

## OVERVIEW

The DPTV™-MVS is a high performance digital video-processing chip for progressive DVD player and TV applications. Designed for maximum system design flexibility, users of Trident's single chip DPTV™ Progressive Video Processor(s) will benefit from one of the most feature rich devices available while maintaining a price competitive advantage over the existing solution(s). The DPTV™-MVS supports CCIR-656, CCIR-606 digital input signals and directly interfaces with most common video decoders seamlessly. It is the ideal de-interlacing chip for a progressive DVD Player or as the format converter in a HDTV set top box design. Trident's DPTV™ product family propels our corporate mission by delivering tomorrow's digital media technology to today's consumer.

## FEATURES

- ✧ Film mode recovery for movie titles
- ✧ Frequency rate conversion for different output display devices
- ✧ 14 Dynamic picture quality enhancements (14D)
- ✧ VBI/Closed Caption
- ✧ Optional text/graphical OSD capability
- ✧ Motion & edge adaptive de-interlacing
- ✧ MPEG2 digital video interface
- ✧ SVGA digital/analog overlay with OSD and PIP
- ✧ PIP, POP, multi-picture, and panorama display modes
- ✧ Programmable zoom viewer
- ✧ Linear and non-linear scaling
- ✧ Gamma correction and alpha blending
- ✧ High-speed support and low-cost frame buffer
- ✧ Integrated DAC for direct analog RGB or YPbPr output
- ✧ Multiple output formats for 480P, 720P, or 1080I
- ✧ Built-in 10-bit DAC
- ✧ Optional 20-bit Y/C interface for external DAC
- ✧ Audio/Video lip synchronization
- ✧ Advanced mixed-signal processing with 0.25 µm process
- ✧ Easy upgrade to DPTV™-DX design with an internal color decoder
- ✧ Single chip: 208 PQFP

### Progressive Scan Refresh

- Progressive scan @ 50 Hz to 75 Hz

### Motion & Edge Adaptive De-interlacing

- Improves the clarity and sharpness of the overall picture.
- Enhances feature enhances the "slow-moving" portions of the picture by doubling the resolution of those areas by utilizing Trident's proprietary de-interlacing technology.

### 14D: Dynamic Picture Enhancements

- Dynamic luminance transience index
- Dynamic chrominance transience index
- Dynamic scan velocity modulation
- Dynamic digital comb filter
- Dynamic motion & edge adaptive de-interlacing
- Dynamic temporal frame-filtering noise reduction
- Dynamic gamma control
- Dynamic black level extender
- Dynamic brightness/contrast adjustment
- Dynamic adaptive smoothing filter
- Dynamic frame/scan rate converter
- Dynamic white peak level restriction
- Dynamic room temperature color correction
- Dynamic digital SVGA overlay

### OSD and (optional) VBI / Closed Caption

- Vertical Blank Interval (VBI) is a new industry standard for transmitting non-video data over the TV broadcast signal during the dead time (Vertical Blanking). Close-captioned information is one of the non-video data that uses this portion of the transmission time.
- On-Screen Display (OSD). Users can choose to implement text-based OSD through the main CPU, or graphical-based OSD through an optional OSD CPU.

### Screen Display Modes

- Picture-in-Picture (PIP). The PIP display mode is available with 16 different color frames for maximizing viewing experience. It can be repositioned to suit personal preferences and habits.
- Picture-Out-Picture (POP), multi-picture, cinema 1, and cinema 2 are some forms of dual program screening supported by the advanced architecture of the DPTV™. For multi-picture viewing, the screen is divided evenly into 4 or 9 smaller screens.
- Panorama viewing is best supported on a 16:9 aspect ratio screen. It is also supported on a 4:3 aspect ratio screen by downsizing the picture to fit the screen width. Other forms of downsizing are also available.

### Advanced Picture Processing

- Advanced linear and non-linear panorama scaling

algorithms are applied to maximize the viewing experience in the various display modes.

- The programmable zoom viewer allows partial still pictures and live broadcast to be viewed in greater detail. This feature uses technology available in the PIP and OSD features of the DPTV™-MVS.
- Alpha blending and overlay results in higher clarity and definition of objects of a picture while maintaining a more natural "look and feel" as it accounts for foreground and background colors.
- Gamma correction.
- Picture controls such as hue, saturation, brightness, and contrast can be automatically adjusted to their optimal balance using dynamic picture enhancement techniques.

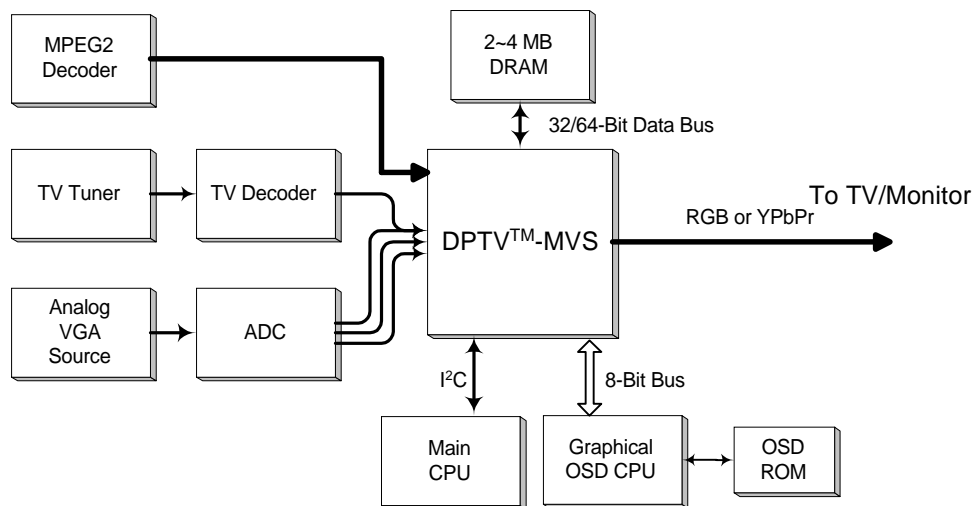
## Inputs / Outputs

- MPEG-2 digital video input
- Composite, component or S-Video Input through an external TV decoder.
- Analog SVGA input through an external ADC.
- Supports YPbPr output with 525P copy protection
- Analog RGB or YPbPr for 480P/720P/1080i progressive output

## Packaging

- 208-Pin PQFP
- Ordering part number is 6740

## Trident DPTV™-MVS Solution



- Trident's DPTV™ solution supports two input sources. A direct MPEG2 digital video input and a TV input through an external decoder. The second input source can be from analog SVGA through an external DAC.
- Enhanced video features such as POP, Cinema 1, Cinema 2, OSD, etc., are controlled through the micro-controller.
- Minimum frame buffer RAM is 2MB for normal operations, and 4MB if panorama, de-interlacing, or other advanced features are used.

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