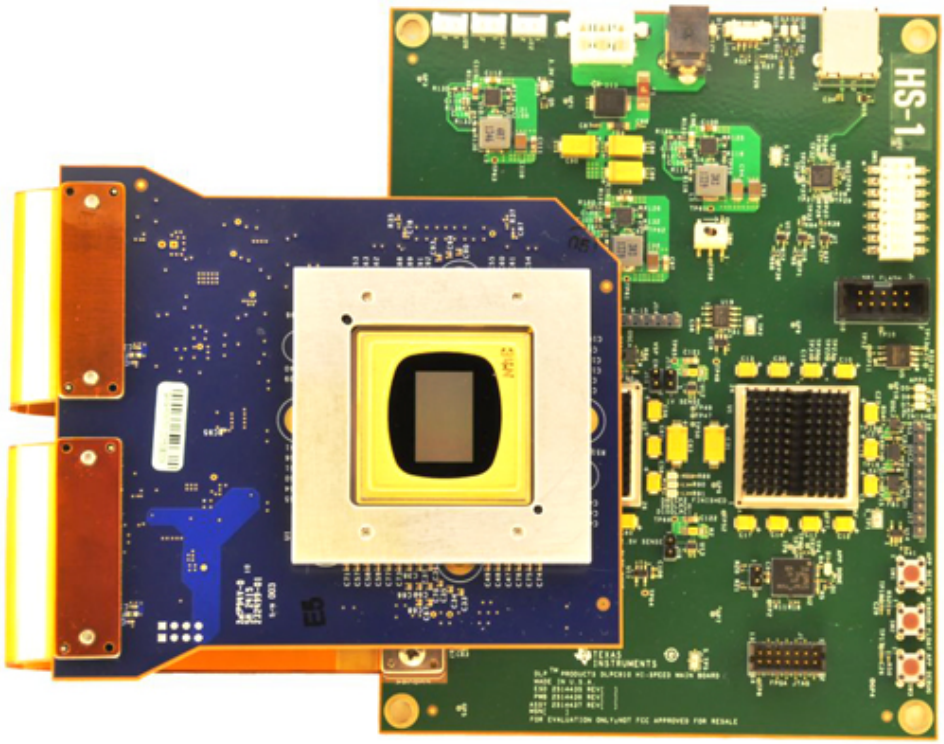
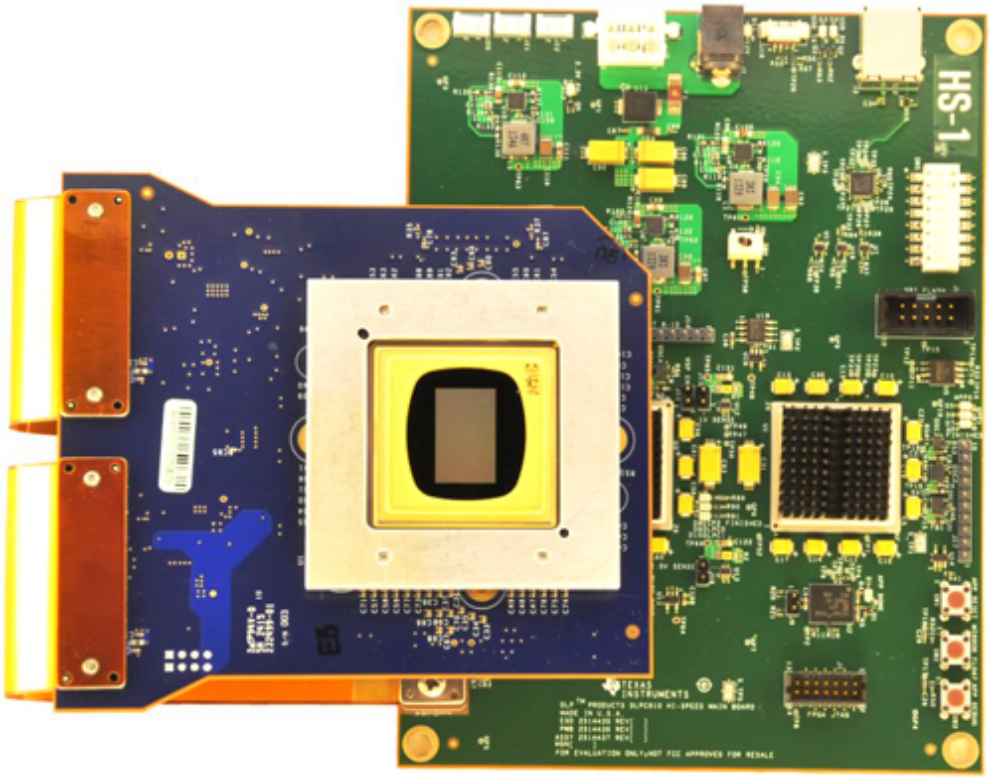
TIDA-00570

High Speed DLP Sub-system for Industrial 3D Printing and Digital Lithography Reference Design

Design files





A fully assembled board has been developed for testing and performance validation only, and is not available for sale.

Description & features

The High Speed DLP® Sub-system Reference Design provides system-level DLP development board designs for industrial Digital Lithography and 3D Printing applications that require high resolution, superior speed and production reliability. The system design offers maximum throughput by integrating the highest resolution DLP digital micromirror device, **DLP9000X**, and the fastest digital controller, **DLPC910**. With more than 4 million micromirrors (WQXGA resolution), this combination enables continual streaming data rates greater than 60 Giga-bits per second (Gbps). The DLPC910 digital controller also offers designers advanced pixel control with random row addressing in addition to full frame input. This added flexibility enables diverse architectures for industrial, medical, security, telecom, and instrumentation applications.

Features

- Up to 14,989 Hz binary pattern display rate
- Data streaming rates >60 Gbps
- 64-Bit LVDS Data Bus into the DLPC910 Controller
- Reliable High Speed DDR LVDS DMD Data Bus

Applications

Design files & products

Design files

Download ready-to-use system files to speed your design process.

Design guide — TIDA-00570(/lit/pdf/tiduat3)

TIDUAT3A.PDF (722 K)
Reference design overview and verified performance test data

Schematic — TIDA-00570(/lit/zip/tidrhn5)

TIDRHN5.ZIP (363 K)
Detailed schematic diagram for design layout and components

Bill of materials (BOM) — TIDA-00570(/lit/zip/tidrhn6)

TIDRHN6.ZIP (403 K)
Complete listing of design components, reference designators, and manufacturers/part numbers

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Assembly drawing — TIDA-00570(/lit/zip/tidrhn7)

TIDRHN7.ZIP (544 K)
Detailed overview of design layout for component placement

CAD/CAE symbol — TIDA-00570(/lit/zip/tidrhn9)

TIDRHN9.ZIP (3065 K)
Files used for 3D models or 2D drawings of IC components

CAD/CAE symbol — TIDA-00570(/lit/zip/tidrho0)

TIDRHO0.ZIP (571 K)
Files used for 3D models or 2D drawings of IC components

Gerber file — TIDA-00570(/lit/zip/tidcb32)

TIDCB32.ZIP (1389 K)
Design file that contains information on physical board layer of design PCB

PCB layout — TIDA-00570(/lit/zip/tidrhn8)

TIDRHN8.ZIP (1596 K)
PCB layer plot file used for generating PCB design layout

Products

Includes TI products in the design and potential alternatives.

ANALOG CURRENT-SENSE AMPLIFIERS

INA210 (/product/INA210) — 26V, bi-directional, high-precision current sense amplifier

Data sheet: PDF (/lit/gpn/ina210) | HTML (/document-viewer/INA210/datasheet)

BUCK CONVERTERS (INTEGRATED SWITCH)

TPS54521 (/product/TPS54521) — 17V Input, 5A Synchronous Step-Down Converter

Data sheet: PDF (/lit/gpn/tps54521)

DIRECTION-CONTROLLED VOLTAGE TRANSLATORS

SN74AVC4T774 (/product/SN74AVC4T774) — 4-bit dual-supply bus transceiver with configurable voltage-level shifting and 3-state outputs

Data sheet: PDF (/lit/gpn/sn74avc4t774) | HTML (/document-viewer/SN74AVC4T774/datasheet)

ESD PROTECTION DIODES

TPD2E2U06 (/product/TPD2E2U06) — Dual 1.5-pF, 5.5-V, ±25-kV ESD protection diode with 5.5-A 8/20-uS surge rating for USB 2.0

Data sheet: PDF (/lit/gpn/tpd2e2u06) | HTML (/document-viewer/TPD2E2U06/datasheet)

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Technical documentation

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Type	Title
All	Filter title by keyword
Design guide	TIDA-00570 Test Results (Rev. A)
Technical article	Three fast facts about our fastest, highest resolution chipset for industrial applications

Support & training

TI E2E™ forums with technical support from TI engineers

DLP9000X: DLP9000X EVB

Part Number: DLP9000X Hello, I am designing a circuit to work with the DLP9000X. I am basing my schematics on TI EVB schematics (attached). on those schematics, there are circuits to for the pow...

DLPC900: DLPC900 DMD Controller 1-bit Binary Pattern Capacity and Limitations

Part Number: DLPC900 Hello, I'm currently working with the DLi6500 development kit, and I noticed the memory capacity of the kit caps off at 400 1-bit binary patterns. Is it safe to assume the 4...

DLPC910: DLPC910

Part Number: DLPC910 Hello 1. Does the DLPC910 has power up and power down requirements? 2. How does the DLPC910 power up is in relation to the DLPR910. who should ramp up first? Thank you!...

DLPC910: Develop board test program

Part Number: DLPC910 Hi, I have a tida-00570 High Speed DLP sub-system DLPC910 Main Board. How can I test if it is available? I tried to write a breathing lamp with ISE and downloaded it through j...

TPS65145: TPS65145 question about the cause of VBAIS voltage becoming 8V?

Part Number: TPS65145 Dear support member, I have a question. From the circuit diagram below I made a board of TPS65145. www.ti.com/.../TIDA-00570 TIDA-00570_2514439b_HI-SPEED_WQXGA_DMD_BOAR...

DLPC910: Any sample code of the Apps FPGA for DLPC910 available?

Part Number: DLPC910 Dear All, Please let me ask you the availability of the sample Apps FPGA code for DLPC910 chip-set reference design(TIDA-00570). If my understanding correct , I noticed there...

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