# DATASHEET

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To request the full datasheet, please visit www.intersil.com/products/tw8809

# **Low Cost Video Format Converter**

## TW8809

The TW8809 is a low cost video format converter that can take either analog CVBS or 24-bit digital RGB format video and output these signals in ITU-R.656 format. The video sources can be scaled and deinterlaced, so that the ITU-R BT.656 output is already formatted to the desired resolution and in progressive format. In addition, the TW8809 has built-in OSD and image enhancement capabilities.

# Applications

- Rear seat entertainment
- · Radio head unit

## **Features**

#### **Analog Video Decoder**

- NTSC (M, 4.43) and PAL (B, D, G, H, I, M, N, N combination), PAL (60), SECAM with automatic format detection
- Selectable differential or single ended CVBS input
- Supports two differential or 4 single-ended CVBS inputs
- 10-bit ADC 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
- High quality adaptive 2D comb filter for both NTSC and PAL inputs
- PAL delay line for color phase error correction
- Image enhancement with 2D dynamic peaking and CTI
- Digital sub-carrier PLL for accurate color decoding
- Digital horizontal PLL and advanced synchronization
  processing for VCR playback and weak signal performance
- Programmable hue, brightness, saturation, contrast and sharpness

#### **Digital Input**

- Supports YCbCr/RGB 24-bit input
- Supports both BT.656 and BT.601 video formats
- Supports input resolutions up to 720p

#### **Digital Output**

- ITU-R BT.656 compatible YCbCr (4:2:2) output format
- Progressive ITU-R BT.656 output format for both interlaced and progressive inputs
- Output resolution up to SVGA (pseudo BT.656)

#### **On Screen Display**

- 256 font RAM and 512 display RAM
- · Four windows font OSD with bordering/shadowing
- 1/2/3/4 bits/pixel
- Supports variable width (12/16), height (2~32)

#### **Image Processing**

- High quality scaler with both up/down and nonlinear scaling support
- Panorama/water-glass scaling
- Built-in 2D deinterlacing function
- Programmable hue, brightness, saturation, contrast and sharpness
- Programmable cropping of input video and graphics
- Independent RGB gain and offset controls
- Programmable 8-bit Gamma correction for each color
- · Operates in frame sync mode
- Black/white Stretch

#### **Clock Generation**

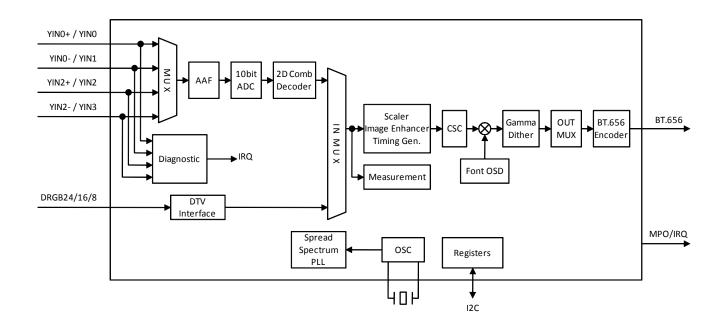
- Spread spectrum clock
- · Selectable modulation frequency and spread width

#### **Power Management**

- Supports functional based independent power-down
- 1.8/3.3 V operation

#### **Miscellaneous**

- · Short to battery detection test
- Short to ground detection test
- Supports 2-wire serial bus interface
- Single 27MHz crystal
- 56 lead QFN (with wettable flanks)



**TW8809 Functional Block Diagram** 

For additional products, see www.intersil.com/en/products.html

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