

**Note: Please be sure to uninstall any old “VRmagic USB Camera Development Kit” / “VRmUsbCam DevKit for Windows” on the Windows platform before installing a new one.**

## **VRmUsbCamDevKit 4.5.0 (API v3.5.0.0, 2015/05/18)**

- General
  - Added support for VRmTSC-20, VRmTSC-20R, and VRmESA-1R

## **VRmUsbCamDevKit 4.4.1 (API v3.4.1.0, 2015/02/20)**

- General
  - VRmD3M6 support added

## **VRmUsbCamDevKit 4.3.6 (API v3.3.6.0, 2015/04/09)**

- Added support for *VRmI3C-x* & *VRmI3FC-x* camera models
- Added support for D3 CPU-board revision 1.2
- Added support for *VRmPXA* board
- Added support for graphics SDK (part of TI EZ SDK) on the D3 platform
- Bugfixes:
  - Fixed Support for User I2C-Channel
  - Fixed D3 comeserver: Accepting connections when camera is already opened

## **VRmUsbCamDevKit 4.3.5 (API v3.3.5.0, 2015/03/05)**

- Added support for VRmI3C OEM
- Increased maximum internal trigger rate to 2000 Hz

## **VRmUsbCamDevKit 4.3.4 (API v3.3.4.0, 2015/01/27)**

- Activated temperature sensor for *VRxx-16/18/20*-based cameras
- Implemented property `PROPID_CAM_TEMPERATURE_F` for *VRxx-16/18/20*-based cameras
- Improved exposure time calculation for *VRxx-16/18/20*-based cameras
- VRmQC-20: customer specific features

## **VRmUsbCamDevKit 4.3.3 (API v3.3.3.0, 2014/12/02)**

- VRmQC-20: customer specific bugfixes

## **VRmUsbCamDevKit 4.3.2 (API v3.3.2.0, 2014/10/13)**

- Release for D3 platforms
- General
  - Added support for VRmESA-1R and VRmTSC-20 boards
- API:
  - Added new function `VRmUsbCamResetDeviceKeyList`
  - Added `VRM_PROPID_CAM_STROBE_OUT_REDUCTION_I` property

- Added VRM\_PROPID\_PROPID\_CAM\_TRIGGER\_EXPOSURE\_REDUCTION\_I property
  - Added VRM\_PROPID\_CAM\_CMOSIS\_TEMP\_RAW\_I property
- Added VM\_LIB for D3 DSP including demo

### **VRmUsbCamDevKit 4.3.1 (API v3.3.1.0, 2014/09/18)**

- Release for D3 platforms
- Fixed minimum hblank parameter for VRmxx-20-based cameras (Aptina AR0134)

### **VRmUsbCamDevKit 4.3.0 (API v3.3.0.4, 2014/08/14)**

- Release for Windows, Linux and D3 platforms
- General
  - Added support VRmxC-20-cameras (Aptina AR0134)
  - Added support for VRmFAVC-2
- API:
  - Added API functions for modifying the UserLUT
  - Added API function WaitForStrobe (D3 only)
  - Removed support for VRM\_PROPID\_GRAB\_READOUT\_ORIGIN\_POINT\_I from VRmxC-14/16/18/20 cameras. Use VRM\_PROPID\_GRAB\_USER\_ROI\_RECT\_I instead (while not grabbing).
- D3-platform:
  - Added “silent boot”-mode for serial console
  - Ethernet updater can backup up to 700MB of user data
  - Added script for updating backend.ini files
  - Firmware: Latest Ubuntu 12.04 security updates
  - SDK: Architecture of camera-dev package changed to armhf
  - Revised demo structure
  - VRmD3C-16/VRmD3C-18:
    - Added support for freerunning-mode
    - Added support for auto-exposure mode (freerunning-mode only)
- Bugfixes:
  - VRmxC-22/VRmxC42: Fixed exposure time setting and corrected minimum exposure time to 46.3μs

### **VRmUsbCamDevKit 4.2.2 (API v3.2.2.0, 2014/05/02)**

- Bug fix release for D3 platform only
  - Fix deserializer lock failure on SC22/42
  - Fixed minor memory leak when opening/closing the camera
  - Fixed possible instability with SC16 and SC18 sensors
  - D3 Firmware:
    - Fixed possible crash when loading HDVPSS firmware
    - HDVPSS: New default video mode: 1080p60
    - Re-enabled USB modules
    - Fixed I2C arbitration lost errors

- Fixed vidin-hw reset bug

## **VRmUsbCamDevKit 4.2.0 (API v3.2.0.0, 2014/03/13)**

- Release for D3 platform only
- Added support for DSP
  - vrm-d3-ezsdk package to cross compile DSP projects
  - added DSP demos projects
  - included vrm-image conversion on DSP
  - vrm-dsp-support script to configure the memory layout
- Extended hardware support
  - included WiFi drivers
  - SPI userspace driver
  - new power saving options (e.g. CPU frequency, unloadable kernel modules for SATA/USB/CAN/Sound/Keyboard)
- Disabled mux for GPIO28 (VRmDR3 1.1)
- Modified Debian package and directory structure
- major improvements to firmware updater
- Resolved problems with AVAHI

## **VRmUsbCamDevKit 4.1.0 (API v3.1.0.7, 2013/11/19)**

- Added support for D3 platform
- VRmUsbCam API & wrappers: added VRmUsbCamUpdateDeviceKeyListEx(VRmBOOL f\_local, VRmBOOL f\_usb, VRmBOOL f\_ethernet) function which lets you specify where to look for devices (use instead of VRmUsbCamUpdateDeviceKeyList(void)).
- VRmUsbCam API & wrappers: added new property CAM\_ACQUISITION\_RATE\_MAX\_F which calculates the maximum frame rate at which the sensor can acquire images with the current configuration (timing, read out mode, etc.). Note: property is tied to individual sensor on a multi sensor camera.
- Camlab: added shortcuts for opening devices (F1-F10) and opening property editor (Alt-E), misc. layout changes
  - added command line options:
    - --console enables console
    - --admin enables admin features (use with caution)
- removed VB6 support
- added C# demo: exposuretrigger
- camlab/camserver: improved network image transfer stability

## **VRmUsbCamDevKit 4.0 (API v3.0.0.9, 2013/03/19)**

- Added support for VRmS-16(/BW) & VRmS-18(/BW) for VRm(D)MFC
- Increased maximum roi for VRmC-3+(/BW), VRm(D)C-12(/BW), VRmC-12+(/BW) & VRmS-12(/BW)
- VRmUsbCam API & wrappers: Added VRmUsbCamLockNextImageEx2 with additional timeout parameter
- VRmUsbCam API & wrappers: Added error codes

## **VRmUsbCamDevkit 4.0beta9 (API v3.0.0.8, 2013/02/26)**

- Fixed bug in external-trigger for *VRmC-16+*
- Windows: Moved SDK from User folder to (x86) common files folder
- VRmUsbCam API on Linux: Removed export of non-VRmagic symbols from shared object

## **VRmUsbCamDevkit 4.0beta8 (API v3.0.0.6, 2013/02/19)**

- Minor bugfixes

## **VRmUsbCamDevkit 4.0beta7 (API v3.0.0.5, 2013/02/13)**

- Added support for *VRmC-16+*

## **VRmUsbCamDevkit 4.0beta6 (API v3.0.0.4, 2013/01/29)**

- Added support for *VRm(D)C-16* & *VRm(D)C-18*
- Added support for Windows x64 & Linux x64 platforms
- Gstreamer source for *VRmD(F)C-X*, *VRmDMFC*
- Added source format UYVY for *VRm(D)AVC-2*
- Added target format UYVY to image converter
- Modifications to the trigger pipeline
  - Dropped combined “external + soft-trigger” trigger mode on all devices
  - Replaced “freerunning-sequential” mode with “internal-trigger” mode for *VRmDC-X* cameras
  - On *VRmDC-X* devices the strobe delay starts with the external/soft trigger signal, thus *VRmDC-X*, *VRmDFC-X* and *VRmDMFC* behave the same
  - On *VRmDC-X* devices in “freerunning” mode the strobe signal represents the sensors Vsync signal when undelayed
- Added PNG write + read methods to API
- Fixed minimum pixelclock on MT9V024 based devices to 13MHz

## **VRmUsbCamDevKit 3.15c (API v2.9.1.7, 2012/10/18)**

- Added support for *VRm(D)AVC-2*
- Fixed crash for *VRmDC-X*, *VRmDFC-X*, *VRmDMFC* during grabber start (CCD-buffer overflow)
- Improved stability of grabbing for *VRm(D)FC-X*, *VRm(D)MFC*
- Fixed image tuple creation for *VRm(D)MFC*
- Added auto blacklevel calibration and blacklevel adjust for *VRm(D)C-12*, *VRmC-12* and *VRmS-12*

## **VRmUsbCamDevKit 3.15b (API v2.9.1.5, 2012/07/12)**

- Added support for *VRmS-9/BW*, *VRmS-12(/BW)* and *VRmS-14(/BW)* sensors for the *VRmMFC* and *VRmDMFC*
- Added support for *VRmC-12+*

- Fixed firmware for *VRmC-14(/BW)*  
**ATTENTION:** This and newer versions of the VRmagic SDK require firmware version 22.05 or newer
- *VRmDC-X(-E)*: Fixed behavior of external trigger in level trigger mode

### VRmUsbCamDevKit 3.15a (API v2.9.1.3, 2012/06/06)

- Increased image data rate of following products: *VRmFC-22(/BW)*, *VRmFC-42(/BW)*, *VRmDFC-22(/BW)*, *VRmDFC-42(/BW)*
- Names of log files written by CamLab now contain the current date, time & process id to improve logging of multiple instances running simultaneously
- Introduced new function to API: *VRmUsbCamEnableLoggingEx* allows the user application to define the file name & location of the log file
- Fixed false vsync-timeouts signaled by *VRmFC-22(/BW)*, *VRmFC-42(/BW)*, *VRmDFC-22(/BW)*, *VRmDFC-42(/BW)*
- Fixed framecounter and timestamp in case of overtriggering for following products: *VRmMFC*, *VRmDMFC*
- Removed unsupported format properties for *VRmC-3+*
- Fixed strobe in free-running mode for: *VRmDC-8*, *VRmDC-9/BW*, *VRmDC-12(/BW)*, *VRmDC-14(/BW)*
- Fixed bug for *VRmDC-9*, *VRmDC-14(/BW)*, *VRmC-14(/BW)*: Some settings can lead to unrecoverable errors when opening the device

### VRmUsbCamDevKit 3.15 (API v2.9.1.1, 2012/04/13)

- Added high-dynamic mode for cameras using *VRmMS-12* sensor-boards
- Improved image quality for cameras using *VRmMS-12* sensor boards
- Added support for the *VRmDC-E* camera platform
- Added support for *VRmC-8 -E*, *VRmC-9 -E*, *VRmC-12-E*, *VRmC-14-E*
- Added support for *VRmDC-8*, *VRmDC-9*, *VRmDC-12*, *VRmDC-14* with *VRmDR2* CPU-board
- Added support for new USB-backend for OEM-cameras using horizontal USB connector and Hirose DF14 for trigger/strobe/power and USB-backend PRO-cameras with MPE-Garry for trigger/strobe/power
- Added support for external sensor boards *VRmS-8*, *VRmS-9*, *VRmS-12(/BW)* and *VRmS-14(/BW)* (for single sensor cameras)
- Improved stability of *VRmFC-22(/BW)*, *VRmFC-42(/BW)*, *VRmDFC-22(/BW)*, *VRmDFC-42(/BW)*
- Added support for new camera serials. Added new API function *VRmUsbCamGetSerialString()*

### VRmUsbCamDevKit 3.14f (API v2.8.1.6, 2012/01/31)

- Fixed support for first generation of *VRmDC-12*
- Fixed properties of type Double in Matlab wrapper
- VM\_LIB for ARM: fixed saving of BMP files
- Introduced Ethernet-firmware updater for *intelligent cameras*

- Fixed line-defect during readout for following devices:  
*VRmFC-22(/BW), VRmFC-42(/BW), VRmDFC-22(/BW), VRmDFC-42(/BW)*

### **VRmUsbCam DevKit 3.14d (API v2.8.1.4, 2011/12/23)**

- Improved stability of following devices:  
*VRmFC-22(/BW), VRmFC-42(/BW), VRmMFC, VRmDFC-22(/BW), VRmDFC-42(/BW), VRmDMFC*
- Added function to obtain local IP-address (VRmUsbCamGetLocalIpAddress)

### **VRmUsbCam DevKit 3.14c (API v2.8.1.3, 2011/11/25)**

- Re-added support for usb streaming cameras and VRmDC-8/9/12
- Fixed bluescreen in Windows USB WDM Driver, update to v1.0.9.8
- Added CAM\_LAST\_EXTERNAL\_TRIGGER\_TIMESTAMP\_D property on following devices:  
*VRmFC-22(/BW), VRmFC-42(/BW), VRmMFC, VRmDFC-22(/BW), VRmDFC-42(/BW), VRmDMFC*
- Added CAM\_TRIGGER\_MSARE1\_RRO\_\* properties on following devices:  
*VRmMFC with VRmMSARE1*
- Added functions for properties of type double

### **VRmUsbCam DevKit 3.14b (API v2.8.1.2, 2011/10/13)**

- Added VRmUsbCam C++ Wrapper and demo
- Added support for DVI output via VRmVC1 board for following devices:  
*all intelligent cameras with VRmCUEO1 backend*

### **VRmUsbCam DevKit 3.14a (API v2.8.1.1, 2011/09/23)**

- Removed auto-include of vrmusbcam2l.h (and vrmusbcam2win32.h) in vrmusbcam2.h

### **VRmUsbCam DevKit 3.14 (API v2.8.1.0, 2011/08/15)**

- Added possibility to access group id of a device key (VRmUsbCamGetGroupId)

### **VRmUsbCam DevKit 3.14 BETA10 (2011/08/12)**

- Shortened the "Source format list" to a single "Source format" which is now adjustable via the property interface (GRAB\_SOURCE\_FORMAT\_E, GRAB\_USER\_ROI\_RECT\_I respectively GRAB\_AVC\_\*) on  
*ALL DEVICES*
- This "Source format" is now adjustable individually per sensor on the following devices:  
*VRmMFC, VRmDMFC*
- Added support for "Sensor Plug & Play (PnP)" on the following devices:  
*VRmMFC, VRmDMFC*
- Reset all "User ROI" configurations to the max value (=full sensor size) on  
*ALL CAMERAS*

- Changed default configuration of Gamma to 1.0 (was 1.2 before), this affects only new produced devices of  
*ALL CAMERAS*

### **VRmUsbCam DevKit 3.14 BETA8 (2011/07/22)**

- Reworked NAND infrastructure and added support for 4-bit ECC chips in the firmware (boot loaders and Linux) on following devices:  
*VRmDC-8, VRmDC-9/BW, VRmDC-12(/BW), VRmDC-14(/BW), VRmDFC-22(/BW), VRmDFC-42(/BW), VRmDMFC*
- Added extended debug information on following devices:  
*VRmFC-22(/BW), VRmFC-42(/BW), VRmMFC, VRmDFC-22(/BW), VRmDFC-42(/BW), VRmDMFC*
- Added support for alternating exposure times on following devices:  
*VRmFC-22(/BW), VRmFC-42(/BW), VRmDFC-22(/BW), VRmDFC-42(/BW)*

### **VRmUsbCam DevKit 3.14 BETA7 (2011/07/14)**

- Added support for following devices:  
*VRmMFC with VRmMSARE1 for up to 2 RE sensors*
- Added Burst Mode for Trigger (CAM\_TRIGGER\_BURST\_COUNT\_I) and Strobe (CAM\_STROBE\_BURST\_COUNT\_I) on following devices:  
*VRmMFC, VRmDMFC, VRmFC-22(/BW), VRmFC-42(/BW), VRmDFC-22(/BW), VRmDFC-42(/BW)*

### **New features and incompatibilities of VRmUsbCam DevKit 3.14 BETA6 compared with any 3.13 Release or the previous 3.14 BETA1 (2011/05/25)**

- Removed support for following devices:  
*VRmC-3, VRmC-6(/BW), VRmFC-4(/BW), VRmFC-6(/BW), VRmFC-8, VRmFC-9/BW, VRmFC-12(/BW), VRmFAVC-1*
- Added support for following devices:  
*VRmDMFC with up to 4 external sensors (VRmMSC12)*
- Added basic support for following devices:  
*VRmC-14(/BW), VRmDC-14(/BW), VRmFC-22(/BW), VRmFC-42(/BW), VRmDFC-22(/BW), VRmDFC-42(/BW)*
- Removed “Standard” formats” (VGA, XGA, etc.) and all subsampling formats on  
*ALL CAMERAS*
- All remaining “Source formats” match the former “User ROI” formats and differ only by the bit depth per pixel. Size and Origin of the Source Image are always controlled by the GRAB\_USER\_ROI\_RECT\_I property.
- “Source format” is now selectable per sensor on the following devices (currently only in CamLab and not in the API):  
*VRmMFC, VRmDMFC*

- “RLE Image Format” has no longer an end marker in the data stream. “RLE Source formats” are available on the following devices:  
*VRmMFC, VRmDMFC*
- Added possibility to flip the sensor readout (CAM\_READOUT\_FLIP\_H\_B and CAM\_READOUT\_FLIP\_V\_B) and corrected the Sensor Size (=Max value for the ROI Size) to 754x480 (was 754x482 before) for the following devices:  
*VRmC-3+(/BW), VRmC-12(+)(/BW), VRmDC-12(/BW), VRmMFC, VRmDMFC*
- Removed all mirror flags of the “Source format”, please use the new readout flips to compensate this in your application if available:  
*ALL CAMERAS except VRmC-4(+)(/BW)*
- Automatic exposure control of the sensor itself (CAM\_AUTO\_EXPOSURE\_B) replaces the software based functionality (PLUGIN\_AUTO\_EXPOSURE\_B) on following devices:  
*VRmC-3+(/BW), VRmC-12(+)(/BW), VRmDC-12(/BW)*
- The exposure time is now adjustable individually per sensor, the minimal exposure time was fixed and automatic exposure control of the sensor itself is now available on the following devices:  
*VRmMFC, VRmDMFC*
- Real “16bit Source Formats”, using a 10bit -> 16bit LUT which is controlled by the same filter settings as the former 10bit -> 8bit LUT, are available on the following devices :  
*VRmMFC, VRmDMFC*
- Reimplemented deserializer to fix startup problems and robustness during operation on following devices:  
*VRmMFC, VRmDMFC*
- Frame counter is now a real trigger counter, so dropped triggers are visible as dropped frames, on following devices:  
*VRmMFC, VRmDMFC*
- All VRmUsbCam DevKits feature the integration of the VM\_LIB machine vision library, including an optimized version for the DSP on the DaVinci platform and some demos including sources.
- The VRmUsbCam DevKit for Linux features support for udev additional to the still existing support for usbfs.
- The VRmUsbCam DevKit for Windows features the new adaptor for the MATLAB Image Acquisition Toolbox.
- The VRmUsbCam DevKit for Windows includes an improved USB driver installer to ensure proper USB driver updates on Windows Vista x64 and Windows 7 x64 systems.
- The VRmUsbCam DevKit for Windows is built with Visual C++ 2008 SP1, Visual C++ Runtime 9.0 SP1 ATL Security Update and .NET Framework 2.0 and the “property page GUI” is now in a separate DLL. In case you use an own application installer you need to check your dependencies.



## Changelog for versions prior to 3.14

Version 3.13g (01/07/2012)	fixed occasional startup problem of VRmAVC-1(+I/+S) with NXP chip (requires firmware version >= v21.99)
Version 3.13f (10/18/2010)	fixed image order and config import of VRmMFC
Version 3.13e (08/10/2010)	added bayer 10bit format to VRmMFC fixed multithreading issue in "UnlockNextImage"
Version 3.13d (07/28/2010)	added support for VRmC-4+ and VRmC-12+ added support for gray 16bit and BGR 48bit target formats improved startup behavior and added support for RLE compressed bayer format to VRmMFC fixed incompatibility of VRmUsbCamDS with MATLAB
Version 3.13c (06/02/2010)	added possibility to redetect the video standard of VRmAVC-1(+S/+I) in CamLab improved deserializer of VRmMFC
Version 3.13b (05/11/2010)	added support for VRmAVC-1+I improved AVI codec compatibility in CamLab added support for selection of TFF/ BFF formats to VRm(F)AVC-1 (might require a firmware update)
Version 3.13a (04/16/2010)	fixed minor documentation issues
Version 3.13 (04/14/2010)	added support for VRmMFC (Smart Multi-Sensor Camera) added support for ethernet receiving added support for VRmAVC-1+S added support for VRmSM-1 added possibility to lock multiple images of host ring buffer increased usability of CamLab added CamServer application for ethernet transmission
Version 3.12h (07/03/2009)	fixed non working AttachToVRmUsbCamDS fixed timing changes in freerunning sequential mode fixed trigger timeout for VRmFC-x devices fixed maximal pixel clock for VRmFC-6
Version 3.12g (05/06/2009)	added support for binning modes to VRm(F)C-12/BW added support for overclocking to VRmC-3+ and VRm(F)C-12 added support for external sensor models of VRmFC-12 added auto pixel clock for VRmFC-6
Version 3.12f (12/18/2008)	added support for external sensor models of VRmC-12 added support for TTL trigger/strobe of VRmC-8+/VRmC-9+ Rev 1.1 added channel balance plugin to improve image quality of VRmC-9(+) fixed maximum value of trigger timeout property reduced jitter for VRmFC-x cameras
Version 3.12e (11/12/2008)	added property for roi of auto exposure, with default = center 1/9 of image
Version 3.12d (10/21/2008)	added support for VRmC-9+ fixed incompatibility of VRmUsbCamDS with Adobe Flash Media Encoder
Version 3.12c (08/22/2008)	added support for synchronized free-running grabbing mode to VRmC-12
Version 3.12b (07/31/2008)	fixed auto-white balance that was accidentally disabled
Version 3.12a (07/30/2008)	added support for VRmC-8+ added subsampling, auto-exposure and optimized 10bit evaluation for VRmFC-x cameras
Version 3.12 (06/26/2008)	built with VS2005 SP1, Visual C++ Runtime 8.0 SP1, .NET Framework 2.0 (no longer supports Framework 1.x) added redistributables for VRmUsbCam components added support for 32bit applications on Windows XP (x64) and Windows Vista (x64) signed USB driver, as required by Vista (x64) added C++/CLR demo enhanced compatibility of VRMM AVI codec fixed problem of unlit images in free-running and soft/edge triggered modes Device Property Page now runs in its own thread
Version 3.11e (02/22/2008)	added error handling for trigger stalls in all APIs + Demos fixed usb bandwidth problems on Windows Vista
Version 3.11d (02/08/2008)	added device index specific VRmUsbCamDS added VRmUsbCamDS PnP Helper Service

	fixed loading/switching between user ROI configs fixed crashes related to CamLab Viewer
Version 3.11c (09/27/2007)	added support for VRmFC-6(/BW) updated source format list of VRmFC-4/8/9 fixed crash in CamLab with enabled vsync of renderer really fixed installation on Windows 2000
Version 3.11b (08/29/2007)	fixed support for VRmFC-4(/BW) and VRmFAVC-1
Version 3.11a (08/22/2007)	fixed installation on Windows 2000
Version 3.11 (08/01/2007)	added support for VRmFC-4, VRmFC-8, VRmFC-9, VRmFC-12 added RLE compressed source format for VRmFC-x added device callback (C) and events (COM, .NET) fixed user roi of VRmC-3+ and VRmC-12
Version 3.10 (12/14/2006)	added support for VRmFAVC-1 added support for VRmCI enhanced user configs to support 9 different ids added user preferences to CamLab moved USB devices to own device class
Version 3.9a (09/18/2006)	added VRmUsbCamIsFirmwareCompressionRequired added device info box to CamLab
Version 3.9 (09/12/2006)	added image analysis plugin (chessboard + concentric marker) added defective pixel management (DPM) added property for "images ready in host ringbuffer"
Version 3.8 (07/20/2006)	improved precision of strobe output and trigger timeout (might require a firmware update) added free-running sequential mode added support for VRmC-3+(/BW) added blacklevel property to filter adjustable pixel clock for VRmC-12 (5 to 26.6 MHz) fixed VRmUsbCamReloadUserSettings added access to property page gui in C API updated AVI format (only backward compatible) replaced QT-MT334.DLL by static linking
Version 3.7a (06/20/2006)	fixed installation of com objects on vista beta 2 updated target format handling in demos
Version 3.7 (04/27/2006)	added property based configuration interface added support for VRmC-9/BW and VRmC-12(/BW) added properties for converter (flips, BayerHQ, prefer gray), multi channel filter settings (R/G/B), plugins for auto exposure, auto white balance and auto reset level calibration (for VRmC-3 and VRmC-4) added frame counter information to image fixed negative luminance values
Version 3.6b (11/30/2005)	fixed detection of some VRmC-4pro(/BW) v1 cameras
Version 3.6a (11/17/2005)	fixed user roi of VRmC-6pro and VRmC-8pro fixed gains in VRmUsbCamGetSettings8
Version 3.6 (11/10/2005)	changed format of configs stored on device completed support for VRmC-8pro added shutter config (might require a firmware update) added trigger timeout added user data storage (in eeprom) improved user roi handling added YUYV as target format to image converter added config gui to VRmUsbCamDS added frequency adjustment for VRmAVC-1
Version 3.5 (05/30/2005)	added optional High-Quality Bayer Filter added basic support for VRmC-8pro fixed installation of VFW VRmCodec
Version 3.4 (05/12/2005)	added VRmUsbCam COM API v2 added soft trigger (might require a firmware update) added COM/.NET interoperability with VRmUsbCamDS re-designed .NET API v2 to match COM API v2 added source format to load/save settings

Version 3.3a (04/07/2005)	fixed VRmUsbCamCopyImage() function of C API
Version 3.3 (03/18/2005)	added support for VRmC-4pro v2 and VRmC-6pro, added trigger control to C and .NET API, enhanced C API implementation for thread safety, fixed some compatibility issues in VRmUsbCamDS and added access to VRmUsbCamDevice (of C API) for full camera control in DirectShow, CamLab writes AVI Files in OpenDML format (>1 GB), changed default driver queuing mode to multiple internal queues
Version 3.2 (09/14/2004)	added rewritten DirectShow Video Capture Source, restructured this readme & API Manual, enhanced target format handling in API
Version 3.1 (05/27/2004)	added support for VRmC-OEM-1, detect OHCI host controllers, improved graphics card compatibility of CamLab
Version 3.0 (05/12/2004)	added lock/unlock interface to grabber image queue and support for different source image formats (e. g. down-scaled images), added support for different target image formats (e. g. convert to ARGB, BGR, grayscale), added support for VRmAVC-1, changed language for API interface from C++ to C to enable non C++ developers the usage of this API, added power management code to usb wdm driver
Version 2.4a (12/15/2003)	fixed failure of installation on Win2k when destination path contains spaces
Version 2.4 (12/09/2003)	added support for VRmC-4pro/BW, Load/Store(...)Adjustments now also loads/stores Exposure Time, Pixel Clock and Illumination Intensity, Added additional Filter Settings: Luminance and Contrast (also to load and store)
Version 2.3 (10/20/2003):	update to usb driver version 1.0.8.2, removed hostcontroller queuing setting from API, since it is now configured via a registry key
Version 2.2b (09/25/2003):	fixed broken ROI size for VRmC-4pro
Version 2.2a (09/12/2003):	fixed product strings in ScanForDevices() when more than one device is attached
Version 2.2 (08/27/2003):	fixed bluescreen in USB Driver, update to 1.0.7.8, USB 1.0 is now supported, added DirectShow Capture Source
Version 2.1d (07/11/2003):	reverted to VRmagic USB Driver 1.0.7.5
Version 2.1c (07/01/2003):	fixed a bug causing VRmUsbCam not to deal with multiple cameras, added support for Visual C++ 6.0
Version 2.1b (06/27/2003):	added color pattern of raw bayer image to documentation
Version 2.1a (06/12/2003):	Bayerfilter Codec install fixed for Windows 2000
Version 2.1 (05/15/2003):	user adjustments can now be saved on the board added Codec Selection in CamLab improved compatibility of VfW Codec
Version 2.0 (04/28/2003):	turned package into a Windows Installer Package, added .NET Framework support, moved native C++ API (VRmUsbCam) to namespace 'VRmagic', added VRmagic Bayerfilter Codec, added ability to record AVIs in CamLab, added PnP and multiple devices support in CamLab, fixed bluescreen in USB WDM driver
Version 1.5 (04/01/2003):	improved compatibility by adding a workaround for the hostcontroller queue bug ("timeout - error 995"), see pdf for more information
Version 1.4 (03/07/2003):	added support for VRmC-4 Pro
Version 1.3 (02/21/2003):	simplified Library Interface by including grabber functionality, no more usb buffer handling for user
Version 1.2 (02/04/2003):	added CamLab Application, introduced tDeviceId for device indentification

Version 1.1 (01/23/2003): official USB-IF Vendor ID

Version 1.0 (01/22/2003): Initial Public Release.