

## OVERVIEW

The DPTV™-DX is the main component in premier TV chipset solutions in the market. Designed for maximum system design flexibility, users of Trident's single chip DPTV™ 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™-DX converts today's analog TV into an advanced progressive TV quality. It also accepts HDTV broadcast through a direct MPEG2 interface. Trident's DPTV™ product family propels our corporate mission by delivering tomorrow's digital media technology to today's consumer.

## FEATURES

- ✧ Interlaced and progressive scan refresh
- ✧ 14 Dynamic picture quality enhancements (14D)
- ✧ PAL/NTSC/SECAM TV decoder with programmable 5-Tap adaptive comb filter
- ✧ 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
- ✧ Advanced mixed-signal processing with 0.35µm process
- ✧ Single chip: 208 PQFP

### Interlaced and Progressive Scan Refresh

- Interlaced @ 60Hz to 100 Hz
- Progressive scan @ 50 Hz to 75 Hz

### Motion & Edge Adaptive De-interlacing

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

### TV Decoder With Programmable 5-Tap Adaptive Comb Filter

- Supports NTSC, PAL and SECAM formats.
- Supports analog front-end with dual 10-bit ADC
- Programs comb filter to 0, 3, & 5 taps to adapt to all possible environments.

### 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™-DX.
- 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.

external TV decoder.

- Alternative (shared input) SVGA/MPEG-2 digital video input
- Component input
- Composite video input
- S-Video input

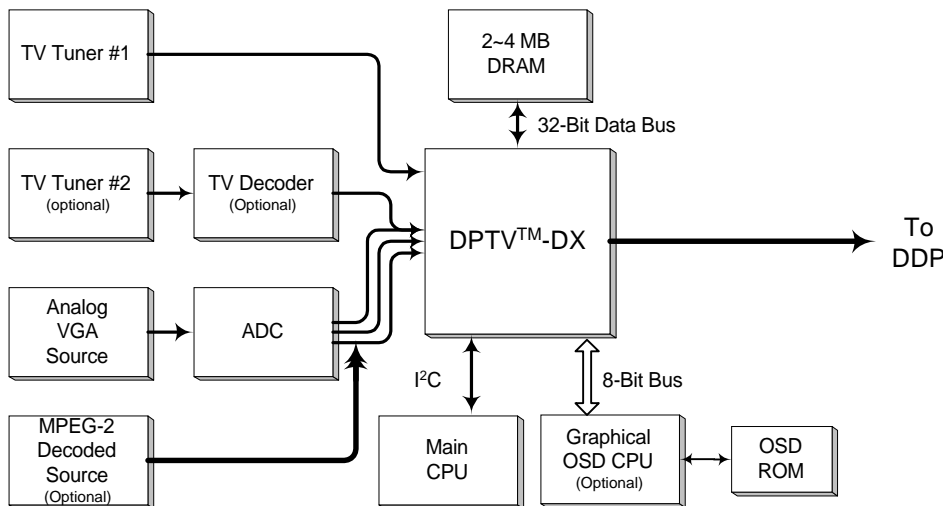
### Packaging

- 208-Pin PQFP
- Ordering part number is 6630

### Inputs / Outputs

- One direct TV tuner video signal input
- One secondary TV tuner video signal input, through

### Trident DPTV™-DX Solution



- Trident's DPTV™ solution supports two TV sources. An NTSC/PAL TV decoder with 5-tap adaptive comb filter is integrated to enhance the quality of the display picture.
- 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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