

PRELIMINARY



LiMo

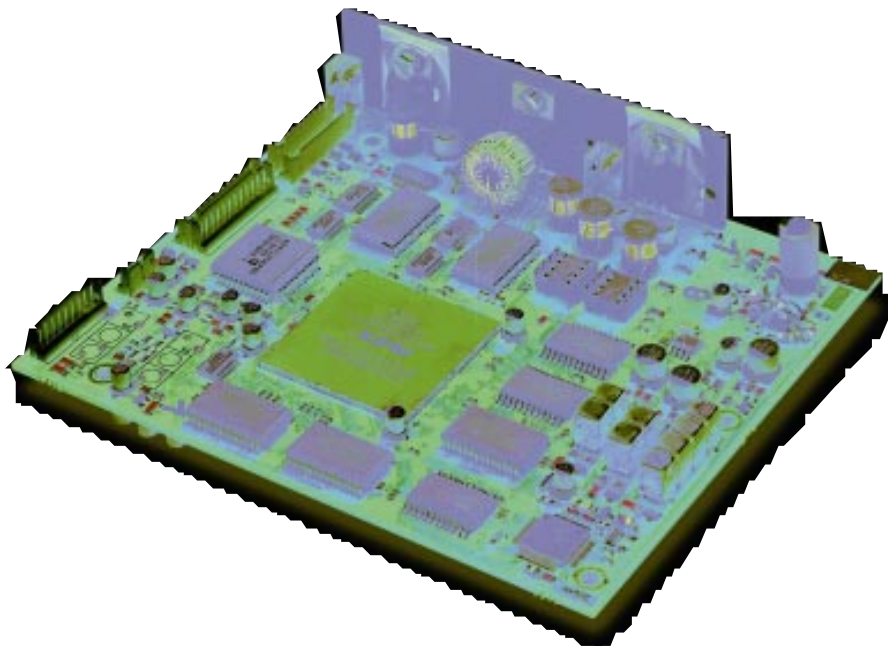
Built-in Line Multiplier for BARCO Projectors and VSE 40 Video Processor

BARCO's LiMo is a proprietary, state-of-the-art digital Line Multiplier which converts standard video resolution to an outstanding high-resolution signal with additional signal improvements. The result is a flicker-free, motion picture-like image. LiMo can be incorporated into most current BARCO CRT projectors and is built into BARCO's VSE 40 switcher.

Features

- LiMo offers superb video quality through intelligent video processing logarithms:
 - Line doubling, via Median or Interpolated Doubling
 - Line quadrupling
 - Frame doubling (quadrupled image)
 - Full frame freeze
- The extremely high quality of an original motion picture video source is obtained through the integrated "Motion Picture Processing" circuit, which eliminates all jaggies and motion artefacts
- The digital Edge Enhancement circuit allows to adjust the Edge Enhancement of any incoming video signal, such as composite video, s-video, component video and RGB video sources

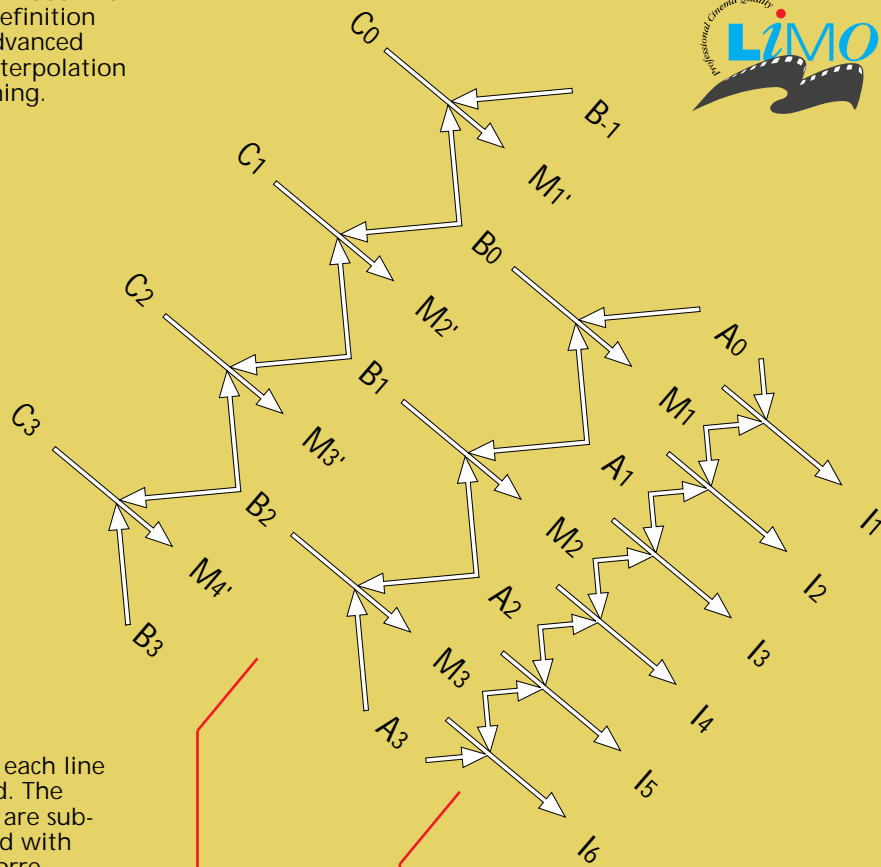
LiMo can be integrated in all current projectors capable of displaying sources of 15 kHz (video), 32 kHz (line-doubled video), 64 kHz (quadrupled video) as well as 100/120 Hz (frame-doubled video).



Unmatched Video Quality through BARCO's new completely Digital LiMo

Linear interpolation and progressive scanning

The LiMo video processing circuit converts conventional video line structures into high-definition images through an advanced technique of linear interpolation and progressive scanning.



In a sequential order, each line in a field is duplicated. The lines of the duplicate are subsequently interpolated with the initial field: the corresponding line of the duplicate is inserted between the corresponding lines of the previous field. The exact positioning of the inserted line is very precisely calculated while taking into account pixel information from three lines: the previous line, the following line and the previous image field. The result is a smooth image with virtually no black lines between two signal lines.



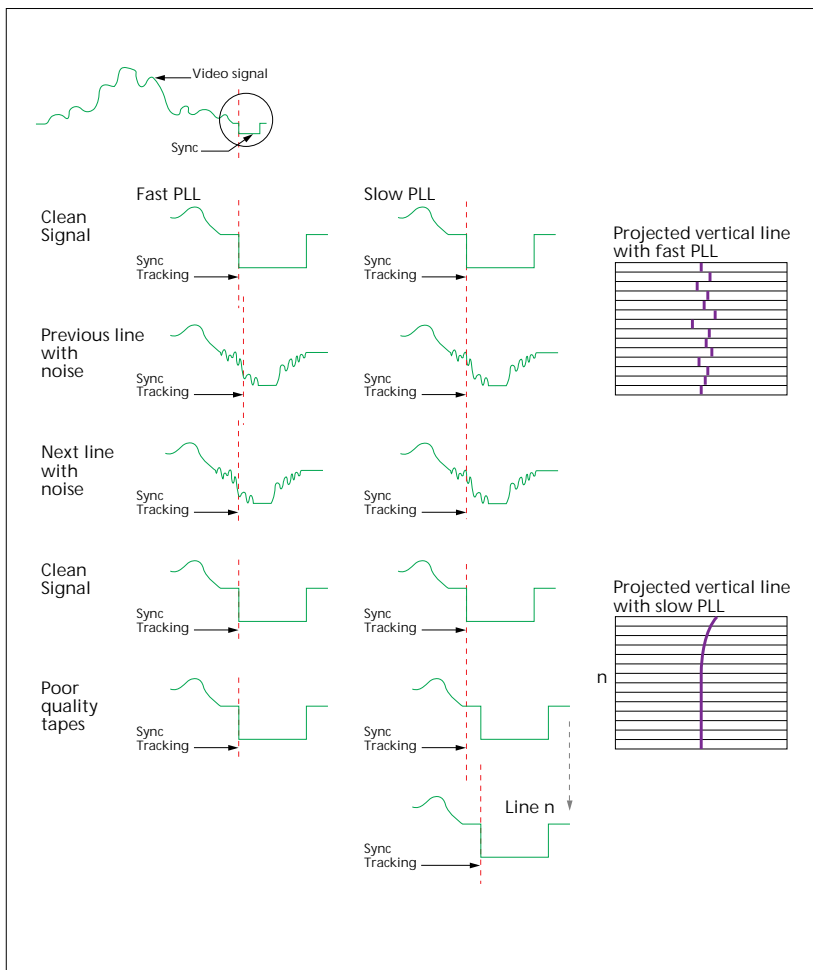
Quadrupling starts in fact from the result of the doubling. At this point an interpolation between the original line and a calculated line is done to obtain two additional lines: one between the first, original line and the progressive scan interpolated line and another one between the progressive scan interpolated line and the second original line. This results in 4 lines: 3 calculated lines for each original one.

Additional Circuits Provide for a Smooth, Compelling Image

Motion Picture Processing
 The Motion Picture Processing circuit continuously checks if the source material is descended from a 24 pictures/s motion picture. When this is the case, the LiMo will detect whether a 3:2 or 2:2 pull down algorithm was used and will process the image accordingly. The result is a true 35 mm motion-like picture.

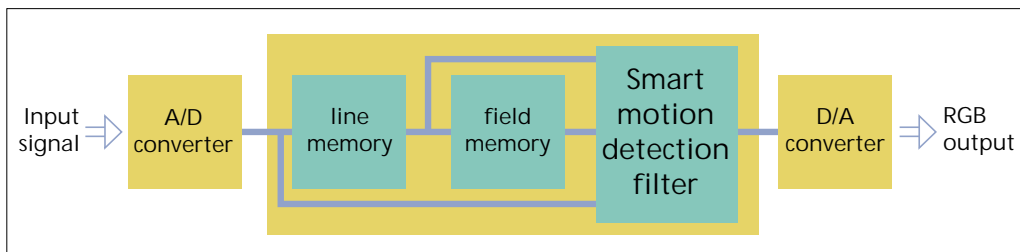
Digital Edge Enhancement
 The digital Edge Enhancement uses a high-quality digital filter to obtain sharp edges without downgrading any other part of the signal. Sharpness adjustment/edge enhancement is done for every incoming video

signal being processed. BARCO's LiMo works in unison with the Video Decoder of the projector. This decoder incorporates an edge enhancement circuit and a three-line adaptive comb filter that guarantees perfect color transition and reduces video noise in the image significantly.



The PLL circuit for the sampling of the video signal in the LiMo locks on the sync signal. A slow PLL is not sensitive for noise, but has a slow response to shifts in the sync signal (e.g. with poor quality VHS tapes), which results in a 'bending' at the top of the image. A fast PLL immediately responds to sync shifts, but results in jitter of the video image when there is noise in the sync signal. BARCO has designed an advanced PLL circuit, which has a fast response to sync shifts, but eliminates the influence of noise.

Technical Specifications



Output Frequencies

The resolution of standard interlaced video, 525 (NTSC)/625 (PAL) lines can be converted into:

- 525/625 lines non-interlaced - 32 kHz 50/60Hz
- 1050/1250 lines non-interlaced - 64 kHz 50/60Hz
- 525/625 lines non-interlaced - 64 kHz 100/120 Hz
- 1050/1250 lines interlaced - 64 kHz 100/120Hz

Compatibility

LiMo is compatible with all sources ranging from standard television, VCR, DSS to laserdisc and DVD players.

The LiMo can be built into the BARCOVISION 1609s, BARCODATA 708, 808s-series, 1209s, BARCOGRAPHICS 808s-series, 1208s, 1209s

Order Information

LiMo for BARCO projectors
R9828630

BARCO Projection Systems is an ISO 9001 registered company.

The information and data given are typical for the equipment described. However any individual item is subject to change without any notice.

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