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1. Installation and operation of ThermaCAM Connect 3

1.1. Introduction

FLIR Systems' software *ThermaCAM Connect 3* – lets you download images from your infrared camera to your desktop or laptop computer

1.2. Installation

NOTE: This installation tutorial applies to ThermaCAM Connect 3 only.

1.2.1. Software Requirements

1.2.1.1. Camera

ThermaCAM Connect 3 will only work with these camera configurations:

- E Series cameras: boot2 version 2.7.2.1 or higher
E Series cameras: appl version 1.7.18.1 (or higher)
- P/S cameras: boot2 version 2.4.2.1 (or higher)
P/S cameras: appl version 2.4.4.1 (or higher)

To check the version of boot2/appl, select **Setup → Camera Info** in the camera. Make sure the version number of the module 'boot2'/ 'appl' is as states above.

1.2.1.2. Windows

Serial communication(RS232) between PC and camera are supported on the following operating systems

- Windows 98 Second Edition
- Windows Me
- Windows NT 4, Service Pack 6
- Windows 2000
- Windows XP

USB and connections between PC and camera are supported on the following operating systems

- Windows 98 Second Edition
- Windows Me
- Windows 2000
- Windows XP

NOTE: Before you install the application, please close all other programs on the computer. Make sure ThermaCAM Connect is installed before connecting the camera to the USB or port.

1.2.2. Installing ThermaCAM Connect 3

1. Make sure the IR camera is switched off and the cable between the IR camera and the computer is NOT connected.
2. Insert the ThermaCAM Connect 3 installation CD into the CD-ROM drive.
3. Select the preferred language and follow the on screen instructions.

NOTE: If the installation program doesn't start when you insert the installation CD, please start the program manually by following the steps below.

1. Double-click **My Computer** on the Desktop.
2. Right-click on your CD-ROM drive and click **Explore**.
3. Double-click SETUP.EXE
4. Select the preferred language and follow the on screen instructions.

1.2.3. Installing USB and FireWire drivers

When the ThermaCAM Connect 3 installation is finished, you have to install the drivers depending on how you connect the infrared camera to your computer.

If you are using serial communication, you can skip this part and continue with the next chapter Transferring images from the camera to the computer.

Before you continue with the installation, have your indow installation CDs available.

Make sure that the ThermaCAM Connect 3 installation CD is inserted into your CD-ROM drive.

If you are using USB or FireWire communication, connect the camera to the computer and turn on the camera.

Windows will now detect the new hardware.

You find the appropriate installations procedure, covered on the following pages, matching your Window operating system and communication standard (USB/FireWire).

1.2.3.1. USB Driver Installation Procedure for Microsoft Windows XP

Step	Action
1	When the system has detected the ThermaCAM, the <i>Welcome to the Found New Hardware Wizard</i> window appears. The wizard asks; <i>What do you want the wizard to do?</i> Select Install from a list or specific location
2	Click Next
3	The next wizard window is displayed; <i>Please choose your search and installation options.</i> Select Search for the best driver in these locations. Uncheck Search removable media Check Include this location in the search Click Browse and locate folder "C:\Program Files\FLIR Systems\Device drivers" Click Ok
4	Click Next
5	The next wizard window is displayed; <i>The driver has not passed Windows Logo testing to verify its compatibility with Windows XP.</i> Click Continue Anyway
6	The wizard copies the necessary driver files to your system.
7	The driver installation procedure is completed. Click finish.
8	Reboot your computer if prompted to do so.

1.2.3.2. USB Driver Installation Procedure for Microsoft Windows 2000

Step	Action
1	When the system has detected the ThermaCAM, the <i>Welcome to the Found New Hardware Wizard</i> window appears. Click Next
2	The next wizard window is displayed; <i>This wizard will complete the installation for this device: FLIR USB Network Adapter.</i> The wizard asks; <i>What do you want the wizard to do?</i> Select Search for a suitable driver for my device.
3	Click Next
4	The wizard asks; <i>Where do you want Windows to search for driver files?</i> Select Specify a location, uncheck all other options.
5	Click Next
6	Click Browse and locate folder "C:\Program Files\FLIR Systems\Device drivers" Click Ok
7	The wizard has now found a driver for the device. Click Next.
8	The next wizard window is displayed; <i>Microsoft has not digitally signed the driver.</i> Click yes to continue
9	The wizard copies the necessary driver files to your system.
10	The driver installation procedure is completed. Click finish.
11	Reboot your computer if prompted to do so.

1.2.3.3. USB Driver Installation Procedure for Microsoft Windows ME

Step	Action
1	When the system has detected the ThermaCAM, the <i>Windows has found the following new hardware: FLIR ThermaCAM. What would you like to do?</i> window appears. Select Specify the location of the driver.
2	Click Next
3	Select Search for the best driver for your device. Uncheck Removable media Check Specify a location Click Browse and locate folder "C:\Program Files\FLIR Systems\Device drivers" Click Ok
4	Click Next
5	Click Next
6	If you get version conflict questions, Click Yes.
7	Click Finish
8	Reboot your computer if prompted to do so.

1.2.3.4. USB Driver Installation Procedure for Microsoft Windows 98

Step	Action
1	When the system has detected the ThermaCAM, the <i>This wizard searches for new drivers for: FLIR USB Network Adapter</i> window appears. Click Next
2	The wizard asks; <i>What do you want Windows to do?</i> Select Search for the best driver for your device.
3	Click Next
4	Uncheck Floppy disk drives Uncheck CD_ROM drive Check Specify a location Click Browse and locate folder "C:\Program Files\FLIR Systems\Device drivers" Click Ok
5	Click Next
6	Click Next
7	Insert Windows 98 CD-ROM if prompted to do so.
8	Click Finish
9	Reboot your computer if prompted to do so.

1.2.3.5. FireWire/1394 Driver Installation Procedure for Microsoft Windows XP

Step	Action
1	When the system has detected the ThermaCAM, the <i>Welcome to the Found New Hardware Wizard</i> window appears. The wizard asks; <i>What do you want the wizard to do?</i> Select Install from a list or specific location
2	Click Next
3	The next wizard window is displayed; <i>Please choose your search and installation options.</i> Select Search for the best driver in these locations. Uncheck Search removable media Check Include this location in the search Click Browse and locate folder "C:\Program Files\FLIR Systems\Device drivers" Click Ok
4	Click Next
5	The next wizard window is displayed; <i>The driver has not passed Windows Logo testing to verify its compatibility with Windows XP.</i> Click Continue Anyway
6	The wizard copies the necessary driver files to your system.
7	The first driver installation procedure is completed. Click finish.
8	Welcome to the Found New Hardware Wizard window appears again. Repeat step 1 to 7. After that the driver installation is complete.
9	Reboot your computer if prompted to do so

1.2.3.6. FireWire/1394 Driver Installation Procedure for Microsoft Windows 2000

Step	Action
1	When the system has detected the ThermaCAM, the <i>Welcome to the Found New Hardware Wizard</i> window appears. Click Next
2	The next wizard window is displayed; <i>This wizard will complete the installation for this device: FLIR 1394 Network Adapter.</i> The wizard asks; <i>What do you want the wizard to do?</i> Select Search for a suitable driver for my device.
3	Click Next
4	The wizard asks; <i>Where do you want Windows to search for driver files?</i> Select Specify a location, uncheck all other options.
5	Click Next
6	Click Browse and locate folder "C:\Program Files\FLIR Systems\Device drivers" Click Ok
7	The wizard has now found a driver for the device. Click Next.
8	The next wizard window is displayed; <i>Microsoft has not digitally signed the driver.</i> Click yes to continue
9	The wizard copies the necessary driver files to your system.
10	The first driver installation procedure is completed. Click finish.
11	Welcome to the Found New Hardware Wizard window appears again. Repeat step 1 to 10. After that the driver installation is complete.

1.2.3.7. FireWire/1394 Driver Installation Procedure for Microsoft Windows ME

Step	Action
1	When the system has detected the ThermoCAM, the <i>Windows has found the following new hardware: FLIR ThermoCAM_R3. What would you like to do?</i> window appears. Select Specify the location of the driver.
2	Click Next
3	Select Search for the best driver for your device. Uncheck Removable media Check Specify a location Click Browse and locate folder "C:\Program Files\FLIR Systems\Device drivers" Click Ok
4	Click Next
5	Click Next
6	If you get version conflict questions, Click Yes.
7	Click Finish
8	<i>Windows has found the following new hardware: FLIR ThermoNET_R2</i> window appears.
9	Repeat Step 1-4,6-7
10	Reboot your computer if prompted to do so.

1.2.3.8. FireWire/1394 Driver Installation Procedure for Microsoft Windows 98

Windows 98 doesn't support Plug and Play for FireWire. After you have connected the camera follow the instructions below.

Step	Action
1	Click Start-Settings-Control Panel in order to start the Control Panel
2	Double-click on <i>Add New Hardware</i>
3	Click Next
4	Click Next
5	Select Yes, the device is in the list and select the FLIR ThermoCAM_R3 device. Click Next
6	Click Finish
7	Click Reinstall Driver
8	Click Next
9	Select Search for a better drive than the one your device is using now Click Next
10	Check Specify a location. Uncheck all other options.
11	Click Browse and select folder C:\Program Files\FLIR Systems\Device drivers Click Ok
12	Click Next
13	Click Next
14	Insert Windows 98 CD-ROM if prompted to do so.
15	If you get version conflict questions, Click Yes.
16	Click Finish
17	Click Close
18	Repeat Step 1 to 17 for the FLIR ThermoNET_R2 device.
19	Reboot your computer if prompted to do so.

1.3. Operation

1.3.1. Transferring the images from the camera to the computer

ThermaCAM Connect 3 transfer application is started automatically when you connect the infrared camera using USB or FireWire.

If you connect the infrared camera using serial communication (RS232), you have to start ThermaCAM Connect 3 transfer application manually. You will find ThermaCAM Connect 3 in the Start-menu.

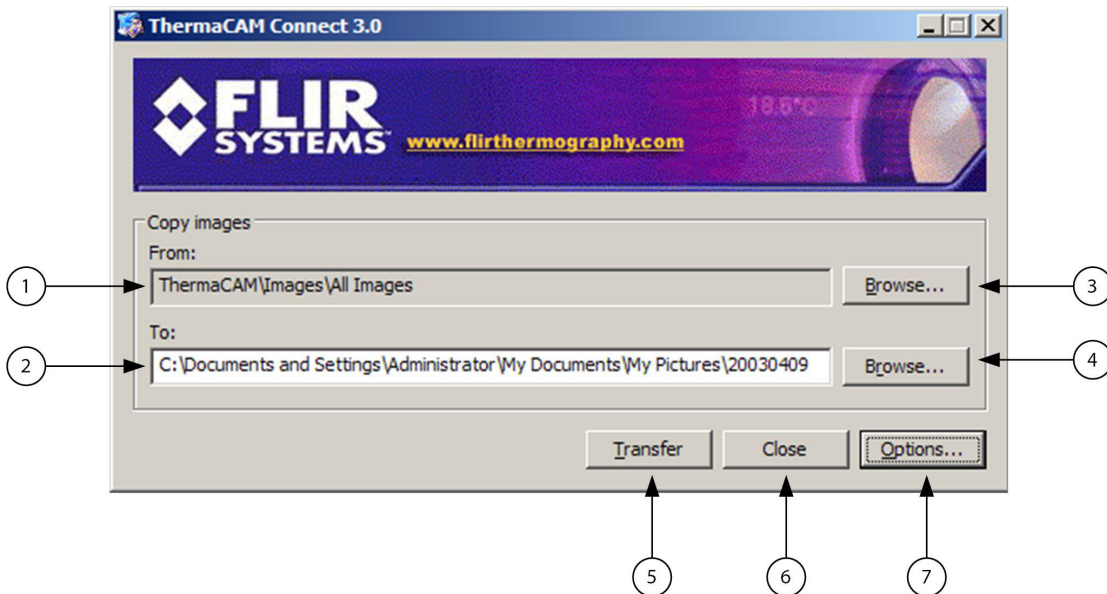


Figure 1 Image transfer application

The ThermaCAM Connect 3 transfer application makes it possible to transfer all images from the camera by clicking on the Transfer button (callout 5). Below is a more detailed description of the different controls.

Callout	Explanation
1	Where the images are copied from in the camera. By default all images in the internal camera memory will be copied.
2	Folder on your computer the images transferred.
3	Click here to select images you want to transfer.
4	Click here to browse for a folder on your computer where the transferred images will be stored.
5	Click here to transfer images from the infrared camera to your computer.
6	Click here to close the application
7	Click here to open an Options dialog where different options, controlling how the application operates, can be chosen.

1.3.2. Transferring all images from the internal camera memory

When the application starts all images in the internal camera memory (but not subfolders) are selected for transfer.

If you want to all images, the only thing you have to do is to click the Transfer button (fig 1, callout 5) and the transfer of images from the infrared camera will begin.

If you want to change folder on your computer the images copied, click the Browse button (fig 1, callout 4).

When you click the Transfer button (fig 1, callout 5) a new window will open indicating the transfer process and show a preview of the transferred images.

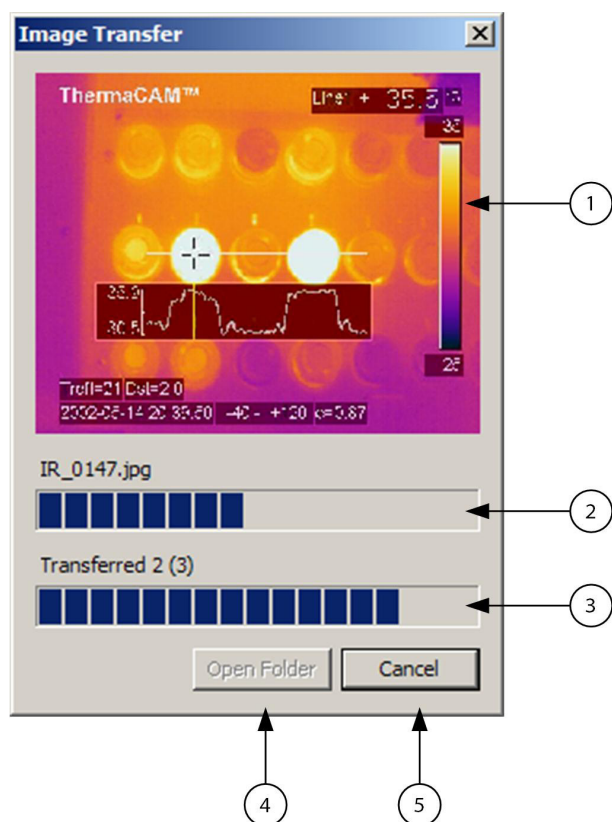


Figure 2 Image transfer

Callout	Explanation
1	Preview of images transferred to your computer.
2	Progress indicator for current image.
3	Progress indicator for all images.
4	Click here to start Windows Explorer showing images transferred to your computer. This button will be enabled when image transfer is completed.
5	Click here interrupt the image transfer..

If you click the Open Folder button (fig 2, callout 4) the application will terminate and a Windows Explorer window will open showing you all files in the folder you transferred your images.

1.3.3. Transferring a selection of images or images from another folder

If you want to transfer only a selection of images or images from another folder you can click Browse button (fig 3, callout 3) and select images.

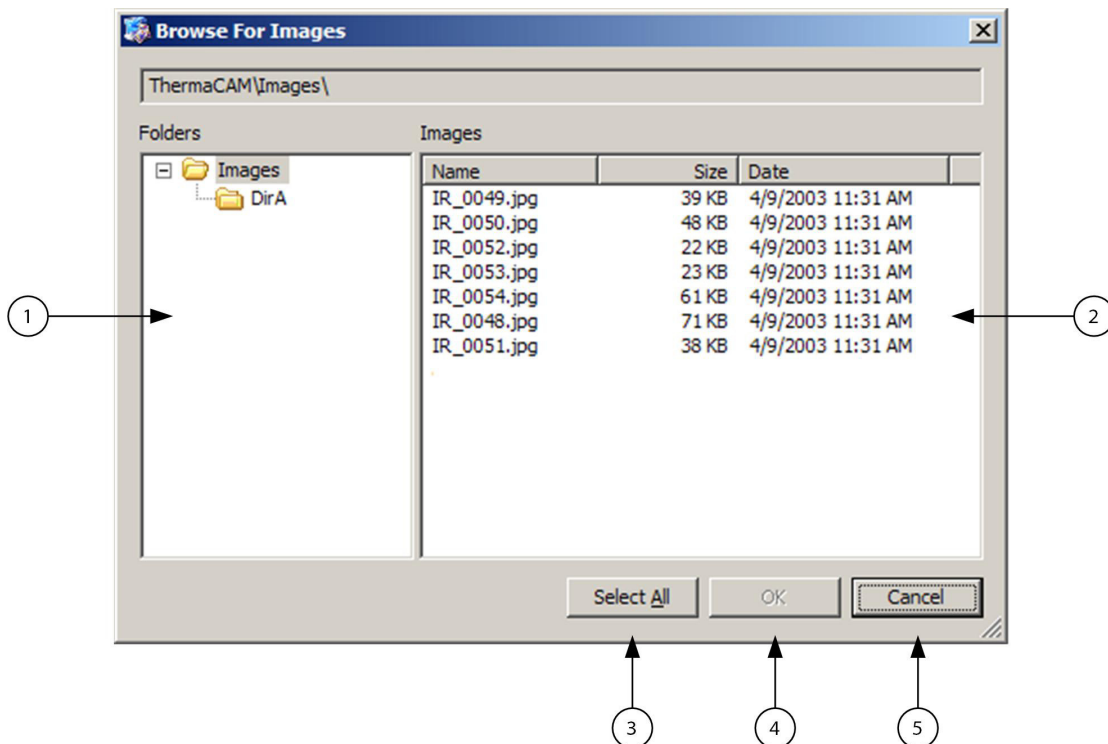


Figure 3 Browse for images

Callout	Explanation
1	Folders in the camera memory.
2	Images in the selected folder.
3	Click here to select all images in the list.
4	Click here close this window and return to the application main window. The images you selected will be marked for transfer and copied to your computer when you click the Transfer-button.
5	Click here to close this window select any images.

In the Browse For Images window you can see all the folders in the camera and select the images you want to transfer. It is possible to click on the Name, Size and Date columns to sort the images. To select more than one image do the following; Pressing SHIFT and clicking the mouse, or pressing SHIFT and one of the arrow keys, extends the selection from the previously selected item to the current item. Pressing CTRL and clicking the mouse selects or deselects an item.

When you finished selecting images click OK (fig 3, callout 4) to close the Browse for images dialog. ou can click the Transfer button (fig 1, callout 5) to start transferring the selected images.

1.3.4. Program options

There are a few options in ThermaCAM Connect 3 that you can change. Click on the Options button (fig 1, callout 7) in the main window to open the Options dialog.

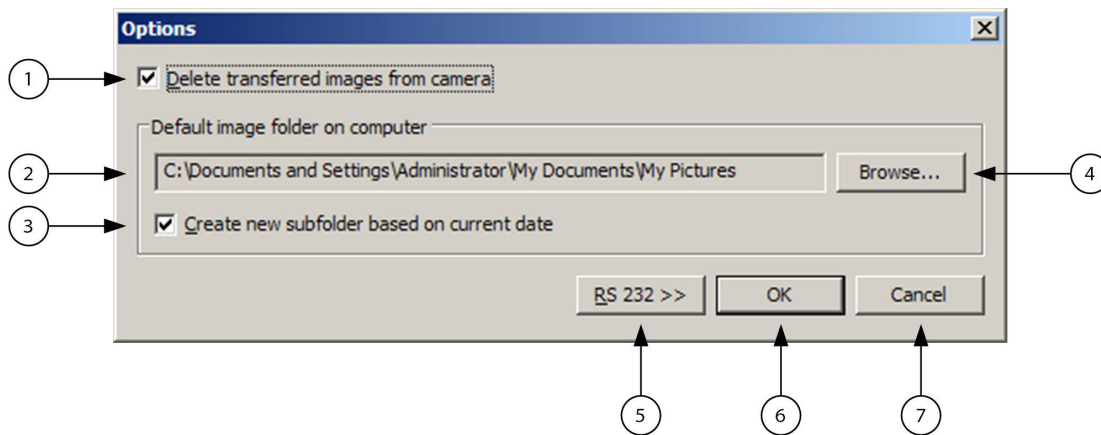


Figure 4

Options

Callout	Explanation
1	If this option is checked transferred images will be deleted from the infrared camera. You will be asked the images.
2	Default folder on your computer where the images will be transferred.
3	If this option is checked a subfolder to the default image folder will be created. The subfolder will have the same name as the current date and your images will be transferred to that subfolder.
4	Click here to browse for a new destination folder.
5	Click here to expand the dialog and show serial communication settings.
6	Click here to close the dialog and save the options.
7	Click here to close the dialog and discard all changes you have made in the dialog.

If you are using serial communication (RS232) click the RS 232 button (fig 4, callout 5) in order to expand the Options dialog and set options for serial communication (RS232).

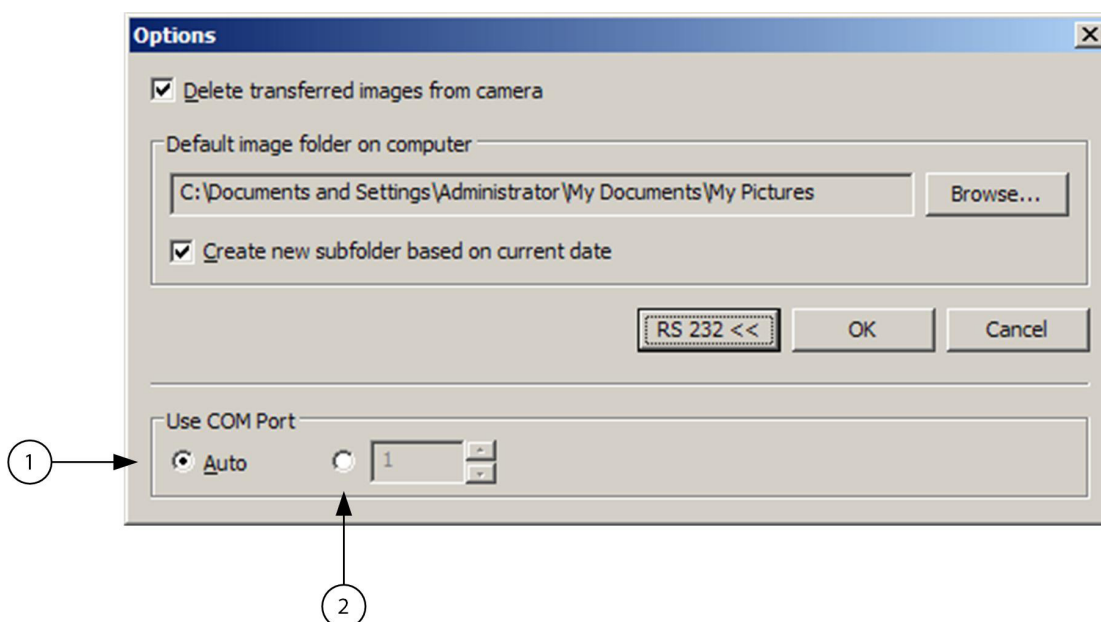


Figure 5 RS232 Options

Callout	Explanation
1	Select Auto if you want the program to automatically search COM port 1 to 9 for an infrared camera.
2	Select this radio button to manually enter a fixed COM port number . The automatic search is now disabled.

Click the RS 232 button (fig 4, callout 5) again to contract the dialog.

1.3.5. Auto detect

When a camera is plugged in to the computer it is automatically detected by ThermaCAM Connect 3.

The auto detect does NOT work when using serial communications (RS232), it works ONLY for USB or FireWire

Connection:



1.	When a connection is in the process of being established between the camera and the computer, a notification window pops up.
2.	A few seconds the connection has been established, a new notification window pops up.

Disconnection:



3.	When the camera from the computer, a notification window pops up.
4.	A few seconds the camera has been disconnected, the notification window disappears.

1.3.6. Starting Transfer application

The ThermoCAM Connect 3 Transfer application starts as soon as an infrared camera is connected to the computer. This USB or FireWire, NOT serial communication (RS232).

For more information about the transfer application see chapter 1.3.1.

If ThermoCAM Connect 3 Transfer application is closed, you can easily bring it back up again by right clicking the small camera icon (fig 6, callout 1).



Figure 6.

1.	Click here to bring up the ThermoCAM Connect 3 Transfer application
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Or you can start the transfer application from Windows Start menu (fig 7, callout 1)

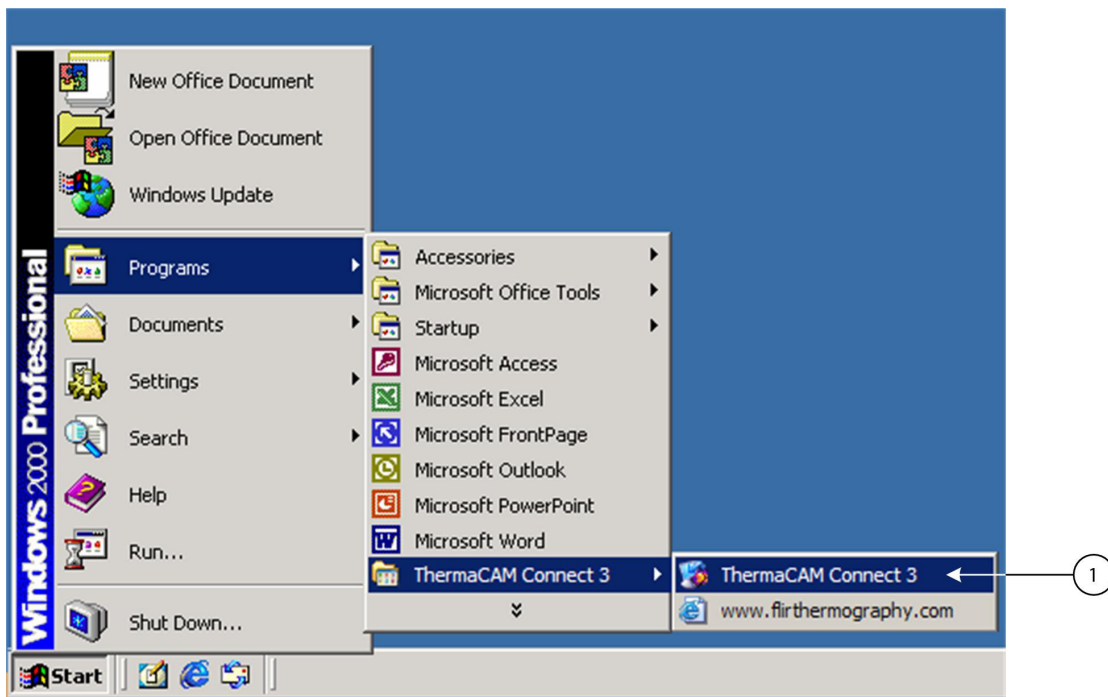


Figure 7.

- | | |
|----|---|
| 1. | Click here to bring up the ThermoCAM Connect 3 Transfer application |
|----|---|

1.4. Support

1.4.1. Information

You can access up-to-date FAQ (Frequently Asked Questions) and software updates at FLIR website:

<http://www.flirthermography.com>

1.4.2. Troubleshooting

1.4.2.1. General

Before you start troubleshooting:

- Make sure you have the latest drivers, download them from the website.
- Verify that the problem is possible to repeat by rebooting the camera and the PC, follow these steps
 - 1) Disconnect the camera from the PC by un-plugging the cable.
 - 2) Reboot the camera.
 - 3) Reboot the PC
 - 4) Connect the camera to the PC by plugging-in the cable

If the problem , check if any of the below or at the website match your problem.

1.4.2.2. Problems when trying to communicate with the camera

If Connect 3 is not successful communicate with the camera using serial, USB or it behaves:

- The transfer application displays the error message; *Cannot connect to camera. Make sure the camera is connected to your computer. If you are using serial communication make sure the COM port is available.*
- The different notification windows, mentioned in chapter 1.3.5, will not be displayed.

If the software in the camera does not meet the requirements, as stated in chapter 1.2.1.1, the behavior above will be experienced. The problem is resolved by upgrading the camera.

1.4.2.3. Problems when connecting the IR camera using USB (Universal Serial Bus) or FireWire

On Windows 2000/XP, only administrators and users with appropriate rights may load/unload device drivers. To enable users to connect to the camera, you should *either* give them Local Administrator Rights or change the Local Security Policy.

Give a user local administrator rights

You need to be logged in as administrator (or as user with administrator rights)

Step	Action
1	Open the Control Panel by selecting Start Menu -> Settings -> Control Panel .
2	Double click on Administrative Tools .
3	Double click on Computer Management .
4	Open Local Users And Groups by double clicking on it.
5	Select Groups and double-click on Administrators.
6	Add the relevant users, or the name of a group containing the right users.

Give a user rights to load/unload device drivers

You need to be logged in as administrator (or as user with administrator rights)

Step	Action
1	Open the Control Panel by selecting Start Menu -> Settings -> Control Panel .
2	Double click on Administrative Tools .
3	Double click on Local Security Policy .
4	Open Local Policies by double clicking on it.
5	Select User Rights Assignment .
6	Find Load and Unload Device Drivers and double-click on it.
7	Add the relevant users, or the name of a group containing the right users.

1.4.2.4. Problems when connecting the IR camera using serial communication

If there are one or more applications using the same serial communication port (COM1-9) as the camera is connected to in the PC, the Connect program may fail to setup a successful connection.

If the transfer application fails to setup a serial connection it will display the error message: *Cannot connect to camera. Make sure the camera is connected to your computer. If you are using serial communication make sure the COM port is available.*.. If this error message is encountered, you have to find an application that uses a COM port and disable its use of the COM port.

ActiveSync, used for synchronizing data between a PDA (Personal Digital Assistant) and Windows, is an example of such an application that may cause the problem mentioned above.

1.4.2.5. Camera icon not visible on system tray

When resuming from a password protected screensaver or if you switch user on your Windows XP/2000 computer it could happen that the camera icon on the system tray will not be visible. Disconnect and connect the USB/FireWire cable will make the icon visible.