STAR 3.0 EVM

V-7001

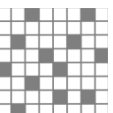# V-650L

V-9501

V-6501
V-9001

Quick Start Guide

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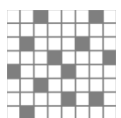P: +49 (0) 371 33 42 47 0

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Read This First

Introduction

The ViALUX ALP-4.3 Controller Suite for use with V4395/V4390 hardware is part of the STAR 3.0 EVM and the SuperSpeed V-Modules V-7001, V-650L, V-9501, V-9601, V-6501, and V-9001. It includes FPGA logic, USB controller firmware, and PC software modules giving the customer instantly high-speed control over the Texas Instruments DLP® chip mirrors. The current version of ALP-4.3 Software is available for download at www.vialux.de/support/download/ALP43_install.exe

### Precautions before Getting Started

Ensure that you have a clean non-conductive work area. The ALP electronics are exposed and are very sensitive to electro-static discharge and rough handling. You should always wear an anti-static discharge device, such as a wrist strap or other properly grounded device, while working with the ALP.

STAR 3.0 EVM Kit Contents

The STAR 3.0 EVM package contains the following items:

- ViALUX STAR 3.0 EVM – Monochrome LED Projection Module
- Two Power Supply Units (one for the V-Module and one for the HLD)
- USB 3.0 SuperSpeed cable: 2 m long, USB 3.0 Standard-A and Micro-B plug
- This Quick Start Guide
- Connector housing and pre-crimped leads for GPIO

For the STAR 3.0 EVM, the additional power supply must be connected to the HLD:
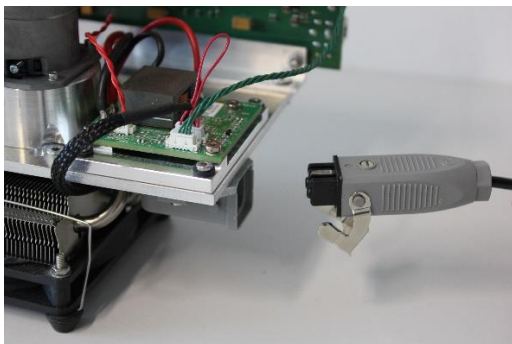

SuperSpeed V-Module Kit Contents

The V-Module package contains the following items:

- V4395 or V4390 printed circuit board assembly, flex cable, and DLP extension board
- Power Supply Unit (an additional Unit for STAR 3.0 EVM)
- USB 3.0 SuperSpeed cable: 2 m long, USB 3.0 Standard-A and Micro-B plug
- This Quick Start Guide
- Connector housing and pre-crimped leads for GPIO

Attention:

Please remove the protective cover from the DLP chip with an ESD protected screwdriver as shown below:
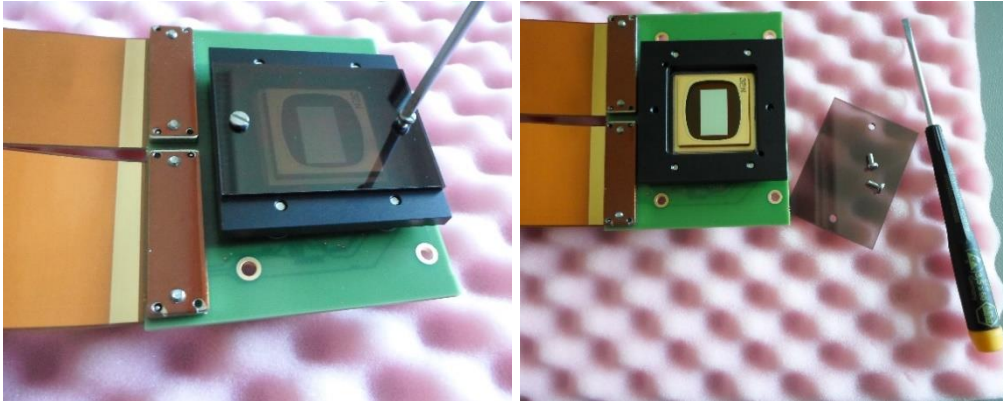
System Requirements

- Processor Architecture x86 or amd64
- 100MB of free hard disk space (optional)
- Internet connection for download of installation files
- 256 MB of RAM available
- SVGA (800x600) display minimum (1024x768 recommended)
- 1 USB 3.0 SuperSpeed port

The ALP software is supported on all current Microsoft® Windows® operating systems.

Getting Started

Please download the installation program for ALP-4.3 from:

www.vialux.de/support/download/ALP43_install.exe

It is digitally signed, and file integrity can be checked in the file properties. Details of the ViALUX signature must contain the statement "The digital signature is OK."
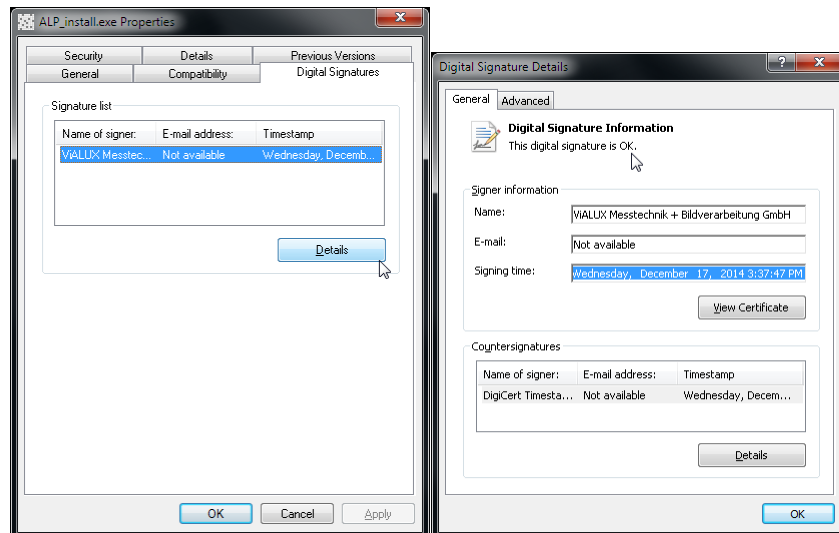
Please start the installation and follow the instructions of the installation program.

ALP software is not distributed in individual components, so installation is mandatory at least once for developing custom applications. However, for deployment to other computers only the ALP device drivers and libraries are required. They can be found in the installation folder, usually C:\Program Files [(x86)].

Step-by-Step: Quick Start using the EasyProj application

The EasyProj application is supplied as a convenient check of the system functions. EasyProj allows easily displaying image files on the DMD, altering timing setup, and control of a ViALUX LED light source if available. Source code is provided for reference. For recompiling please note that it uses the Microsoft Foundation Classes (MFC), contained in Visual Studio Professional.
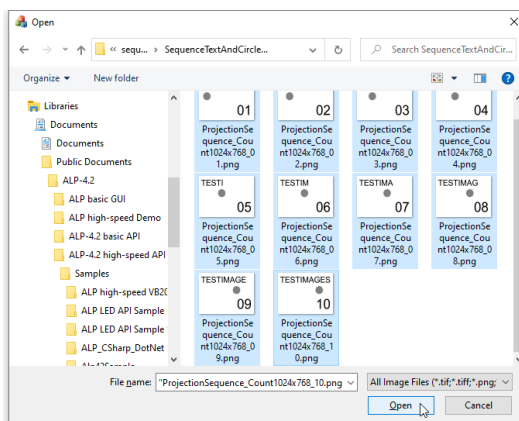
Step 1:   Power Up the device.

Step 2:   Only the device type radio buttons are enabled. Select the correct device (select "STAR-07" for the STAR 3.0 EVM). EasyProj searches a free ALP device and initializes it.
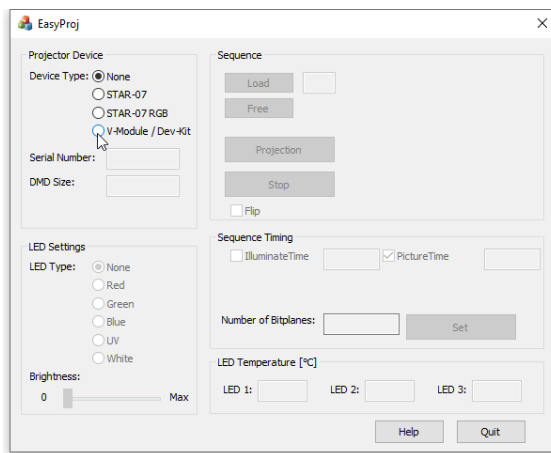
On success, it reports the V4395/V4390 serial number, and other control buttons are enabled.

Step 3:   Click Load and select some image files.

EasyProj allocates an ALP sequence of exactly this number of images. Then it copies all the files to ALP on-board sequence memory. Now they are ready for display.

Note that EasyProj manages only one sequence. This sequence must be "Freed" before another set of images can be loaded.

Step 4: The Projection button starts sequence display on the DMD.
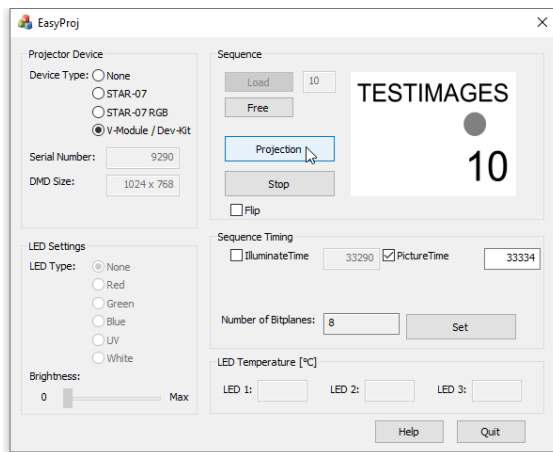
Sequence Timing can be adjusted at any time. Values are entered as micro seconds according to the ALP API. If display is already running, then EasyProj automatically restarts projection after timing changes.

Step 5: ViALUX optical modules include projection optics and a LED light source. The LED must be initialized and switched on. This is done by selecting the appropriate LED type and adjusting the brightness control.
The LED color cannot be detected automatically, so the user has to select the correct LED color.
Note: Wrong color selection may result in overload and damage.

Further Information and Documentation

The following packages are included in the ALP-4.3 Installation:

- 32- and 64-bit device drivers for Microsoft Windows
- EasyProj (binary exe file, source code)
- ALP Demo: an application utilizing several ALP sequences for binary and gray scale patterns, with finer control of ALP API functions (LED, Synchronization).
  (ALP Demo comes in binary format only, no source code)
- ALP Application Programming Interface (API) for use of full DLP performance with on-board RAM (Folder: *ALP-4.3 API*)
- sample code for ALP API in several programming languages (C++, C#, Visual Basic .NET, LabVIEW; Subfolders of *ALP-4.3 API*)
- Documentation related to ViALUX hardware and software
- All files can be accessed from the start menu.
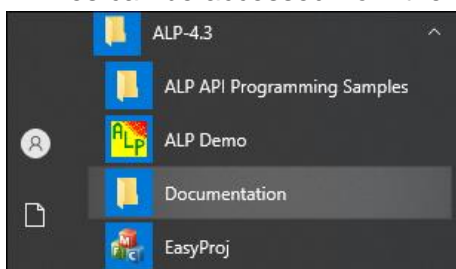
Documents are installed to the local directory C:\Users\Public\Documents\ALP-4.3\doc:

Name	Type
ALP-4.3 API description.pdf	Adobe Acrobat …
ALP-4.3 API Release Notes.pdf	Adobe Acrobat …
ALP-4.3 Quick Start Guide.pdf	Adobe Acrobat …
DLP Datasheets	Internet Shortcut
USB-3 Connector Locking - Dismantling…	Adobe Acrobat …
V4390 Dimensions.pdf	Adobe Acrobat …
V4390 Technical Reference.pdf	Adobe Acrobat …
V4395 Dimensions.pdf	Adobe Acrobat …
V4395 Technical Reference.pdf	Adobe Acrobat …

More comprehensive technical details about the DLP chip family are available from ViALUX on demand. Please feel free to contact dlp@vialux.de for support.