

Techwell



TW6800

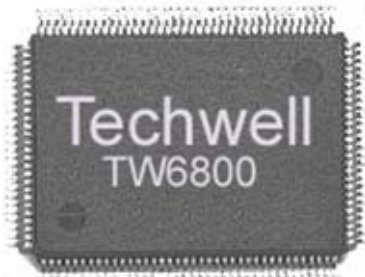
PCI Interface Single-Chip Video Processor

The TW6800 contains all the components required to convert standard NTSC/PAL/ SECAM analog TV input signals to digital form for output on a PCI bus. A digital GPIO input allows direct connection to digital video streams from MPEG decoders and other components.

The TW6800 uses the mixed-signal 3.3V CMOS technology to provide a low-cost and low-power integrated solution. Minimum external components are required due to its integrated analog front-end containing AGC, clamping, and three 8-bit high speed ADCs. For composite inputs, an adaptive comb filter and luma/chroma processing produce exceptionally high quality pictures using proprietary techniques. A high quality internal scaling engine offers arbitrarily filtered down scaling of the output picture. A built-in Closed-Caption decoder and VBI data pass-through support data applications such as Teletext and Closed-Captioning.

Applications

- PC based video capture Card
- PC based TV Tuner card
- TV Box
- Digital Video Recorders (DVR)
- Security Video



Features

PCI I/O and GPIO

- PCI Rev. 2.2 compliant
- ACPI support
- Integrated DMA controller
- Supports Windows scatter and gather
- Large 256x32bit PCI video FIFO
- Programmable field or frame modes
- Flexible 24-bit wide GPIO port supports ITU-R or ITU-R 656 compatible format YCbCr (4:2:2) input or output
- Programmable RGB and YCbCr color space conversion
- Closed caption decoding accessed via PCI bus
- VBI data pass through to PCI
- Supports 2-wire serial bus master via PCI bus

Analog-Input Digital Video Decoder

- NTSC (M, 4.43) and PAL (B, D, G, H, I, M, N, N combination), PAL (60), SECAM with automatic format detection
- Advanced synchronization processing for VCR fast forward, backward, and pause mode
- Software selectable analog inputs allows any of the following combinations:
 - Up to four composite video inputs
 - Three composite and one S-video inputs
 - Two 8-bit ADCs and analog clamping circuit.
- Fully programmable static gain or automatic gain control for the Y or CVBS channel
- Programmable white peak control for the Y or CVBS channel

Video Processing

- Switchable notch filter or 2H comb filter
- PAL delay line for color phase error correction
- Image enhancement with programmable peaking
- Digital sub-carrier PLL for accurate color decoding
- Digital Horizontal PLL and advanced synchronization processing for non-standard video signals
- Programmable hue, brightness, saturation, and contrast
- Automatic color control and color killer
- High quality horizontal and vertical filtered scaling with arbitrary scale down ratio

Miscellaneous

- Power-down mode
- Microsoft WHQL Certified Software Drivers
- Single 27MHz crystal for all standards
- Supports 24.54MHz and 29.5MHz crystal for high resolution square pixel format
- 5V tolerant I/O
- 3.3 V power supply
- VBI data pass through to PCI
- Supports 2-wire serial bus master via PCI bus
- 128-pin PQFP package

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