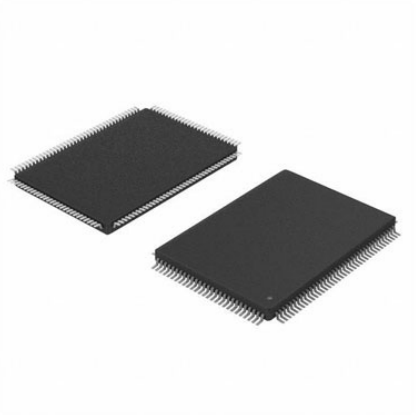
TW8836-LB2-CE

Data Sheet

Video Processor, In-Car Display, Pico Projector & Portable DVD & DVR Players, 3.3V Supply, LQFP-128

Manufacturers	Renesas Technology Corp
Package/Case	128-LQFP Exposed Pad
Product Type	Multimedia ICs
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for TW8836-LB2-CE or Email to us: sales@ovaga.com We will contact you in 12 hours. RFQ

General Description

The TW8836 is a highly integrated LCD video processor that incorporates many of the features required to create a multipurpose LCD display system into a single package. This includes a high quality, 2D comb NTSC/PAL/SECAM video decoder, triple high-speed RGB ADCs, an LVDS and TTL digital input interface,a high-quality scaler and deinterlacer, and a versatile OSD, with a high-performance output panel interface for MCU and LVDS or TTL. The TW8836 can support input resolutions up to 1080p and can drive LCD panels at resolutions up to 1366 x768. The TW8836's video processing capability includes arbitrary H/V scaling, panoramic scaling, image mirroring, image adjustment and enhancement, and black and white stretch. The feature set and versatility of this device makes it an ideal solution for in-car LCD display applications and portable display applications such as pico projectors.

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

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 allow composite, S-video, analog YPbPr, or RGB

High quality adaptive 2D comb filter for NTSC/PAL inputs

PAL delay line for color phase error correction

Image enhancement with 2D dynamic peaking/CTI

Digital subcarrier PLL for accurate color decoding

Programmable hue, brightness, saturation, contrast, sharpness

Selectable differential or single-ended CVBS input

Digital horizontal PLL and advanced synchronization processing for VCR playback and weak signal performance

High quality horizontal and vertical filtered-down scaling with arbitrary scale-down ratio

Up to 2CH differential or 4CH single-ended CVBS input

Supports detection of Macrovision copy protection

Analog RGB Inputs
Triple high-speed 10-bit ADCs with clamping and programmable gain amplifier

SOG and H/VSYNC support for YPbPr or RGB input

Built-in line locked PLL with sync separator

Supports input resolutions VGA (25MHz) to 1080p (150MHz)

Digital Inputs Support
Supports both BT.656 and 601 video formats

Supports YCbCr/RGB 24-bit, VGA (25MHz) to 1080p (150MHz) resolution

Single channel LVDS input, from VGA (25 MHz) up to 720p (75 MHz) resolution

Supports RGB 565 + BT.656 at the same time

TFT Panel Support
Built-in programmable timing controller

Supports 3, 4, 6, or 8 bits per pixel up to 16.8 million colors with built-in dithering engine

Supports digital panels (TTL) or single channel LVDS panels up to WXGA (1366 x768) resolution, 85MHz

Supports serial (8-bit) RGB panel

Font Based On-Screen Display
Eight window font OSD with bordering/shadow

10kB programmable font RAM and 512 display RAM

1/2/3/4 bits/pixels

Supports variable width (12/16), height (2~32)

SPI Flash Based On-Screen Display
Nine bitmap based OSD windows in two layers through SPI with alpha blending between layers

Supports 4/6/8 bits/pixels

Supports RLE decompression for two windows

Image Processing
High-quality scaler with both up/down and panorama/water-glass scaling support

Built-in 2D deinterlacing function

Programmable brightness, contrast, saturation, hue, and sharpness

Programmable color transient improvement control

Supports programmable cropping of input video and graphics

Independent RGB gain and offset controls

DTV hue adjustment

Programmable 8-bit gamma correction for each color

Black/white stretch

Clock Generation
Spread spectrum profile based on triangular modulation with center spread

Programmable modulation frequency and spread width

Timing Controller (TCON)
Supports programmable interface signals for control

Column (source) driver/row (gate) driver

MCU
Industry-standard 8052 based

Code fetch from external SPI flash memory

256B code cache

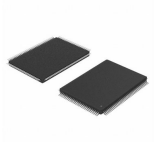
2k XDATA memory

Supports power save mode with 32k internal clock

ISP (In System Programming) through I^2C

Supports 24-bit addressing

Related Products



TW8836AT-LB2-GE

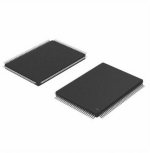
Renesas Technology Corp

128-LQFP

TW6865-TA1-CRH

Renesas Technology Corp

144-TQFP



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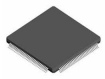
Renesas Technology Corp

LQFP128



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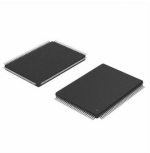
Renesas Technology Corp

TQFP128



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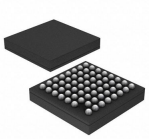
Renesas Technology Corp

128-LQFP



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Renesas Technology Corp

172-TFBGA

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48pin-QFN

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48pin-QFN