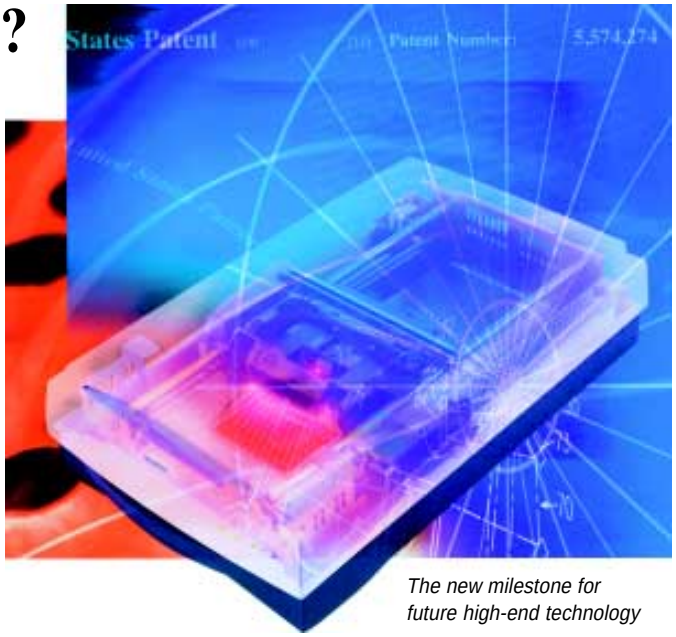
What Is E.D.I.T.?

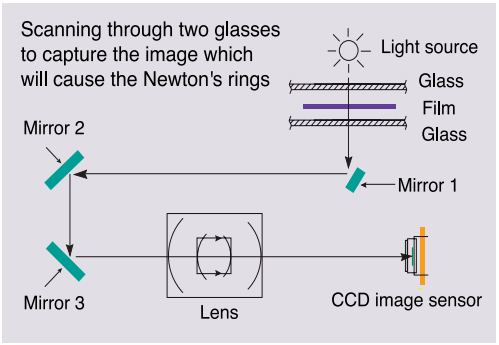
E.D.I.T. stands for Emulsion Direct Imaging Technology. As in drum scanning, **E.D.I.T.** enables the scanner CCD lens to read directly from the emulsion side of the film, with no glass coming between the lens and the scanned target. This type of scanning eliminates the so-called Newton Rings or image distortions otherwise caused by the intervening glass surface. With **E.D.I.T.**, images captured by the CCD are rendered in their full dynamic range, resulting in optimal accuracy and clarity.



The new milestone for future high-end technology

Traditional Route vs. New Scanning Route

Non-E.D.I.T.transparency scanning route

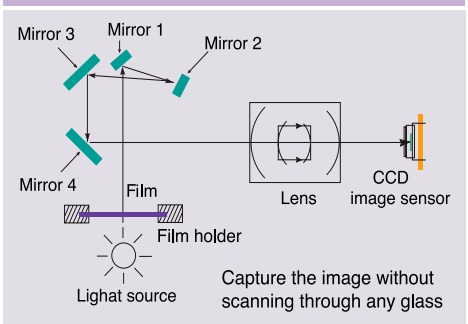


Conventional flatbed scanners were originally designed for scanning reflective media only. Later, the TMA (Transparent Material Adapter) was introduced for scanning transparent film.

The TMA, while adequate for the needs of general users, did not prove sufficient for the demanding uses of professional applications that required accurate color tones, full dynamic range and sharp detail in scanning.

In response, Microtek developed **E.D.I.T.** (U.S. patent no. 5,574,274). This revolutionary invention has received significant attention from the professional Japanese publishing media, who hail the Microtek E.D.I.T. and call it a technological milestone in the development of high-end scanners.

E.D.I.T. transparency scanning route



Scanning With a Standard TMA

Scanning transparent film using the standard external transparency adapter causes a host of problems for the graphics professional — some readily obvious and others more subtle.

The glass itself

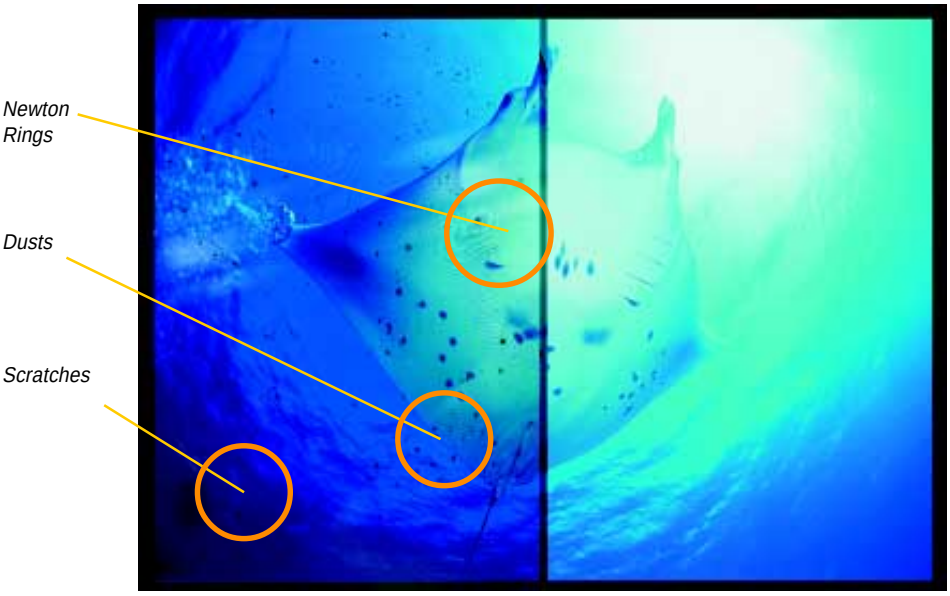
A loss of illumination always occurs when light passes through material other than air, and the degree of loss will depend on the penetration rate and the thickness of the glass. The loss is doubled if there are two layers of glass instead of one. Glass also causes refraction and multi-reflection. The combination of these two factors — the loss of illumination and the glass itself — leads to the formation of Newton Rings. A Newton Ring is an optical interference phenomenon in the form of irregular multicolored concentric circles taht appear on the scanned image. This interference pattern shows up because of the tiny space (air layer) existing between film and glass through which light passes when a TMA is used.

Film is not flat

When using a TMA, film placed on the scanner glass bed cannot be kept entirely flat, and a slight curvature is inevitable during positioning. In addition, there is no perfect contact between the two sheets of glass (the glass from the lower scan bed and the glass of the TMA that sandwiches the film). The result? Distortions in focus and image.

Dust and dirt

Dust, dirt and grime from fingers or the hands are easily transferred to film if the film is handled improperly. These smudges, in turn, show up in the resulting scan. Moreover, if the scanner glass is not clean or has become soiled for any reason, “noise” or artifacts can show up in the scans as well.



Common problems found in a traditional flatbed Scanner while scanning transparent materials: Dusts, Newton Rings & Scratches on the glass.

Scanning With E.D.I.T.

Microtek's **E.D.I.T.** is a technology designed specifically for scanning transparent media, with the switching flip mirrors and removable film holder design forming the two most important factors of **E.D.I.T.** At first glance, a scanner with **E.D.I.T.** seems not to differ substantially from a regular scanner. A glass surface can still be seen after lifting the upper cover, which is the location for placing reflective materials. The new element is an additional compartment: a transparency bay that forms the receptacle for accommodating various film holders or a glass tray. The holders can accommodate different-sized film, including 4" x 5", 6 x 9 cm, 35 mm slide, and 35 mm filmstrips. By using these various film holders or the glass tray, transparent media of different sizes can be easily positioned — aligned, laid flat, stretched out, inserted into the drawer, and then scanned with no resulting Newton Rings.

Dual Optical Path and Flip-Mirror Design

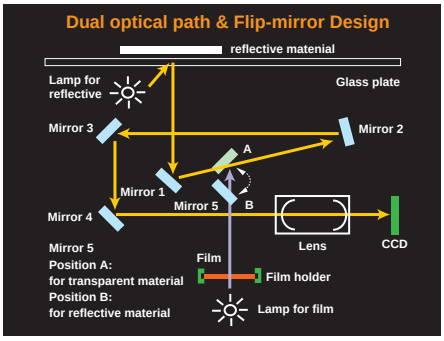
Two unique design concepts form the basis for the **E.D.I.T.** optics system. This is explained below in more detail.

Dedicated light source for reflective and transparent media

Scanners with **E.D.I.T.** feature a dual optical path or two light sources. One light source is installed above the holder to scan reflective materials placed on the upper scan bed. A second light source is installed specifically for scanning transparent media in the lower compartment. Thus, light for the transparent media comes from its own dedicated source and does not travel through the glass surface of the upper scan bed.

Flip-mirror design

The flip-mirror design allows a flexible light path to go through, and the mirrors are "flipped" or switched depending on the type of material to be scanned and the setting chosen by the user. Both transmissive and reflective scanning are possible in one mechanical layout.



Optical Path for Reflective Materials:

Lamp for reflective material => Reflected from original => Mirror 1=> (bypasses Mirror 5) => Mirror 2 => Mirror 3 => Mirror 4=> CCD through lens

Optical Path for Transparent Materials:

Lamp for film -> Passes through transparent original -> Mirror 5' -> Mirror 2 -> Mirror 3 -> Mirror 4 -> CCD through lens * Switching between 2 paths by flip-mirror 5'

Better Images Through Innovation

Microtek is a global leader in designing and manufacturing affordable desktop digital imaging products that help improve communications and efficiency. Known for its first-to-market scanning technology, Microtek continues to provide a wide range of desktop imaging solutions to users, ranging from the mass market to high-end professional desktop publishers, printers, and pre-press service providers. Most recently, Microtek redefined the scanner category with the development of the first affordable, stand-alone scanning appliance, which operates totally independent of a computer. Founded in 1980 and headquartered in Redondo Beach, California, Microtek Lab, Inc. is a U.S. subsidiary of Microtek International, Inc., based in Hsinchu, Taiwan. The company has a strong global presence with major operations and distribution channels in 53 countries around the world. Microtek can be found on the Web at **http://www.microtekusa.com.**