Application Brief

TI DLP 4K Ultra High Definition (UHD) Display Chipset

Developers looking to integrate 4K UHD display technology can use Texas Instruments DLP 4K UHD chipsets. Highly programmable and delivering true 4K UHD resolution, the chipset enables numerous display solutions, including: laser TV, home theater, education and enterprise projectors, digital signage, smart lighting and more.

About the DLP 4K UHD Chipset

The DLP chipset consists of the digital micromirror device (DMD), a digital controller, and a power management device. These devices can be combined with many different optical and mechanical components to meet a diverse set of performance level requirements. The chipset offers great versatility for numerous applications needing ultra-high definition, each DMD and digital controller coming with a unique set of features. To learn more, explore the products in Table 1.

Table 1. DLP 4K UHD Chipsets

DMD	Controller	Power management device
DLP470TE	DLPC4422 (x2)	DLPA100
DLP660TE	DLPC4422 (x2)	DLPA100
DLP471TE	DLPC7540	DLPA100
DLP471TP	DLPC6540	DLPA3005
DLP650TE	DLPC7540	DLPA100

4K UHD Resolution

- Ultra-fast switching speed.
  - The fast switching speed of the DMD enables 8.3 million pixels to be displayed on the screen using 4.15 million micromirrors.
  - Resolution delivered is equal to combining four 1080p displays.

High Performance Imager

- High ANSI contrast reveals fine lines and details for excellent readability.
- Alignment-free.
  - Optical engine designs using a single DLP chip are inherently aligned for perfect convergence, resulting in sharp, detailed images.

Flexible Technology

- High thermal capability.
  - Enables numerous display products requiring high brightness solutions.
- Light source agnostic.
  - Compatible with virtually any light source, including lasers, laser phosphor and LEDs.

Robust Ecosystem

- Optical modules
  - Production-ready optical modules from third party companies can speed up product development.
- TI.com support tools, technical documents and online community available to address technical questions.

Production-ready optical modules to aid developers, TI maintains a robust ecosystem, including independent companies with expertise in designing and manufacturing production-ready optical modules. An optical module is a compact assembly that includes a DLP DMD, an LED-based illumination source, optics and associated mechanics.

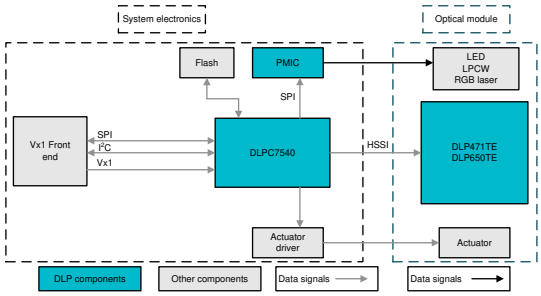

Figure 1. DLPC7540 4K UHD Chipset Diagram

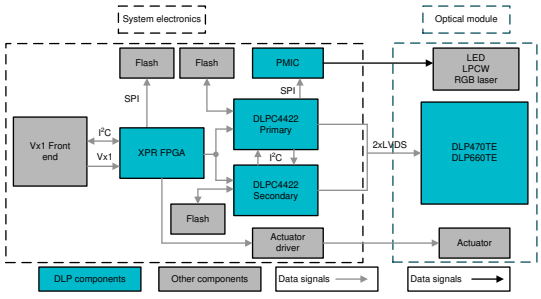

Figure 2. DLPC4422 4K UHD Chipset Diagram

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