

TW9984

4-Channel Video Decoder and Video Encoder for Automotive Applications

FN8710  
Rev 3.00  
April 7, 2016

The TW9984 includes four high quality NTSC/PAL/SECAM video decoders that convert analog composite video signal to digital component YCbCr data. Each channel contains a 10-bit ADC with application selectable differential or single-ended analog video input options, proprietary clamp and gain controllers and utilizes 4H comb filter for separating luminance and chrominance to reduce cross noise artifacts. The TW9984 adopts the image enhancement techniques, such as IF compensation filter, CTI and programmable peaking. TW9984 also includes an NTSC/PAL video encoder with a 10-bit DAC to support CVBS output.

**Related Literature**

- UG018, "TW9984AT-NA1-GE-EVAL Evaluation Board User Guide"

**Features**

- Accepts all NTSC (M/4.43)/PAL (B/D/G/H/I/K/L/M/N/60)/SECAM standards with auto detection
- Integrated four video analog antialiasing filters and 10-bit CMOS ADCs with differential and single-ended inputs
- High performance adaptive 4H comb filters for all NTSC/PAL standards

- IF compensation filter for improvement of color demodulation
- Color Transient Improvement (CTI)
- Automatic white peak control
- Programmable hue, saturation, contrast, brightness and sharpness
- Proprietary fast video locking system for non-real-time application
- Supports the standard ITU-R BT.656 format or time multiplexed output with 54/108MHz
- Supports a two-wire serial host interface
- Integrated video encoder and 10-bit video CMOS DAC
- Integrated clock PLL for 108MHz clock output
- Short-to-battery, short-to-ground detection
- Ultra low power consumption (typical 550mW)
- Single 27MHz crystal for all standards and output options
- 1.2V/3.3V power supply
- Optional 1.8V operation of digital output
- 10mmx10mm 68 Ld WQFN package
- [AEC-Q100](#) qualified

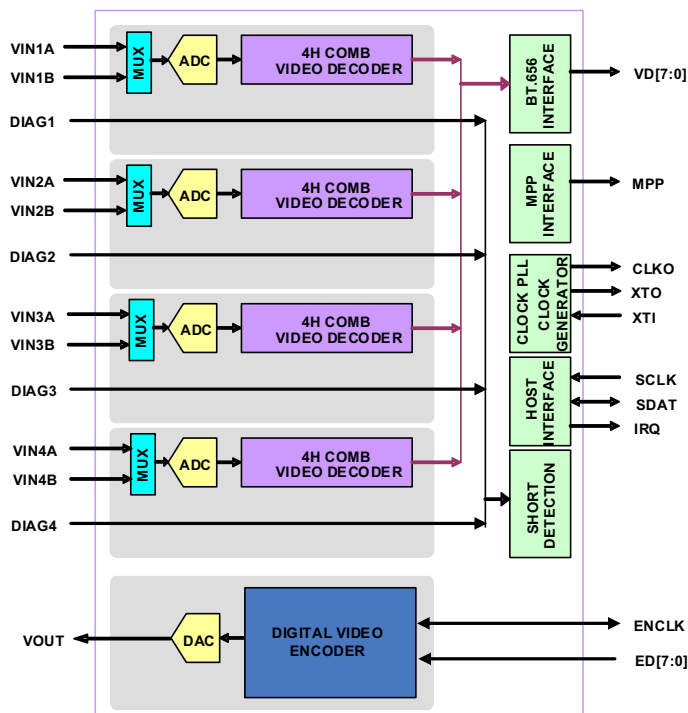


FIGURE 1. TW9984 FUNCTIONAL BLOCK DIAGRAM

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