

Patents

DTI's Issued Patents

DTI has been researching this type of 3D display since the mid-1980s and we hold many of the world's major patents on this technology. As of early 2004 DTI holds over 25 US and foreign patents. The issued US patents are listed below. There are a number of other patents in process. Our on-going R&D effort promises to produce many more patentable technologies in the future in the areas of advanced 2D/3D direct view displays, 2D/3D projection displays, and ultra high resolution 2D displays.

US 4,717,949

Covers the basic technology used in DTI's switchable 2D/3D products. A light emitting line pattern fronted by a transmissive display provides bright stereo images the viewer can see without special glasses.

US 4,829,365

Numerous variations on the basic technology are covered. Different illumination patterns and masks are described in order to broaden the claims of Patent #2 to cover any variation of illumination patterns behind transmissive displays that create autostereoscopic images.

US 5,036,385

By using fast LCDs in front of flashing illumination patterns, images with the full resolution of the LCD, hologram like look around, and a wide 3D viewing area without position restrictions are created. In addition, 2D resolution can be increased by a factor of four or more without increasing the number of pixels on the LCD.

US 5,040,878

This patent covers a backlight system with a reflector panel and 2D/3D switching capability.

US 5,349,379

Covers components developed for an all-electronic head tracking system that allows freedom of head movement on the part of the display user.

US 5,311,220

A variation on the type of technology described in Patent #5,036,385 that allows multiple person head tracking and projected 3D.

US 5,410,345

Covers details of the construction and operation of illumination systems for use with the 3D technology and the ultra high definition technology described in Patent #5,036,385.

US 5,457,574

Covers a switchable 2D/3D illumination system and optics that allows very high brightness and/or power efficiency.

US 5,606,455

This is a division of patent #5,457,574 containing more claims covering variations on the illumination system.

US 5,428,366

Covers an illumination system and method for producing field sequential color illumination without color breakup on a 2D display.

US 5,500,765

Covers a low cost 2D/3D optical system for use with laptop and notebook computers.

US 5,897,184

Covers a compact light guide system that allows switching between 2D and 3D illumination.

US 6,157,424

This patent covers another compact 2D/3D system involving 2D/3D panels that can be integrated with an image forming LCD.

US 6,533,420 B1

A rear or front projection system allowing images from small, fast microdisplays to be magnified into large full resolution autostereoscopic images with no head position restrictions and images viewable from across a wide angle.

US 6,590,605 B1

Versatile 2D/3D optics that can be applied to emissive as well as transmissive displays.

US 6,734,838

Illumination system and optics that allow for generation of ultra high definition images on a microdisplay with much more resolution than the microdisplay itself.

DTI continues to develop cutting edge 3D and high definition display technology and has patents pending in such areas as compact 3D projection systems, ultra high definition display systems for projection and head mounted applications, and methods of eliminating focus/fixation disparity in head mounted virtual reality and enhanced reality displays.