

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

TW8810C

The TW8810 is a highly integrated LCD TFT flat panel controller for Sharp™ dual-view LCD panel primarily targeting front console and rear-seat automotive infotainment applications. The TW8810 integrates a high quality NTSC/PAL/SECAM 3D video decoder and a 2D de-interlacer with low angle compensation. In addition, built-in dual-view mixer enables direct support for Sharp™ dual-view panel.

Applications

- Sharp™ Dual View Display based applications only
- Navigation + DVD + TV
- Back up Camera
- Rear Seat Entertainment
- Car TV
- Portable DVD player
- Portable TV
- In Flight Entertainment

Features

- Supports analog inputs including CVBS, S-Video, YPbPr & RGB signals and digital inputs including 8/16/24 bit RGB/YCbCr. Interlaced and progressive ITU 656 inputs are supported
- Supports Sharp™ dual-view digital panel with resolutions up to WVGA
- Integrated low cost 16-bit SDRAM memory controller supporting up to 8MB SDRAM external memory
- Supports PIP/MPIP
- Built-in dual-view mixer block to support Sharp™ dual-view digital panel
- Built-in dual window bit-mapped (4/8-bits) OSD
- Supports external 18-bit OSD with alpha blending control
- PIP Overlay
- Embedded Image Enhancement
- Programmable CTI, hue, brightness, saturation, contrast & sharpness control
- Black/White Stretch
- Programmable favorite color enhancement- up to three colors (Skin, Grass & Sky)
- Programmable Gamma Correction tables

3D 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

Features (Continued)

Analog RGB Inputs

- Triple high speed 8-bit ADCs with clamping and programmable gain amplifier.
- Up to two independent RGB / YPbPr channels with corresponding SOG
- Built-in line locked PLL with sync separator
- Allows high resolution components inputs like DTV 480i, 480p, 576i, 576p, 720p & 1080i
- Supports PC inputs up to SXGA

8/16/24-bit YCbCr Inputs

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

TFT Panel Support

- Supports Sharp™ dual-view panel up to WVGA
- Supports 3, 4, 6 or 8 bits per pixel up to 16.8 million colors with built-in dithering engine
- Support single channel TTL panel
- Built-in programmable timing controller

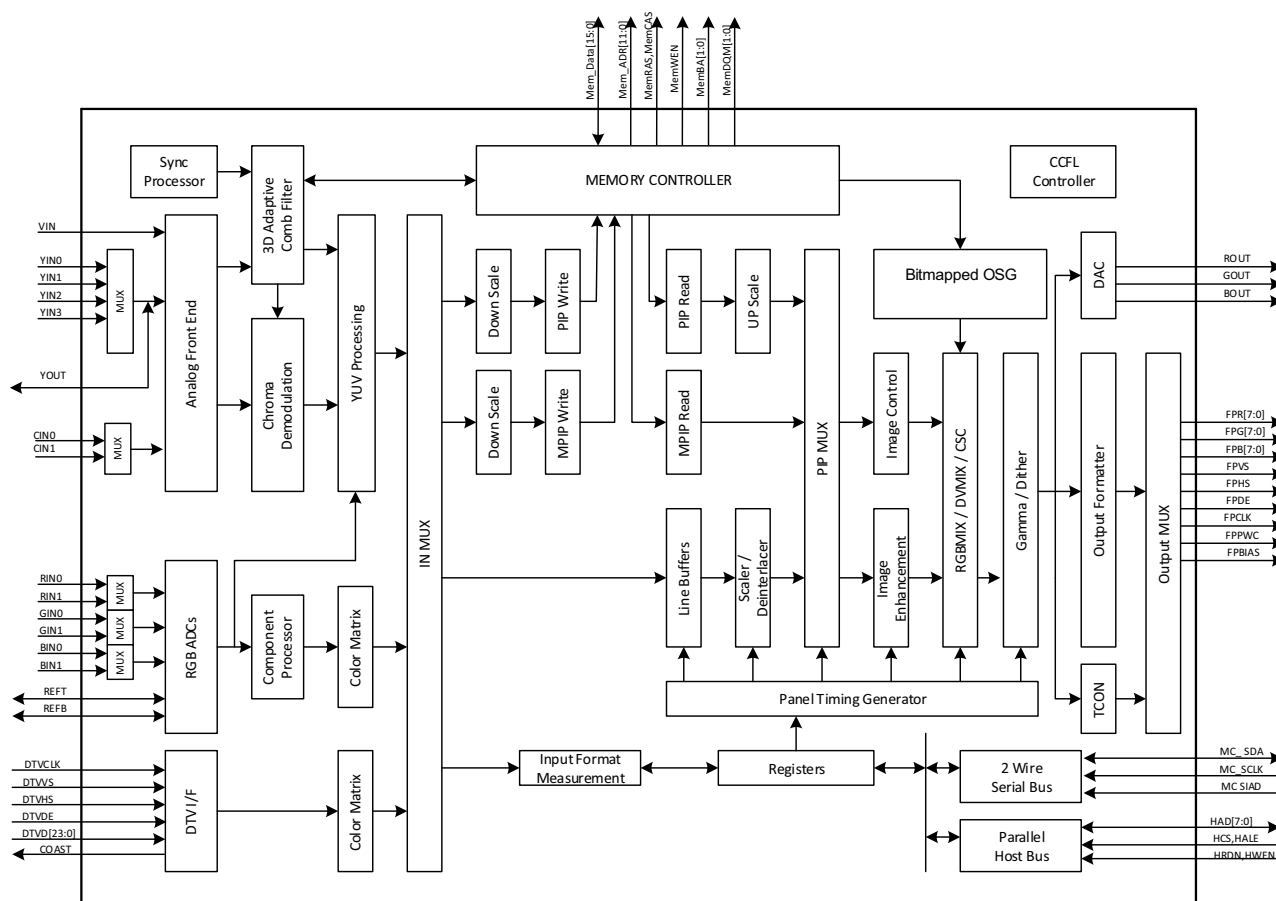


FIGURE 1. TW8810 FLAT PANEL TV/MONITOR CONTROLLER FUNCTIONAL BLOCK DIAGRAM

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