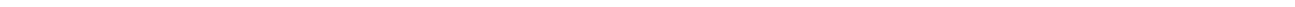




Leica DFC Camera
Software
Release Notes V 7.7.1



Leica DFC Camera

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Abstract

This document describes the V7.7.1 release of the Leica Digital Camera Software for the Leica DFC range of cameras. You should read this document before installing your copy of this software.

Leica DFC cameras use the FireWire interface and the Leica DFC Camera software package includes software and user guides for setting up and using these cameras.

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Part Number: 12879039
Date: April 2013
Issue: 34

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1 Introduction

This document supports the release of Leica DFC Twain version 7.7.1 and supports the following Leica DFC Cameras in Windows:

FireWire A (1394a)	FireWire B (1394b)
DFC280	DFC295
DFC290	DFC290 HD
DFC320	DFC310 FX
DFC300 FX	DFC345 FX
DFC340 FX	DFC360 FX
DFC350 FX	DFC365 FX
DFC420	DFC400
DFC420 C	DFC425
DFC480	DFC425 C
DFC490	DFC450
IC D	DFC450 C
IC 3D	DFC495
	DVM2000
	DVM2500

Please identify the type of camera that you are using before installing the software from this release.

If in doubt, check for the software specific to your camera at the Leica Microsystems website, www.leica-microsystems.com

Uninstall any previous version of Leica DFC Twain before installing a new version.

2 Installation

Operation of the software is detailed in your Quick Start Guide and Image Acquisition Guide and can be found in Start>(All) Programs>Leica Digital Cameras after installation (requires a pdf reader to open files, eg Acrobat Reader).

If you are installing from the LAS DVD, you should be presented with options to install the software or browse the disk.

If auto-run is disabled in your computer or the disk fails to run, open Windows Explorer for the disk and double-click "LASMMenu.exe".

3 Reason for this Release

This version releases new functionality and maintenance that has taken place since the release of version V7.7.0.

4 System Requirements

Supported Microsoft Operating Systems

Windows 7 Professional or Ultimate - 32 and 64 bit

Windows 8 (for desktop PCs) - 32 and 64 bit

Windows XP Professional SP3 - 32bit only

Please use the latest Service Packs.

- Windows Vista is no longer supported

Please Note:

A firmware update is necessary for older 1394a Leica DFC cameras for use in Windows 7 systems.

Drivers for these older cameras with firmware v1.8 are only supported in this software when installing to XP systems. A firmware upgrade tool to v1.9 is included when installing the XP systems - see [Known Limitations](#)

You will need Power User or Administrative rights for installation.

Computer

The minimum PC specification is as follows:

- Processor: Intel Core i-series or Intel Core-Duo at 2.5 GHz
- Memory: 2 GB RAM
- Graphics: 256Mb RAM supporting 32 bit (shared memory is not recommended)
- Display Monitor: 19in @ 1280 x 1024
- DVD drive, or internet connection for download.
- 4-pin or 6-pin FireWire OHCI port - see [Known Limitations](#)

The recommended PC specification is as follows:

- Processor: Intel Core i-series or Intel Core-Duo at 3 GHz or faster
- Memory: 4 GB RAM
- Graphics: 256Mb RAM supporting 32 bit
- Display Monitor: 24in @ 1920 x 1080 (Full-HD)
- DVD drive, or internet connection for download.
- 9-pin FireWire OHCI port (FireWire-B interface) or free PCI-express slot (for addition of FireWire interface).

Notebooks / Laptops

- Laptops and notebooks with PCI Express slots should use the FireWire-B Notebook Kit (12 730 446)

Note:

FireWire B cameras can be connected to FireWire A ports and vice-versa using a bilingual A->B cable (11 600 254).

5 Changes in This Release

5.1 Features in V 7.7.1

Support for Windows 8 for desktop PCs.

5.2 Fixes in V 7.7.1

Leica DFC450 camera: Sometimes the live would stop after making a white balance in colored regions under certain illumination conditions. This is fixed.

6 Changes in Previous Releases

6.1 Features in V 7.7.0

Windows Vista is no longer supported.

Demo camera is no longer part of DFC Twain. (It has its own installer).

Configuration>Reset sets all controls to default settings.

6.2 Fixes in V 7.7.0

Sometimes when the opening the Twain configuration, active camera or create shading window, LAS would hang on close in Windows 7 systems. This is fixed.

6.3 Features in V 7.6.0

Start Menu: The Leica DFC Twain uninstall link from the Start Menu has been removed. The software can still be removed in the Control Panel>Programs and Features (Add/Remove Programs).

Leica FireWire Driver: The Leica FireWire driver installed with this software is version 1.39.0.

Older Leica DFC cameras: A Start Menu link has been added for XP users so that the firmware in older FireWire A cameras can be updated to support Windows 7.

Leica DFC365 FX camera: New Black Balance feature.

6.4 Fixes in V 7.6.0

Auto White level: Fixes brightness error when capturing a series of images.

6.5 Features in V 7.5.0

Leica DFC Cameras: Support for new DVM2500 camera.

Leica Demo camera: Supports adjustment of image brightness.

Leica DFC cameras: Auto-exposure is active at first startup or reset.

Windows Start menu items have moved to Leica Digital Cameras.

DFC Twain now includes the Leica FireWire driver. During the installation process, you will be asked to connect your camera. Once connected, the installation will continue and the Leica FireWire driver will be activated automatically.

Run the Leica FireWire Selector if cameras are attached to other existing FireWire cards or new FireWire cards are added later.

6.6 Fixes in V 7.5.0

Leica DFC Cameras: Sometimes unplugging an active camera would cause LAS to hang if more than one camera was connected, or at LAS close. This is fixed.

6.7 Features in V 7.4.0

Leica DFC Cameras: Support for new DFC450, DFC450 C and DFC365 FX cameras.

Leica DFC500: This camera is no longer in this software.

Please use the Leica DFC500 Twain installation software.

Leica DFC cameras: 1394a cameras with firmware v1.8 are no longer supported when installing to Vista and Windows 7 systems. see [Known Limitations](#)

6.8 Fixes in V 7.4.0

Leica DFC cameras: Color rendition has been improved in 1394b cameras.

Leica DFC cameras: Loss of live image or camera connection. Some issues caused by the instability of the standard Windows FireWire driver have been solved by installing the Leica FireWire Driver. see [Known Limitations](#)

6.9 Features in V 7.3.0

Leica DFC Cameras: FireWire speed displayed in the camera info box.

6.10 Fixes in V 7.3.0

Leica DFC480: Multiple captures sometimes made LAS hang. This is fixed.

Leica DFC360 FX: Shading at some high exposure times caused the application to hang. This is fixed.

Chinese & Japanese characters: These texts now display correctly in other language Windows OS.

Leica DFC500: The image type was not remembered at close. This is fixed.

Leica DFC cameras: When the active camera is disconnected when more than two cameras are connected in LAS, the remaining camera did not always start. This is fixed.

6.11 Features in V 7.2.0

Windows 7: Support for Windows 7 Operating System for Leica DFC cameras.

6.12 Fixes in V 7.2.0

Leica DFC425/495: Drawing the ROI for spot exposure in the lower half of the image sometimes produced no change in brightness. This is fixed.

Leica DFC500: Multi-shot acquisition sometimes failed in LAS with an out of memory error. This is fixed.

6.13 Features in V 7.1.1

New Leica camera: Supports a new color camera Leica DVM2000.

6.14 Fixes in V 7.1.1

Leica DFC290 HD: Adjustment of auto brightness value did not affect the image. This is fixed.

Leica IC D: Image brightness using HSB in 4x4 binning was incorrect. This is fixed.

6.15 Features in V 7.1.0

New Leica DFC cameras: Supports three new color cameras DFC425, 425 C, 495, and a new monochrome camera DFC345 FX.

Language: The DFC500 Twain User Interface can now be switched between languages while it is running.

Leica Demo camera is always installed by default.

6.16 Fixes in V 7.1.0

DFC295: Sometimes occasional images were lost when making a series of rapid captures (eg in LAS Multi-Step or Power Mosaic). This is fixed.

Japanese installer: The last screen of the installer in Japanese produced incorrect text, and is now fixed.

Japanese and Chinese text was not always displayed correctly in the Twain UI. This is fixed.

6.17 Fixes in V 7.0.1

Shading references: Shading references sometimes failed or produced incorrect images especially in binning formats. This is fixed.

Swedish: Start-up of Leica DFCTwain on Swedish Windows produced an error message. This is fixed.

6.18 Features in V 7.0.0

Language: The DFCTwain User Interface can be switched between languages while it is running. This applies to all DFC cameras except the DFC500.

Task bar icon: There is a new Windows task bar icon while DFCTwain is running. This is in addition to the icon for the host application.

Captured Image: For DFC cameras with binning formats, the image is now captured at the same brightness as the live image, and applies if High Sensitivity Binning is on or off.

Image Exposure: The displayed exposure time is now the real value applied to the captured image. The exposure applied to the live may be different to the displayed exposure, depending on binning format and High Sensitivity Binning.

Black and White Levels: In common with Leica Application Suite, black and white levels are now displayed in the range 0 – 255 (and no longer 0 – 100). The maximum value of 100 in previous versions is the same level applied in the latest version with the new maximum of 255.

6.19 Fixes in V 7.0.0

Auto White Level: If HQ mode was selected, the auto-white level jumped to a low value. This is fixed.

6.20 Features in V 6.12.1

Leica DFC Cameras: New capture software signal to enable earlier movement of automated microscope hardware. Applies to all DFC cameras except the DFC500.

Camera configurations: A new option to save the current configuration without having to specify a new configuration name.

6.21 Fixes in V 6.12.1

Auto Exposure: Some cameras defaulted to a maximum 300 ms and this is fixed. The default maximum is 1 second, except for the DFC290 HD which is 300ms.

Leica DFC310 FX: When making a shading reference on a colour image, the image switched to monochrome. This is fixed.

Acquire button: Sometimes if the button was clicked more than once, this resulted in the application freezing. This is fixed.

6.22 Features in V 6.12.0

New Leica DFC Cameras: Support for Leica DFC295 and DFC310 FX cameras. These cameras have a 1394b connector, and require a 1349b cable connected to a 1394b FireWire port, or an A->B cable connected to a 1394a port.

Leica IC 3D: F7 key captures a pair of stereo images labelled "L" & "R".

Leica DFCTwain "Extra" tree is now available by a mouse Right-Click alone.

6.23 Fixes in V 6.12.0

Leica DFC Twain: Some installations did not update the camera software correctly. This is fixed.

Leica DFC500: Auto exposure at start-up was not always applied correctly. This is fixed.

Shading files are now created and loaded for each serial number-specific camera.

Long exposures over 3.9 seconds in 1394b cameras were captured as black. This is fixed.

White Balance produced some erratic results especially in dark areas. This is fixed.

6.24 Features in V 6.11.0

New Leica DFC Cameras: Support for Leica DFC400 and DFC290 HD cameras. These cameras have a 1394b connector, and require a 1349b cable connected to a 1394b FireWire port, or an A->B cable connected to a 1394a port.

New Demo Camera: Ability to show Leica DFC Twain without specific camera hardware.

6.25 Fixes in V 6.11.0

Leica DFC500: With a shading reference active, changing the color balance caused the shading to become inactive. This is fixed.

Leica DFC290: Calibration in UXGA format was incorrect. This is fixed.

Leica DFC Twain: Some installations did not update the camera software correctly. This is fixed.

6.26 Features in V 6.10.1

Image Capture: Improved image capture progress feedback.

6.27 Features in V 6.10.0

Leica DFC360 FX: This version introduces the Leica DFC360 FX.

This camera has a 1394b (800 Mb/s) FireWire connector, but can run on an existing 1394a port with an A->B cable.

Vista: This version fully supports Windows Vista (32-bit and 64-bit Operating Systems).

64-bit Operating Systems: Existing DFC cameras require a minimum firmware 1.9.0 to be recognised on any Vista or XP 64-bit operating systems. (The current firmware version for existing DFC cameras is 1.8.0.)

An upgrade tool is included. The upgrade must be done on a 32-bit operating system before attempting to connect the camera to a 64-bit system.

See [Known Limitations](#).

Version information: Camera library and firmware versions are displayed in the Twain version information.

6.28 Fixes in V 6.10.0

Shading: Creating shading references caused random unexpected behaviour in DFC cameras. This is fixed.

High Sensitivity Binning: In Leica DFC FX cameras, by default this is now set to off, so that binned and non-binned modes appear as the same brightness.

6.29 Versions V 6.9.0 and earlier

These versions did not fully support Vista or 64 bit operating systems. Please ask Leica support for any further information.

7 Known Limitations

7.1 Windows 7 and 1394a cameras

Windows 7 and above have security levels which are different to Windows XP.

In order to install older Leica DFC 1394a cameras in Windows7, it is necessary to update the camera firmware to version v1.9 and applies to the following Leica DFC cameras only:

- 280, 290, 300 FX, 340 FX, 350 FX, 320, 420, 480, 490, IC D, IC 3D.

Please note:

- It is not necessary to update the firmware for continued use on Windows XP.
- It is not necessary for 1394b cameras.
- After updating the camera firmware, the camera will only work with Leica DFC Twain v6.10.0 or later, for both 32-bit and 64-bit operating systems.
- This operation can only be done when installing to XP systems and a firmware upgrade tool is only provided when installing to XP systems. It is not available when installing to Windows 7 systems.

Update procedure

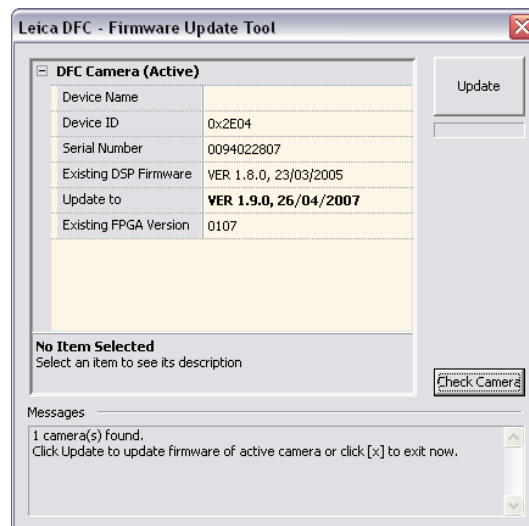
The firmware update can be done in the following way (on XP systems only):

After installing Leica DFC Twain, connect the camera you wish to update, to the computer.

Close any application that may be using the camera.

Start the updater program *DFCfwupdate.exe*, located in
~:\WINDOWS\twain_32\Leica DC\DFC6:

You will be presented with the following window:



If *Existing DSP Firmware* version shows less than 1.9.0, the status message will show "Click Update to update firmware...". Click the *Update* button and follow the instructions. Otherwise click [x] to abort the updating process.

Do not interrupt and do not unplug the camera during the updating process until you are asked to do so.

It is part of the process to unplug the camera briefly. After reconnecting the camera, you will be presented with a new Found New Hardware Wizard. Click *Next* and install the software automatically.

If successful, you can check that the new firmware version 1.9.0 is displayed, by clicking *Check Camera*.

At the end of the process, click [x] to exit. You can now use the camera.

If the update fails in some way please contact Leica support with details at: di.support@leica-microsystems.com



7.2 FireWire controllers

Controller Cards

Depending on the type of camera, a powered 1394a 6-pin or 1394b 9-pin FireWire OHCI port is required for use with Leica DFC cameras. As FireWire interface boards from some manufacturers have issues with non-Leica drivers, we recommend the use of the FireWire boards in the list below.

Please note that you will also need the FireWire -b-b cable (11 600 269), if both camera and PC have a 1394b (FireWire -b) connector.

The following cards are recommended:

Leica Art Nr		Manufacturer Model	Ports, Type of Card, Chipset
12 730 447		IOI, FWB-PCIE1x20	2 x 1394b, PCI-express, low profile, Agere-chipset
11 600 274		IOI, FWB-PCI 02	2 x 1394b, PCI-64, Texas Instruments chipset

All DFC cameras (except FX cameras) are supplied with a suitable FireWire cable.

A bilingual FireWire cable a-b (11 600 254) is required if the camera has a FireWire-b port.

The FireWire 1394b Notebook kit (12 730 446) is needed for notebooks which have a PCI Express slot but do not have an on board FireWire port. A FireWire cable b-b (11 600 269) is required if the camera has a FireWire-b port.

The electronic circuits on the PCI card and the circuits of your computer are sensitive to static electricity and surges.

Take the following precautions:

- Switch off your computer and all peripheral equipment (including the monitor).
- Pull out the power cord.

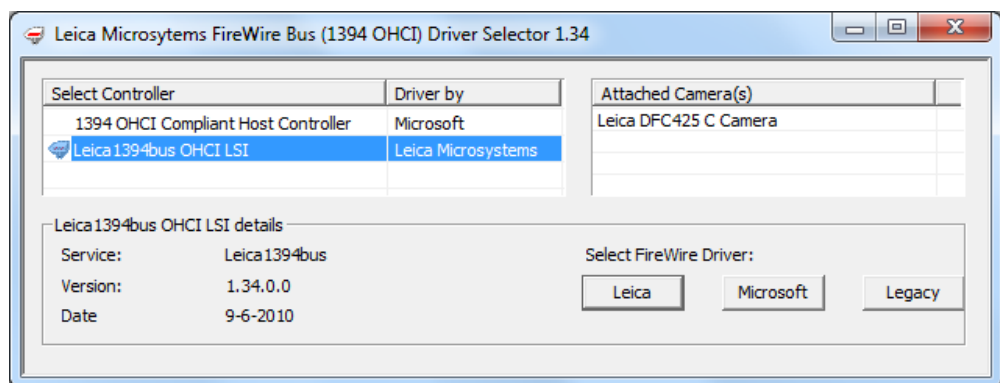
- Open the computer case in accordance with the instructions provided by the manufacturer.
- Discharge static electricity from your body by touching an earthed metal object before installing the PCI card.
- Avoid touching the components, conductor paths and contact pins.
- Find a suitable vacant PCI slot and remove the slot cover if still attached.
- Carefully insert the PCI card into the slot.
- Ensure that the card is correctly inserted, that all pins on the card have made contact and that the PCI card does not touch any other card.
- Connect the PCI card to the computer's internal power supply.
- Secure the PCI card to the computer with a screw or retaining bracket.
- Close the computer case in accordance with the instructions provided by the manufacturer.
- Reconnect the power cord.

FireWire Drivers

The Leica FireWire Driver is a replacement for the default Windows FireWire driver for OHCI 1394 Host Controllers. It fixes some potential instability in the Microsoft driver resulting in the loss of camera live image or connection.

This installer installs a FireWire driver application which gives you the option to select the Leica driver, or revert to the Microsoft driver, or, in Windows 7 systems, the Microsoft Legacy driver.

Once installed, the application can be started by opening Start>(All)Programs>Leica Digital Cameras>Select Leica FireWire driver.



7.3 Leica IC 3D & Leica Stereo Explorer

This camera will not work with Leica Stereo Explorer using Leica DFC Twain v7.0 or newer. Please use earlier versions of Leica DFC Twain.

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