Primary Applications

- Television equipment
- DVD and HD DVD recorders
- Video CD/DVD/DivX players
- Digital camcorders
- Security surveillance systems
- Post-processing and restoration of video

Key Features

- Applicable both to video and to static images
- One-pass real-time processing
- Fully automatic
- No effect on details in dark or bright areas
- Ready for hardware implementation

Basic Deliverables

- Source code for a reference implementation in C
- C and assembly language source code for an implementation optimized for the PC (if required)
- Algorithm description
- Software description
- Verification instructions

The task of increasing video contrast and brightness is often required in myriad applications. Common problems with less sophisticated solutions include severe post-processing damage or loss of detail in bright or dark areas, noise amplification and inefficiency of automatic correction.

Our solution effectively overcomes these obstacles.
YUV Contrast Technology

Specification

• Applicable both to video and to static images
• One-pass real-time processing
• Fully automatic, adapts to brightness changes and scene changes
• Preserves details in dark and bright areas
• Prevents noise amplification
• Color correction feature prevents color distortion
• Edge correction features for suppression of Gibbs-like artifacts
• Requires two pass over frame to gather statistics
• Local sliding window processing during the second pass
• Memory usage as low as 50 kilobytes, regardless of frame size
• Performance of non-optimized C reference model is 52 fps for a CIF video on an Intel Pentium 4 2.8 GHz PC
• Ample potential for parallelization

Comparison with Competitors

• Adobe Premiere
• Adobe After Effects
• Adobe Photoshop (still images only)

Our Advantages

• Preservation of details in dark and bright areas
• No color distortions