

# Low Power NTSC/PAL/SECAM Video Decoder with VBI Slicer

## TW9900

### Features

#### Video Decoder

- NTSC (M, 4.43) and PAL (B, D, G, H, I, M, N, N combination), PAL (60), SECAM support with automatic format detection
- Software selectable analog inputs allow any of the following combinations, e.g. 2 CVBS or 1 Y/C.
- Built-in analog anti-alias filter
- Two 10-bit ADCs and analog clamping circuit
- Fully programmable static gain or automatic gain control for the Y channel
- Programmable white peak control for the Y channel
- 4-H adaptive comb filter Y/C separation
- PAL delay line for color phase error correction
- Image enhancement with peaking and CTI
- Digital sub-carrier PLL for accurate color decoding
- Digital Horizontal PLL for synchronization processing and pixel sampling
- Advanced synchronization processing and sync detection for handling non-standard and weak signal
- Programmable hue, brightness, saturation, contrast, and sharpness
- Automatic color control and color killer
- Chroma IF compensation
- Detection of level of copy protection according to Macrovision standard
- ITU-R 601 or ITU-R 656 compatible YCbCr(4:2:2) output format
- VBI slicer supporting industrial standard data services
- VBI data pass through, raw ADC data output
- Programmable output cropping

#### Miscellaneous

- Two wire MPU serial bus interface
- Supports Real Time Control interface
- Power save and Power down mode
- Typical power consumption < 100mW
- Single 27MHz crystal for all standards
- Supports 24.54MHz and 29.5MHz crystal for high resolution square pixel format decoding
- 3.3V tolerant I/O
- 1.8V/3.3 V power supply
- 32 pin TQFP and 32 pin QFN package

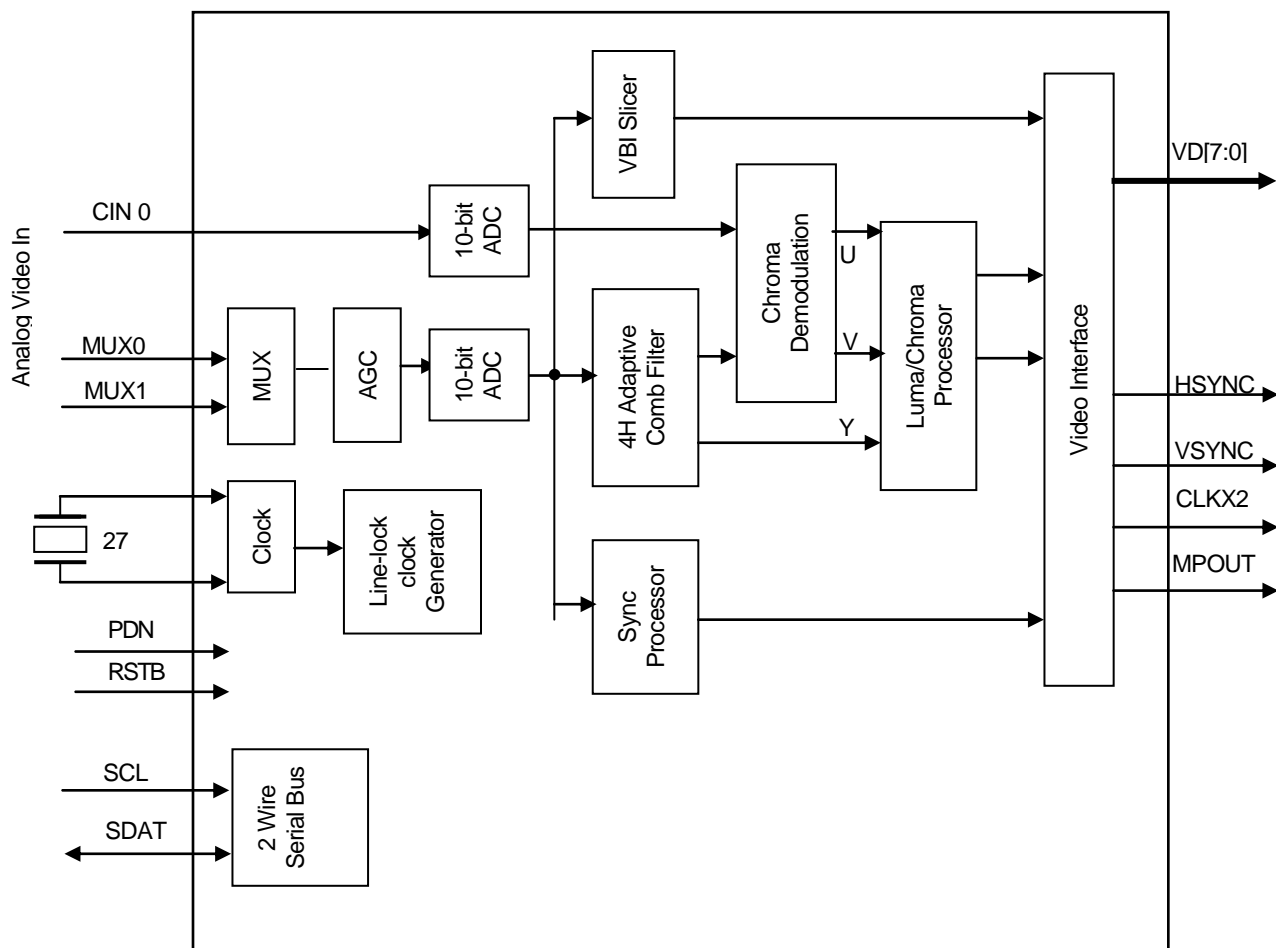
## Ordering Information

PART NUMBER	PART MARKING	PACKAGE (Pb-free)
TW9900-TA1-GR (Note 1)	TW9900 DBTA1-GR	32 Ld TQFP (5mmx5mm)
TW9900-TA1-GRT (Note 1)	TW9900 DBTA1-GR	32 Ld TQFP T&R (5mmx5mm)
TW9900-NA1-GR (Note 2)	TW9900 DBNA1-GR	32 Ld QFN (4mmx4mm)
TW9900-NA1-GRT (Note 2)	TW9900 DBNA1-GR	32 Ld QFN T&R (4mmx4mm)

NOTE:

1. These Intersil Pb-free plastic packaged products employ special Pb-free material sets; molding compounds/die attach materials and NiPdAu plate - e4 termination finish, which is RoHS compliant and compatible with both SnPb and Pb-free soldering operations. Intersil Pb-free products are MSL classified at Pb-free peak reflow temperatures that meet or exceed the Pb-free requirements of IPC/JEDEC J STD-020
2. These Intersil Pb-free plastic packaged products employ special Pb-free material sets; molding compounds/die attach materials, and 100% matte tin plate plus anneal (e3 termination finish, which is RoHS compliant and compatible with both SnPb and Pb-free soldering operations). Intersil Pb-free products are MSL classified at Pb-free peak reflow temperatures that meet or exceed the Pb-free requirements of IPC/JEDEC J STD-020.

## Functional Description



**FIGURE 1. TW9900 BLOCK DIAGRAM**

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Intersil products are manufactured, assembled and tested utilizing ISO9000 quality systems as noted in the quality certifications found at [www.intersil.com/design/quality](http://www.intersil.com/design/quality)

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