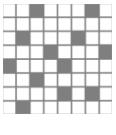
STAR-07

V-7000

Quick Start Guide

VIALUX



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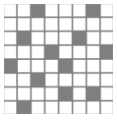


Read This First

Introduction

The ViALUX ALP-4.2 Controller Suite for use with V4100 hardware is part of V-7000 Module and STAR-07 projectors. 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 and, optionally, high-power LEDs.

The current version of ALP-4.2 Software is available for download at www.vialux.de/support/download/ALP42_install.exe

STAR-07 Kit Contents

- ViALUX STAR-07 Industrial Pattern Projection Unit
- USB-2.0 cable: 5m length, USB Series “A” plug (PC end), proprietary connector (blue)
- Power Supply, power cables with proprietary connector (red)
- Synchronization I/O cable
- This Quick Start Guide

V-7000: 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.

V-7000 Kit Contents

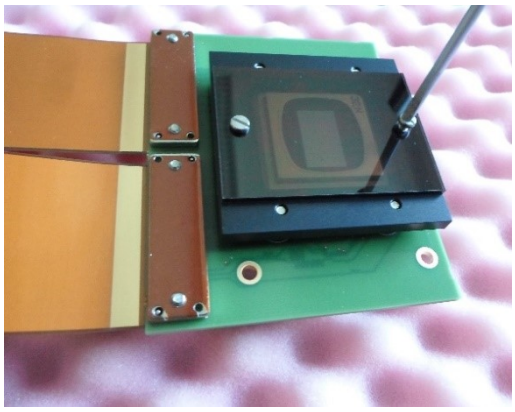
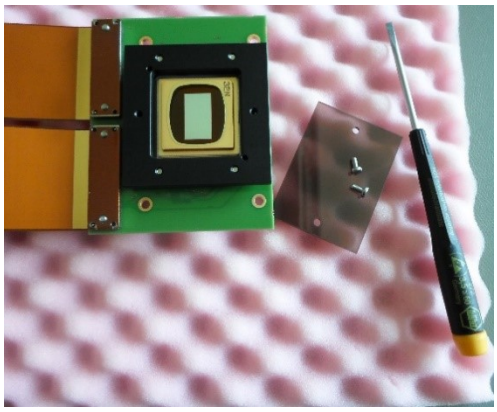
The V-7000 package contains the following items:

- V4100 printed circuit board with connected DLP chip
- Power Supply
- USB-2.0 cable: 1.5m length, USB Series “A” and “mini-B” plug
- This Quick Start Guide

The ALP-4.2 *high-speed* controller is implemented with an encrypted FPGA code on the V4100. The corresponding Virtex-5 FPGA key is factory installed and supported by a long-life battery.

IMPORTANT NOTE: Do not remove the battery.

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
  This is true for most of the current Intel® or AMD desktop and laptop processors.
- 100MB of free hard disk space
- Internet connection for download of installation files
- 256 MB of RAM available
- SVGA (800x600) display minimum (1024x768 recommended)
- 1 USB 2.0 high-speed port or USB 3.0 port

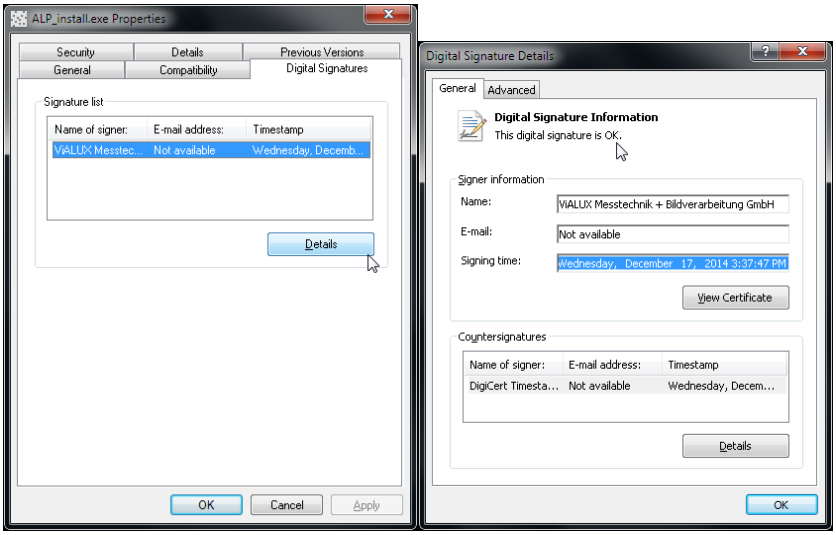
The ALP software is supported on all current Microsoft® Windows® operating systems.

Getting Started

Please download the installation program for ALP-4.2 from:

www.vialux.de/support/download/ALP42_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.

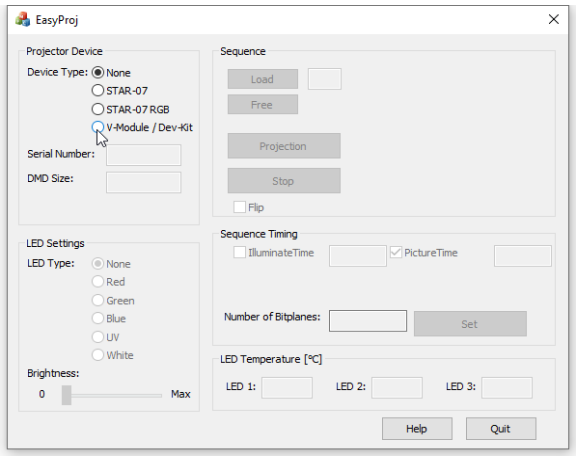
ALP software is not distributed in individual components, so installation is mandatory at least once for developing custom applications. However, for deployment to other computers only the ALP device drivers and libraries are required. They can be found in the installation folder, usually C:\Program 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 the STAR-07 light source. Source code is provided for reference. For recompiling please note that it uses the Microsoft Foundation Classes (MFC), contained in Visual Studio Professional.

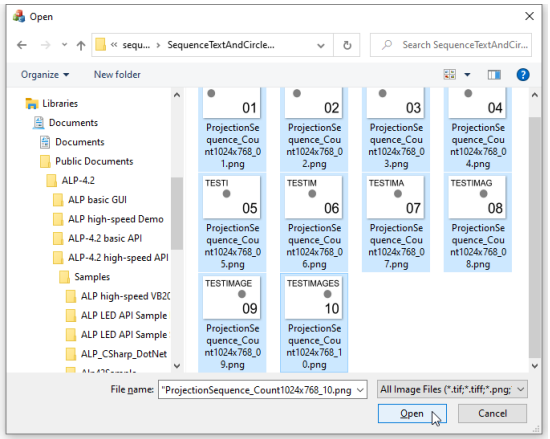
Step 1: Power Up the device.

Step 2: Only the device type radio buttons are enabled. Select the correct device. EasyProj searches a free ALP device and initializes it.



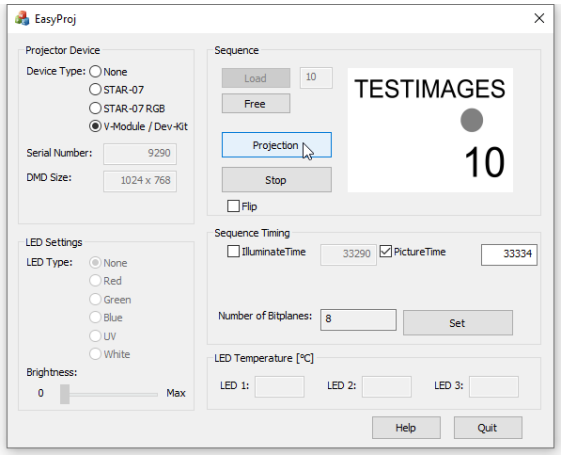
On success, it reports the V-7000 serial number, and other control buttons are enabled.

Step 3: Click Load and select some image files.



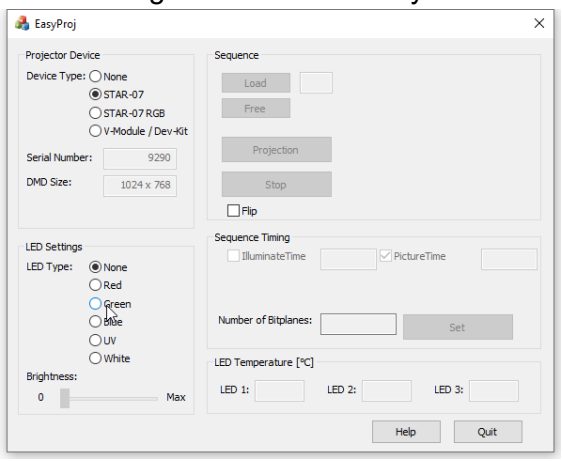
EasyProj allocates an ALP sequence of exactly this number of images. Then it copies all the files to ALP on-board sequence memory. Now they are ready for display.
Note that EasyProj manages only one sequence. This sequence must be “Freed” before another set of images can be loaded.

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: STAR-07 devices 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.



EasyProj monitors LED temperatures and implements an over temperature shut-down.

Further Information and Documentation

The following packages are included in the ALP-4.2 Installation:

- 32- and 64-bit device drivers for Microsoft Windows
- EasyProj (binary exe file, source code)
- ALP *high-speed* 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 *high-speed* Application Programming Interface (API) for use of full DLP technology performance with on-board RAM (Folder: *ALP-4.2 high-speed API*)
- sample code for ALP *high-speed* API in several programming languages (C++, C#, Visual Basic .NET, LabVIEW; Subfolders of *ALP-4.2 high-speed API*)
- Graphical User Interface (GUI) for interactive DLP chip control and script programming using ALP *basic* (Folder: *ALP basic GUI*)
- ALP *basic* API for flexible DLP chip control without on-board RAM (Folder: *ALP-4.2 basic API*); sample applications using this API in several programming languages
- Documentation related to ViALUX hardware and software

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