MEEN 489

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Digital Light Processing
Overview

Definition
History
How it works
Applications
Pros/Cons
Summary
What is DLP?

Digital Light Processing

Developed by Texas Instruments

Semiconductor reflects light, projects picture

Video projectors, televisions, and digital cinema
1987: Dr. Larry Hornbeck develops DMD semiconductor

1996: First commercial DLP projector

1997: DLP at Oscars

2006: 10 million DLP systems shipped in 10 years

2009: DLP cinema in >14,000 theatres
How does DLP technology work?

Light source shines through color filter
DLP Chip
  2 million micro mirrors
  1 mirror = 1 pixel
  Tilts towards or away from light
Light reflected onto screen
Single DLP Chip system: 16.7 million colors
How does DLP technology work?
Applications

DLP High Definition TVs
   Mitsubishi and Samsung

Personal & Commercial Projectors

Movie Theatre Projectors

Photo finishing, Microscopes, Spectroscopes, and Medical imaging
Future Developments

3D Projection
One projector instead of two
Decrease cost

Dual View
Offsets image in terms of time
Two perspectives with glasses
Advantages of DLP

- Clear and sharp image
- DLP TVs do not deteriorate
- Lightweight
- Cost Effective
Disadvantages of DLP

Rainbow Effect

DLP TVs thicker than LCD, Plasma

Smaller viewing angle
Summary

DLP technology offers exceptional quality
Primary manufacturer: Texas Instruments
Used in TVs, projectors, movie theatres
http://www.dtvcity.com/dlp/tvresources.html


http://www.dlp.com


http://www.dlpptvreview.com/

http://www.home-theater-automation-and-electronics.com
Some questions can't be answered by Google. Sun Worship 9 AM.