor device type. Otherwise, choose Imaging Devices:

Update Driver Software - Unknown Device	
Select your device's type from the list below. Common hardware types:	
IEEE 1284.4 compatible printer	-
EEE 1394 and SCSI printers	
FIEEE 1394 Bus host controllers	
Imaging devices Select a device type	-
Infrared devices	
Carlo Keyboards	
LibUSB-Win32 Devices	
Senter Extender	
📕 Medium Changer devices	
Image: Memory devices	
Memory technology driver	-
Click on Next	Next Cancel

Then click the **Next** button.

11) Andor will not appear in the Manufacturer list unless Andor was chosen as a device type. But it doesn't matter because you need to select **Have Disk...**:

Sciece the device driver	you want to instan for this hardware.	
Select the manufacto	urer and model of your hardware device and then clic	:k Next. If you have a
disk that contains th	e driver you want to install, click Have Disk.	
Manufacturer	Model	
PitClow Inc.		
Brother	BitFlow Frame Grabber	=
Canon	BitFlow Karbon	
Canon Inc.	BitFlow Neon	
		-

12) Browse to whatever folder has the Andor USB or PCI driver files. They can be on the Andor SDK disk or the KestrelSpec installation disk, or on the computer hard drive if the Andor SDK was installed. The Locate File dialog box wants the Setup Information file (*.inf) for either a PCI camera (atmcd.inf) or USB camera (andor-libusb.inf).

This example for the USB Luca camera uses the andor-libusb.inf file from the KestrelSpec installation disk:

Locate File					—
Look in:	🐌 USB		-	G 🌶 🖻 🛄 -	
(Pa)	Name	*		Date modified	Туре
Recent Places	andor-libusł	b.inf		11/4/2009 10:14 AM	Setup Infc
Desktop					
Libraries					
Computer					
Network	•	III			•
	File name:	andor-libusb.inf		-	Open
	Files of type:	Setup Information (*.inf)		_	Cancel

13) Click on the **OK** button so the driver files in the selected folder will be loaded:

Install Fro	m Disk	—	
*	Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.	OK Cancel	Click
<	Copy manufacturer's files from: E:\Andor Drivers\USB	Browse	

14) Windows should now recognize the appropriate camera, which is the Andor Luca in this example:

Update Driver Software - Unkno	wn Device	
Select the device driver you	want to install for this har	dware.
Select the manufacturer and disk that contains the drive	nd model of your hardware device er you want to install, click Have Di	and then click Next. If you have isk.
Show compatible hardware		
Andor Luca	elect the model	
This driver has an Authenticod	e(tm) signature. n <u>portant</u>	Have Disk
Tell me why driver signing is in		

Highlight the camera model by clicking on it, then click on the **Next** button.

15) Windows will then attempt to install the driver:



16) If successful, a message similar to the following will be displayed:



Click on the **Close** button and the camera is ready to use on Windows 7.

In the Device Manager, the camera should now be recognized:

🚔 Device Manager 📃 🗖	x
File Action View Help	
Keyboards	*
🔺 🏺 LibUSB-Win32 Devices	
🚽 📮 Andor Luca	
Mice and other pointing devices	Ŧ

Using Apogee Cameras

Apogee Alta Cameras – USB2 and Ethernet Cameras

The Alta cameras have either an Ethernet or USB interface, but neither camera requires an INI file because all the parameters for operating an Alta camera are stored in the camera head. The USB camera requires that the "Apogee Ascent USB Camera" driver be installed. When the USB driver is properly installed, the Windows Device Manager will have the USB camera listed as a device whenever the camera is powered on and connected to a USB2 port on the computer:



As long as the device entries for the USB camera do **not** have any yellow exclamation marks (!) or question marks (?), then Windows recognizes the camera and the KestrelSpec program will be able to communicate with it via the USB interface. The **Device Manager** can be accessed through the **Control Panel**. Under the Control Panel, select **System** and then click on the **Hardware** tab and click on the **Device Manager** button.

The Ethernet cameras don't require a driver because they are not attached to any one particular computer, but are unique devices on the local network. Since they are not attached to a single computer, they do not appear in the Device Manager like USB cameras do. An Ethernet camera is connected to a hub, router or switch via a network cable and then powered on so it becomes an attached device on the network. The network must have a router or server that automatically assigns IP addresses to network devices. This process of assigning addresses is called DHCP, or Dynamic Host Configuration Protocol. Verify the presence of a DHCP router or server by checking the documentation for the network or consulting the network administrator. Commercial routers typically have a way to determine the IP addresses for any attached devices on the network. Consult the router documentation or the network administrator to determine the IP address for the attached Ethernet camera.

Ethernet cameras can be configured through any common web browser as long as the camera's IP address is known. Enter the IP address into the **Address** bar of the Internet browser. The camera will reply with its own web page of settings as shown on the next page:



The camera home page contains a snapshot of useful information about the system, all of which can help Apogee's technical support if ever the camera requires service. The camera home page also contains links for configuring network settings, serial ports, reboots, etc. When one of these links is selected, an authentication dialog box will be displayed:

Connect to 192	2.168.0.10
R	GA
The server 192.1 requires a userna Warning: This ser password be sent without a secure	68.0.10 at Apogee Alta Network Camera me and password. ver is requesting that your username and in an insecure manner (basic authentication connection).
<u>U</u> ser name:	🖸 admin 💌
Password:	•••••
	Remember my password
	OK Cancel

The default user name is **admin** and the default password is **configure**. Enter these two values in the appropriate boxes and click on **OK** to access any of the optional links for the camera.

The online **Help** page contains useful information about modifying the camera configuration settings.



Situations may occur in which a network camera requires a "hard reset" to return the camera's configuration settings to their default values. For example, a network camera may need its IP address hardcoded on one local network to avoid conflicts with other network devices. However, that particular address may not be available if the camera is moved to another local network. In situations like this, the camera's configuration settings can be reset to their default values so the camera can be assigned an IP address on the new network. A "hard reset" is performed using the **RESET** button on the camera:

Power off the camera. Push the **RESET** button on the side of the camera and **hold the button down** while the camera is powered on. Continue to **hold the button down** until the red lights on the camera start to blink as they normally do when the camera is ready to initialize.

This procedure should return the camera configuration settings to their default values. The camera can be configured again using a Web browser once its new IP address is known.

When the KestrelSpec program is first executed, there is a prompt for the type of camera interface:

Select an Alta Can	nera to Initialize		
C Ethernet	Address: 192.168.0.3	Port: 80	
⊙ USB	Device ID: 0	<u>OK</u>	Select Demo to run
<u>D</u> iscover		Demo	the program without connecting to the camera.

If the Address and Port for an Ethernet camera have not yet been verified or if the Device ID for a USB camera has not yet been verified, click on the "Discover" button. A dialog box to search for either a USB or Ethernet camera, or both types of cameras, will be displayed:

Apogee Alta (Camera Sele	ction Dialog				×
Camera Inte		Ethernet	Net Mas	vork 192 . 1 k:	68 . 0 . 255	
Camera	Interface	Identifier	Port	Name	Model	
Search.	··· Ne Pro	twork Search gress:				
Status Search to	select camera.			ОК	Cancel	

Enable the check box for the type of camera that will be searched. If searching for an Ethernet camera, enter the appropriate network mask or the camera's IP address, if known. Click on the "Search" button.

Note: When searching for an Ethernet camera, there may be a conflict with a firewall or any Internet security system protecting the computer. If this conflict occurs, a message may be displayed similar to this:

Norton Internet Security	×
Program Control	
🛕 Medium Risk	?
Kestrel.exe is attempting to	<u>Alert Assistant</u> o access the Internett.
Show Details	
What do you want to do? Permit	
☑ Always use this action	QK

If this type of warning is displayed, be sure to select **Permit** to allow the Kestrel.exe program file to have access to the network so it will be able to communicate with the Ethernet camera.

When the search is complete, which may take up to 10 seconds or so, a list of cameras will be displayed:

١pc	gee Alta	Camera Sele	ction Dialog				x
Camera Interface		Ethernet Network 192 . 168		68.0.4			
Γ	Search for (Camera					
	Camera	Interface	Identifier	Port	Name	Model	
	1 2 Search	USB Ethernet	0 192.168.0.4 twork Search	N/A 80	N/A 000951000072	Alta-U4710 Alta-E4710]
	Status Camera se	earch complete	l.			Cancel	

In this example, two Alta cameras were found. One is a U47 model connected to one of the computer's USB2 ports at device Identifier 0. The other is an E47 model connected to the local network at IP address 192.168.0.4 and port 80. Both of these cameras are connected and powered **on**, otherwise, they could not be detected during the search.

To select a camera	, click on it to h	highlight it, a	and then	click on the	"OK"	button:
--------------------	--------------------	-----------------	----------	--------------	------	---------

Apogee Alta	Camera Sele	ction Dialog				×
Camera Interface		✓ Ethernet	themet Network 192 Mask: 192		. 168 . 0 . 4	
Search for	Camera					
Camera 1	Interface USB	Identifier 0	Port N/A	Name N/A	Model Alta-U4710	
2	Ethernet	192.168.0.4	80	000951000072	Alta-E4710	
Search	n Ne Pro	twork Search				
Status				_		
Selected	Camera 2 (Alta-	E4710)		ОК	Cancel	

In the previous example, the Ethernet camera was selected at IP address 192.168.0.4 on the local area network. Click on the "OK" button once a selected camera is highlighted:

Select an Alta Camera to Initialize						
Ethernet	Address:	192.168.0.4	Port: 80			
O USB	Device ID:	0	<u>O</u> K			
Discover			<u>D</u> emo Cancel			

Click on the "OK" button to initialize the selected camera, which in the above example is the Ethernet camera:

initializing the Alta camera at the Ethernet address						
Ethernet	Address:	192.168.0.4	Port: 80			
O USB	Device ID:	0	<u>0</u> K			
<u>D</u> iscover			<u>D</u> emo <u>C</u> ancel			

If initialization is successful, the KestrelSpec program will display its main menu and the camera is ready for acquisition as soon as the temperature reaches its set point. Monitor the camera's temperature in **Setup:Camera Configuration...** to make sure it has reached the set point before acquiring images.