



DMD Discovery™ 3000 Chip Set

At the heart of the DMD Discovery™ 3000 Chip Set is the Texas Instruments 0.7 XGA LVDS DMD, an optical semiconductor that allows developers to manipulate light digitally. When integrated with light source and optics, this unique device creates binary light patterns with speed, precision, and efficiency far surpassing that of other spatial light modulators. The Discovery 3000 Chip Set provides substantial performance improvements including increased data rate, frame rate and flexible random row addressing.

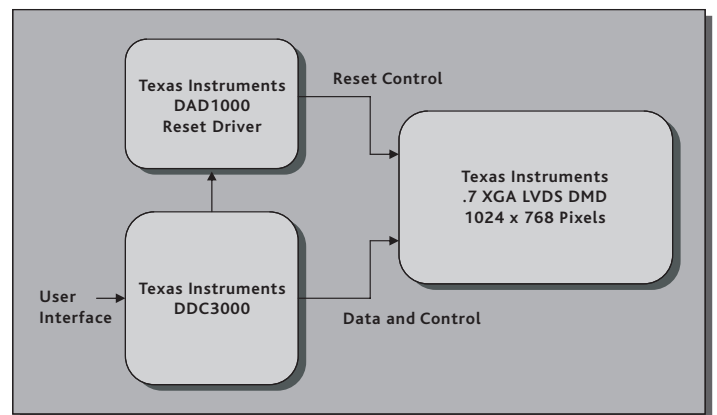
The 0.7 XGA LVDS (Low Voltage Differential Signal) DMD consists of a 1024 x 768 array of micro-mechanical mirrors on a 13.68 micrometer pitch. Each mirror can be individually deflected at +/- 12° about a hinged diagonal axis. Deflection polarity (positive or negative) of mirrors is individually controlled by changing the binary state of the underlying CMOS control circuitry and mirror reset signal.

The 1024 x 768 mirrors are driven in a block reset fashion allowing for either global or phased reset. Effectively, the DMD 0.7 XGA 12° LVDS is an electrical input, optical output memory device.

The DMD Discovery 3000 Chip Set features the DMD and other supporting devices. Unlike TI DMD controllers optimized for projection display, Discovery 3000 is designed to support a wide variety of DMD applications by delivering maximum flexibility in formatting and sequencing data and resulting light patterns.

0.7 XGA LVDS DMD FEATURES

- 1024 x 768 bistable mirrors (16 banks of 1024 x 48)
- +/- 12 degree mirror tilt
- Up to 16,300 full array mirror patterns/sec (12.8 Gbs)
- 200 MHz LVDS clock rate
- 13.68um x 13.68um mirror pitch
- 85% optical fill factor



Discovery 3000 Block Diagram

DMD DISCOVERY CHIP SET

- 0.7 XGA LVDS DMD Spatial Light Modulator
- DAD1000 DMD Power and Reset Driver
 - Generates reset control of 16 banks of DMD mirrors
- DDC3000 Digital Controller
 - Provides high speed LVDS data and control interface for user interface to the DMD and provides mirror reset and timing information to the DAD1000.
 - Supports random row addressing.

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