TW8849

Video Processor with LVDS Interfaces, Image Enhancement, and Video Integrity Diagnostics

The TW8849 is a highly integrated LCD video processor that incorporates many of the features required to create a multipurpose LCD display system. These features include two LVDS Open LDI input interfaces, two separate high quality scaler and de-interlacer engines, as well as dual channel LVDS Open LDI output interfaces to drive up to 2 LCDs. The TW8849 can support input resolutions up to 1080p and can drive LCD panels at resolutions up to 1920x1080. The TW8849's video processing capability includes 10-bit per color image enhancement processing, arbitrary H/V scaling, panoramic scaling, image mirroring, image adjustment, black and white stretch, Automatic Contrast Adjustment, and smooth input switching. In addition, the TW8849 has image diagnostic capabilities to determine if the input video is corrupted or frozen. The feature set and versatility of this device makes it an ideal solution for all Automotive LCD display applications.

Applications

- Automotive display
- Industrial/military displays
- Portable/consumer displays

Related Literature

For a full list of related documents, visit our website:

- TW8849 device page

Features

LVDS Open-LDI Input Support

- Two single-channel LVDS open-LDI inputs, up to 104MHz for each channel
- Dual-channel LVDS open-LDI input, up to 150MHz in Dual mode (75MHz per channel)

LVDS Panel Support

- Supports single-channel LVDS panels up to 1920x720 resolution (104MHz)
- Supports dual-channel LVDS up to 1920x1080 resolution (150MHz)

Image Processing

- Two high-quality scalers with both up/down scaling support
- Supports programmable cropping of input video and graphics
- Automatic Contrast Adjustment (ACA) on one scaler path
- 10-bit per color processing
- 10-bit image enhancement processing and 10-bit Gamma correction

Clock Generation

- Spread spectrum PLL integrated to each scaler path
- Programmable modulation frequency and spread width

Miscellaneous

- Fast Mode plus I^2C interface up to 1.2Mbps with zero hold time
- Up to four 10-bit PWMs
- GPIOs
- Pin swapping (MSB ↔ LSB)
- Two separate input measurement engines with continuous measurement capability
- Smooth input switching using shadow registers
- 1.2V internal operation
- 1.8/3.3V I/O support
- Single 27MHz crystal
- 156 Ld LQFP with exposed thermal pad
- TW8849AT-LA1-GE is AEC-Q100 qualified

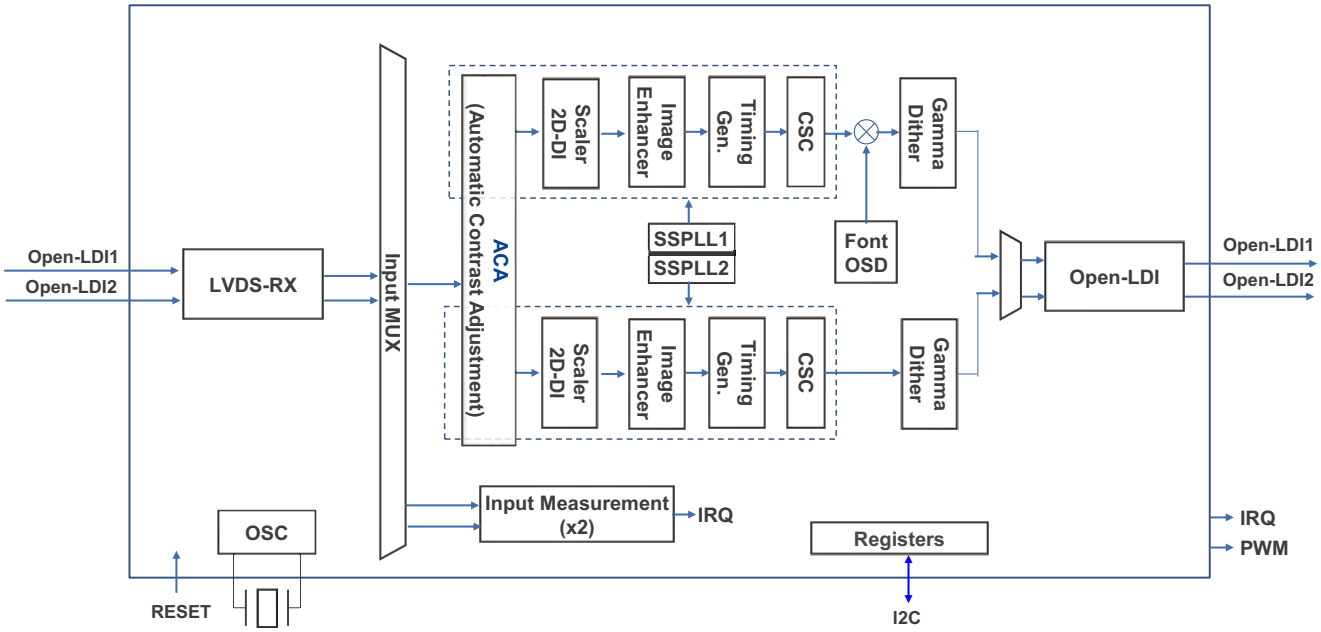

Figure 1. TW8849 Functional Block Diagram

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