![RENESAS]

NOT RECOMMENDED FOR NEW DESIGNS
RECOMMENDED REPLACEMENT PART
TW8811D (Pin Compatible) OR
TW8823 (Not Pin Compatible)

DATASHEET

TW8811C

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

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
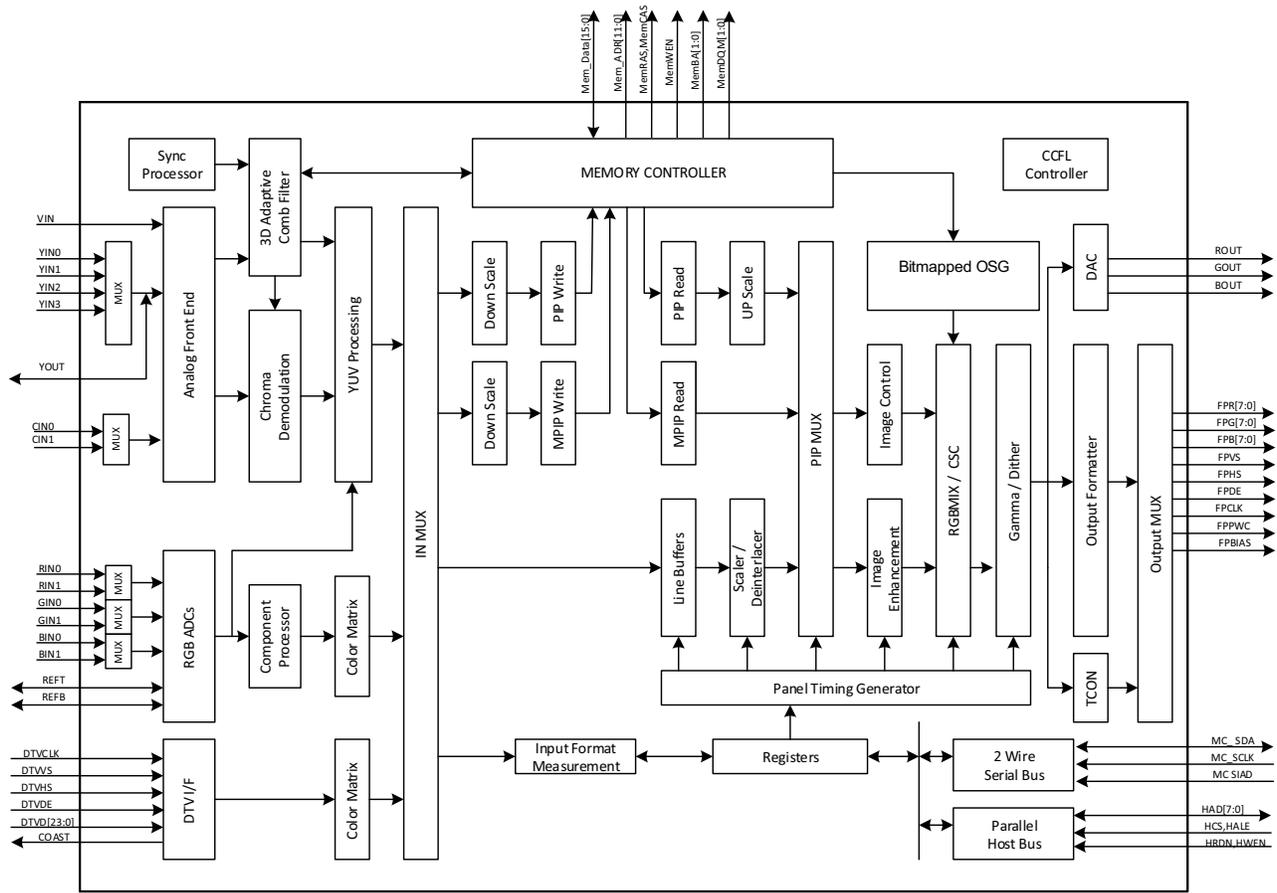- Allows connection to HDMI

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

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