DATASHEET

TW8811C

TFT Flat Panel Controller with Built-in 3D Video Decoder, Triple ADCs and PIP Support

FN7760
Rev.0.00
December 06, 2010

TW8811 is a high performance integrated LCD display processor designed for in-car display applications including navigation systems, in dash DVD players, rear-seat/

head-mount displays, and automotive TVs. The chip uses a single 27Mhz crystal, comes in a 208-pin LQFP package and is qualified for automotive applications including -40°C to +85°C temperatures and 1,000 hours of reliability testing. TW8811 requires an external 64mbit SDRAM to support PIP and other advanced functions.

Inputs include composite video, s-video, YPbPr, analog RGB, 24-bit digital RGB and 8/16/24 bit YCbCr. For composite video streams, a high quality 3D comb filter for NTSC and PAL with concurrent 3D noise reduction is integrated to reduce artifacts typically found in analog video signals.

In addition to a 3D comb filter, a number of proprietary image processing algorithms are implemented in TW8811 to improve picture quality including a built in 2D-deinterlacing engine with low angle compensation, black/white stretch and color enhancement. TW8811 has a sophisticated PIP function that includes Picture in Picture (PIP) with variable sub-window size, picture over picture (POP), and multiple PIP.

The TW8811 on-screen display can select 256 colors from 24-bit colors (16.7 million colors) and is a graphic style OSD with a variety of functions including blinking, transparency, blending, and multi-window support. The TW8811 also supports external 18-bit OSDs with external alpha blending control.

Applications

- Navigation system
- In dash DVD
- Rear-seat/head-mount display
- Automotive TV

Features

Analog Video Decoder

- NTSC (M, 4.34) and PAL (B, D, G, H, I, M, N, N, combination), PAL (60), SECAM with automatic format detection
- Three 10-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
- Software selectable analog inputs allows any of the following combinations:
- Up to 4 composite video
- Up to 2 S-Video
- Up to 1 YPbPr
- High quality motion adaptive 3D comb filter for both NTSC and PAL with concurrent 3D noise reduction
- PAL delay line for color phase error correction

Analog RGB Inputs

- Triple 80 MHz 9-bit ADCs with clampling and programmable gain amplifier
- Up to three independent RGB / YPbPr channels with corresponding SOG
- Built-in line locked PLL with sync separator
- Allows high resolution components inputs like DTV 480p, 720p, 1080i

24-bit Digital RGB and 8/16/24-bit YCbCr Inputs

- Allows connection with alternative Video and PC Graphics inputs
- Supports both 656 and 601 video formats
- Allows connection to HDMI

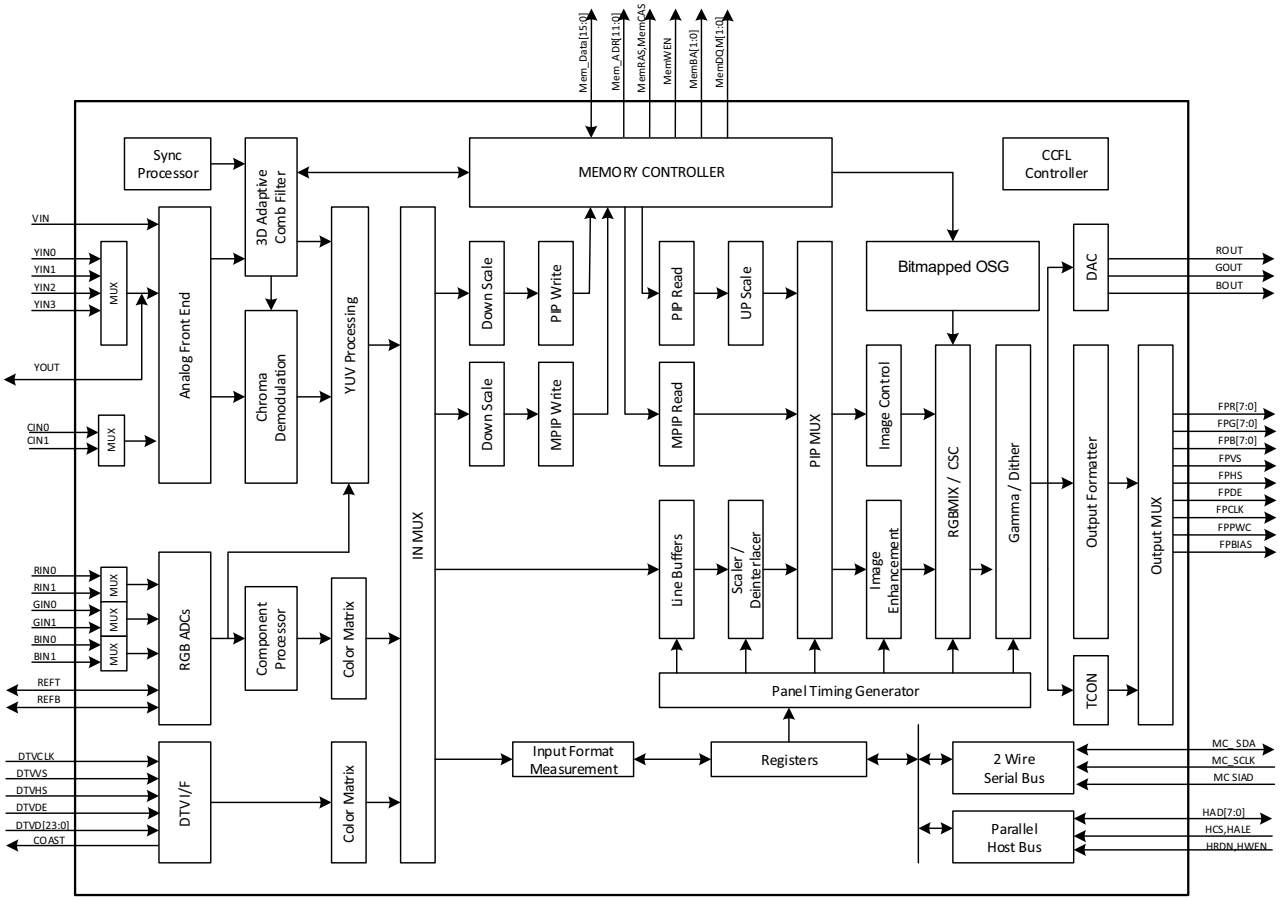

FIGURE 1. TW8811 FLAT PANEL TV/MONITOR CONTROLLER FUNCTIONAL BLOCK DIAGRAM

© Copyright Intersil Americas LLC 2010. All Rights Reserved.
All trademarks and registered trademarks are the property of their respective owners.

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

Intersil products are manufactured, assembled and tested utilizing ISO9001 quality systems as noted in the quality certifications found at www.intersil.com/en/support/qualandreliability.html

Intersil products are sold by description only. Intersil may modify the circuit design and/or specifications of products at any time without notice, provided that such modification does not, in Intersil's sole judgment, affect the form, fit or function of the product. Accordingly, the reader is cautioned to verify that datasheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.

For information regarding Intersil Corporation and its products, see www.intersil.com