DLi41xx Developer's Kit Bundle Series

We are proud to announce our NEW DLi41xx Developer's Kit Bundle Series. We created the DLi41xx Series in response to customer needs and growing industry trends, be it a high-speed controller, DVI to DMD interface, or portable API / DLL. The DLi41xx Kit Bundle Series is based on the DLP Discovery™ 4100 Chip Set, which includes the DDC4100 Digital Controller & DAD2000 DMD Power & Reset Drivers.

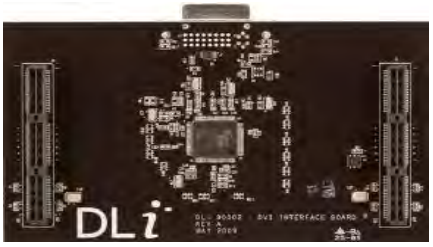
DLi4110 Developer's Kit Bundle

(DMD not shown)

DLi4110 0.95" 1080p Developer's Kit Bundle (DMD not shown)

DLi D2D DVI Interface Expansion Board

The D2D is a product unique to DLi and it gives users the capability to stream video to the DMD via a PC (also compatible with MAC & Linux), DVD Player, or anything with DVI-D. In addition to streaming video to the DMD, the DLi4110 is designed to give users the capability to create patterns and images in real time using OpenGL, DirectX, or Flash. The source video can be supplied by a PC, DVD Player, etc. with DVI output using any number of methods: creating a custom video or AVI, Flash, DirectX or OpenGL rendering, or image "slideshows," etc.



D2D Daughter Board (Top View)

D2D Daughter Board (Bottom View)

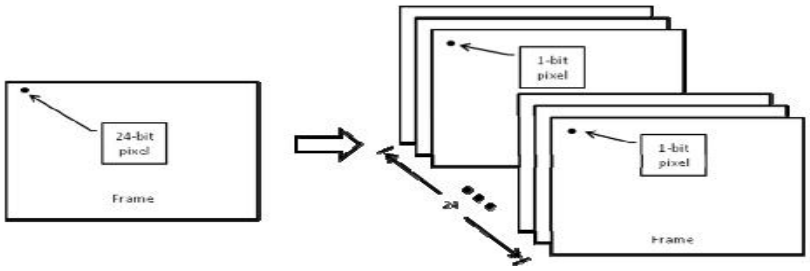
The D2D daughter board fits into the DLi4110 Controller Board via the two on-board EXP Connectors to provide plug and play functionality. D2D is easily deployed by snapping into the Controller Board's two EXP Connectors so that the DVI is not directly underneath the board.

EXP Connector

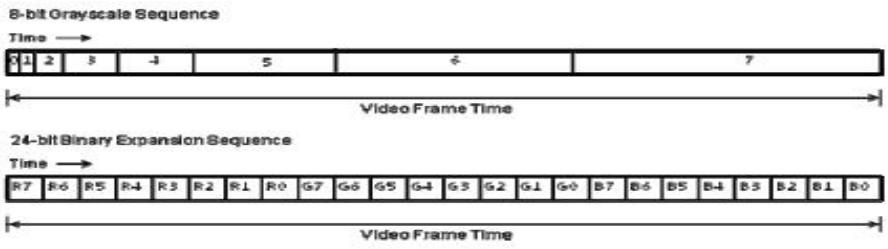
The 2GB DDR2 SDRAM to the controller board and providing users the functionality to stream XGA & 1080p images at 60Hz with 8-bit grayscale in two different modes: True 8-bit and Luminance.

D2D Enabled 8-bit grayscale

One of the most unique features of the DLi4110 is the 24-bit Binary Expansion Mode. 24-bit Expansion takes a 24-bit color frame and converts it into 24 different binary frames, allowing for up to 1,440 Hz.



24-bit Expansion Mode



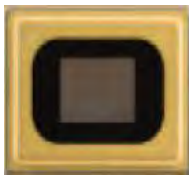
8-bit Grayscale vs 24-bit Expansion Mode

To increase performance, the DLi4110's Controller Board is upgraded with 2GB DDR2 SDRAM. It also comes with the D2D Manager Software and Graphical User Interface (GUI), which allows users to easily switch between 3 different modes: Binary, 8-bit Grayscale, and 24-bit Expansion. The D2D Manager software will configure the DLi4110 APPS FPGA for 60Hz grayscale or binary 24-bit Expansion Mode. Images and patterns are sent to the DLi4110's Controller Board via USB. The main board also includes a Xilinx Virtex 5 FPGA for developing a custom application interface.

The DLi4110 offers users a flexible platform to develop a proof of concept, serves as a reference design for a market-ready product, and facilitates scientific experimentation that utilizes the proven reliability of DLP technology. It is extremely

DLi41xx Developer's Kit Bundle Series

versatile and used for a variety of emerging applications such as Maskless Lithography, Spectroscopy, 3D Scanning & Printing, and Printed Circuit-Board Rapid Prototyping. The DMD can be specified for operation with UV or Visible wavelengths and comes in 0.7″ XGA, 0.95″ 1080p, and 0.96″ WUXGA resolutions.



0.7" XGA (VIS / UV)
1024 x 768

0.95" 1080p (UV / VIS)
1920 x 1080

0.96" WUXGA (VIS)
1920 x 1200

DLi4110 Features

- Bundled with D2D DVI Interface Expansion Board
- Streams Video to DMD Array via DVI-D
- Create a Custom Video or AVI, Image Slideshow, or DirectX, Flash, or OpenGL Rendering
- 3 x User-Defined Modes: Binary, 8-bit Grayscale, & 24-bit Expansion
- XGA & 1080p Images at 60 Hz w/ 8-bit Grayscale
- 1,440 Hz in 24-Bit Expansion Mode
- Sequential or Random Row Addressing
- Runs on Windows XP 32-bit
- Xilinx Virtex 5 User-Programmable Application FPGA

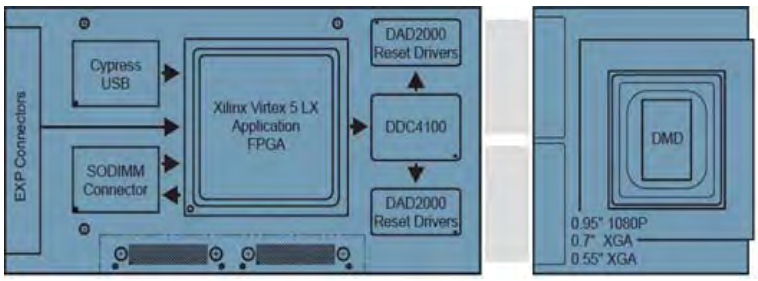
DLi4110 Bundle Kit Includes:

- DMD & Hardware
- Flex Cable/s & Remote Board
- FPGA Controller Board
- D2D DVI Interface Expansion Daughter Board
- 2GB DDR2 SDRAM Upgrade
- D2D Manager & GUI Software
- 5V Power Supply (with 4A Max)
- Discovery™ 4100 Chipset
- Male to Male DVI-D & Type-A USB Cable
- Access to TI KnowledgeBase Extranet
- FPGA Heatsink

DLi4110 I/O Connections

- Onboard USB for Rapid Prototyping
- High speed EXP Expansion connectors supporting EXP compatible products
- I/O connectors including MICTOR and JTAG

DLi4110 Controller Board Layout



***0.55" DMD No Longer Available**

DLi41xx Developer's Kit Bundle Series

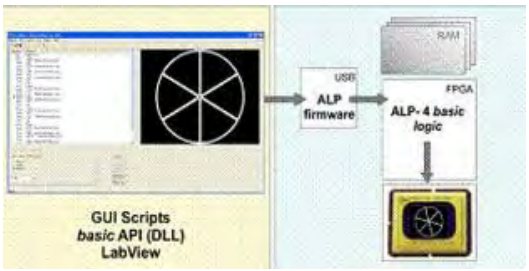
DLi4120 Developer's Kit Bundle

DLi4120 0.95" 1080p Kit Bundle

ALP 4.1 Basic Controller Suite

The DLi4120 Developer's Kit comes bundled with the ALP-4.1 Basic Controller Suite, which offers the flexibility for developing a custom interface through C++, .NET, Visual Basic, MATLAB, and LabView. The DLi4120 allows exploring the main DLP features by a convenient Graphical User Interface (GUI). The GUI is used to control pattern and image upload to the DMD and command processing. The DLi4120 also comes with a script processor for carrying out the GUI commands which integrates with the programming language of your choice.

ALP- 4.1 Basic



The DLi4120 Controller Board includes an on-board USB 2.0 for transferring images and patterns from a PC to the DMD with transfer rates up to 300 XGA patterns/second. The binary DMD array is addressed line by line and partial DMD updates are supported in block-based operations. With a single-line refresh, users can reach binary frame rates up to 2,000 fps for both XGA & 1080p, while a full-array can be addressed at up to 300 fps (XGA)/100 fps binary.

DLi4120 *Basic Specifications & FPGA Logic Implementation:*

		0.7 XGA DMD		0.95 1080p DMD	
DMD area updated	*Bit planes*	*Number of lines*	*Switching rate*	*Number of lines*	*Switching rate*
full array	1 – binary	768	300 Hz	1080	100 Hz
single line	1 – binary	1	2000 Hz	1	2000 Hz

The DMD can be specified for operation with UV or Visible wavelengths and comes in 0.7″ XGA, 0.95″ 1080p, and 0.96″ WUXGA resolutions:

DL*i*41xx Developer's Kit Bundle Series

0.7" XGA (VIS / UV)
1024 x 768

0.95" 1080p (UV / VIS)
1920 x 1080

0.96" WUXGA (VIS)
1920 x 1200

The DL*i*4120 offers users a flexible platform to develop a proof of concept, serves as a reference design for a market-ready product, and facilitates scientific experimentation that utilizes the proven reliability of DLP technology.

DL*i*4120 Features:

- Bundled with ALP-4.1 Basic Controller Suite
- Runs on Windows 7, XP, & Vista 32/64-bit
- Supplied API (DLL) Usable in C++, Visual Basic, .NET, MATLAB, & LabView
- Script file processing of GUI commands
- Binary Frame Rates up to 300 fps for XGA / 100 fps for 1080p (Full Array Address)
- Single-Line Refresh at 2,000 fps binary (XGA & 1080p)
- USB Transfer Rates of 300 XGA Patterns per second

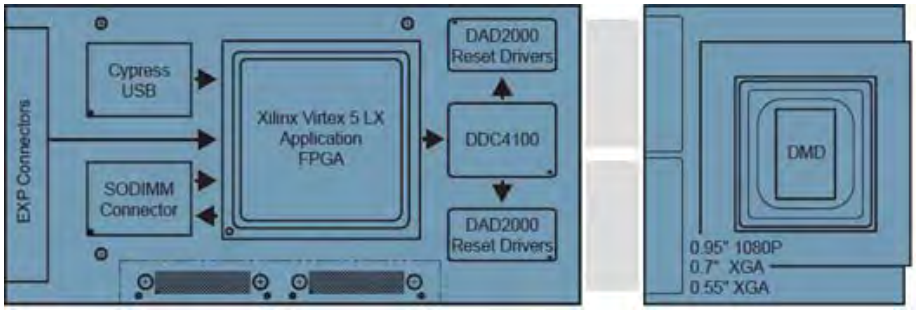
DL*i*4120 Developer's Kit Bundle Includes:

- DL*i*4120 DMD & Hardware
- Flex Cable/s & Remote Board
- DLi4110 FPGA Controller Board
- Xilinx Virtex 5 LX Application FPGA
- 5V Power Supply (with 4A Max)
- Discovery™ 4100 Chipset
- ALP – 4.1 Graphical User Interface (GUI) & Script Processor
- ALP – 4.1 Directory of Function Calls / Commands & Descriptions
- ALP – 4.1 Application Programming Interface (API / DLL) for ALP Basic
- Programming Samples for C++, Visual Basic®, .NET, & LabView FPGA Logic for ALP – 4.1 Basic

I/O Connections

- Onboard USB for Rapid Prototyping
- High speed EXP Expansion connectors supporting EXP compatible products
- I/O connectors including MICTOR and JTAG

DL*i*4120 Controller Board Layout



DL*i*41xx Developer's Kit Bundle Series

DL*i*4130 Developer's Kit Bundle

DL*i*4130 0.95" 1080p Kit Bundle

ALP – 4.1 High-Speed Controller Suite

The DL*i*4130 Developer's Kit comes bundled with the ALP-4.1 High-Speed Controller Suite (API / GUI), giving users the capability to work with frame rates up to 22,727 Hz binary / 290+ Hz 8-bit Grayscale. To increase performance, the DL*i*4130 Controller Board is modified with 4GB (32 Gbit SODIMM) DDR2 SDRAM, FPGA Key, and on-board battery for storing images at start up.

Sequences of patterns are generated in the PC and uploaded to the on-board SDRAM by lossless on-the-flight compression of data via the enhanced ViALUX USB 2.0 Device Driver. Images and patterns are sent to the DL*i*4130′s SDRAM at a transfer rate of 1.2 Gbit/s.

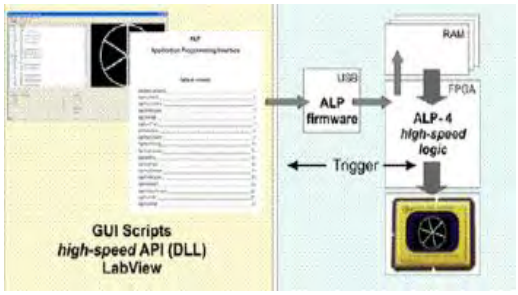
DL*i*4130 ***High-Speed Specifications & FPGA Logic Implementation:***

		0.7" XGA DMD		0.95" 1080p DMD	
DMD area updated	*Bit planes*	*Number of lines*	*Switching rate*	*Number of lines*	*Switching rate*
full array	1 – binary	768	22,727 Hz	1080	10,638 Hz
full array	8 – gray	768	291 Hz	1080	255 Hz

The DL*i*4130 also provides high flexibility by free choice of properties of the sequence (Bit Depth, Picture Time, Trigger Control, and Repetition). Optimized FPGA logic code guarantees precise, triggered transfer of SDRAM to the DMD array with a data rate of 24 Gbit/s. Users experience the true power of the DL*i*4130 by triggering or transferring all 40,000 binary images to the SDRAM in up to 29.3 seconds total.

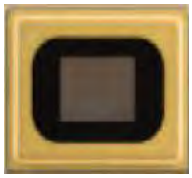
The DL*i*4130 offers the flexibility to develop a custom application interface through C++, .NET, Visual Basic, MATLAB, and Lab View. The DL*i*4130 also allows exploring the main DLP features by a convenient Graphical User Interface (GUI). The GUI is used to control pattern and image uploads to the DMD and command processing.

DL*i*41xx Developer's Kit Bundle Series



The DL*i*4130 comes with a script processor for carrying out the GUI commands which integrate with the programming language of your choice. A Directory of API (DLL) Calls/Commands & Descriptions is provided to assist with the programming of the DL*i*4130. It also offers easily integrated tools for programming operations from a PC running on Windows 7, XP, or Vista 32/64-bit.

The DMD can be specified in operation with UV and Visible wavelengths and it supports a wide variety of emerging applications such as Maskless Lithography, Spectroscopy, 3D Scanning & Printing, and Printed Circuit-Board Rapid Prototyping.



0.7" XGA (VIS / UV)
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1920 x 1080

0.96" WUXGA (VIS)
1920 x 1200

The DL*i*4130 offers users a flexible platform to develop a proof of concept, serves as a reference design for a market-ready product, and facilitates scientific experimentation that utilizes the proven reliability of DLP technology.

DL*i*4130 Features:

- Bundled with ALP-4.1 High-Speed Controller Suite
- Supplied API (DLL) Usable in C++, Visual Basic, .NET, MATLAB, & Lab View
- Stores up to 40,000 Images & Patterns on-board the DDR2 SDRAM
- Binary Frame Rates up to 22,277 fps binary/ 290 fps 8-bit Grayscale
- Transfer Rates of 1.2 Gbit/s via Enhanced USB 2.0 ViALUX Device Driver
- User-Defined Vertical Scrolling of Images & Patterns
- Master / Slave Mode Trigger Facilities for Connecting to External Devices

DL*i*4130 Bundle Kit Includes:

- DMD, Hardware, Flex Cable/s, and Remote Board
- FPGA Controller Board
- Xilinx Virtex 5 LX Application FPGA
- Discovery™ 4100 Chipset
- DL*i*4130 Controller Board Upgrades: 4GB DDR2 SDRAM, FPGA, On-board Battery for Storing Images at Start Up
- 5V Power Supply (with 4A Max)
- Microsoft Windows 7, Vista, & XP 32 / 64-bit Drivers for Plug & Play Deployment
- ALP – 4.1 Graphical User Interface (GUI) & Script Processor
- ALP – 4.1 Directory of Function Calls / Commands & Descriptions

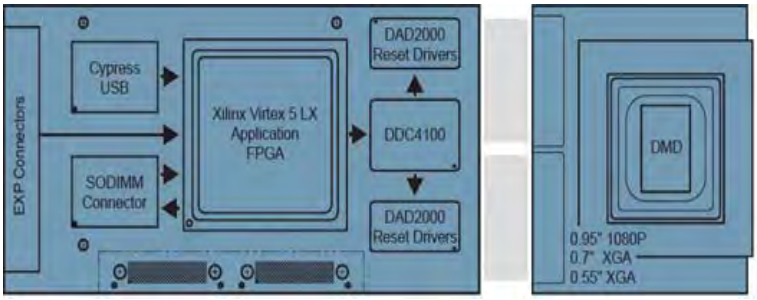
DL*i*41xx Developer's Kit Bundle Series

- ALP – 4.1 Application Programming Interface (API / DLL) for ALP High-Speed
- Programming Samples for C++, Visual Basic®, .NET, & Lab View FPGA Logic for ALP – 4.1 High-Speed

I/O Connections

- On-board USB for Rapid Prototyping
- High speed EXP Expansion connectors supporting EXP compatible products
- I/O connectors including MICTOR and JTAG

DL*i*4130 Controller Board Layout



***0.55" DMD No Longer Available**

Call or Email for More Information:

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sales@DLinnovations.com