

TW8820

LCD Controller

FN8279
Rev. 1.00
April 24, 2014

Description

The TW8820 incorporates many of the features required to create a multi-purpose Video Door phone intercom LCD display system in a single package. It integrates a high quality 2D comb NTSC/PAL/SECAM video decoder, high quality scaler, and image enhancement functions which include Black and White Stretch and Gamma Correction. It also supports panoramic scaling for conversion to wide screen display. TW8820 supports analog composite video input and the output supports a wide variety of digital LCD panel types with its built-in timing controller.

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
- 10-bit ADC 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
- High quality adaptive 2D comb filter for both NTSC and PAL inputs
- PAL delay line for color phase error correction
- Image enhancement with 2D dynamic peaking and CTI
- Digital sub-carrier PLL for accurate color decoding
- Digital horizontal PLL and advanced synchronization processing for VCR playback and weak signal performance
- Programmable hue, brightness, saturation, contrast and sharpness

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 up to WVGA/SVGA resolution
- Supports Serial (8-bit) RGB panels

TIMING CONTROLLER (TCON)

- Supports programmable timing interface signals for control
- Column (source) driver/row (gate) driver

ON SCREEN DISPLAY

- 6912 byte programmable font RAM and 256 display RAM
- Four windows font OSD with bordering/shadowing
- 1/2/3/4 bits/pixel
- Supports variable width (12/16), height (2~32)

IMAGE PROCESSING

- High quality scaler with both up/down and nonlinear scaling support
- Panorama/Water-glass scaling
- Built-in 2D de-interlacing function
- Programmable hue, brightness, saturation, contrast and sharpness
- Programmable cropping of input video and graphics
- Independent RGB gain and offset controls
- Programmable 8-bit Gamma correction for each color
- Operates in Frame Sync mode
- Black/White Stretch

CLOCK GENERATION

- Spread spectrum clock
- Selectable Modulation frequency and spread width

MCU

- Industry standard 8052 based
- Code fetch from external SPI flash memory
- 512 byte XDATA memory

POWER MANAGEMENT

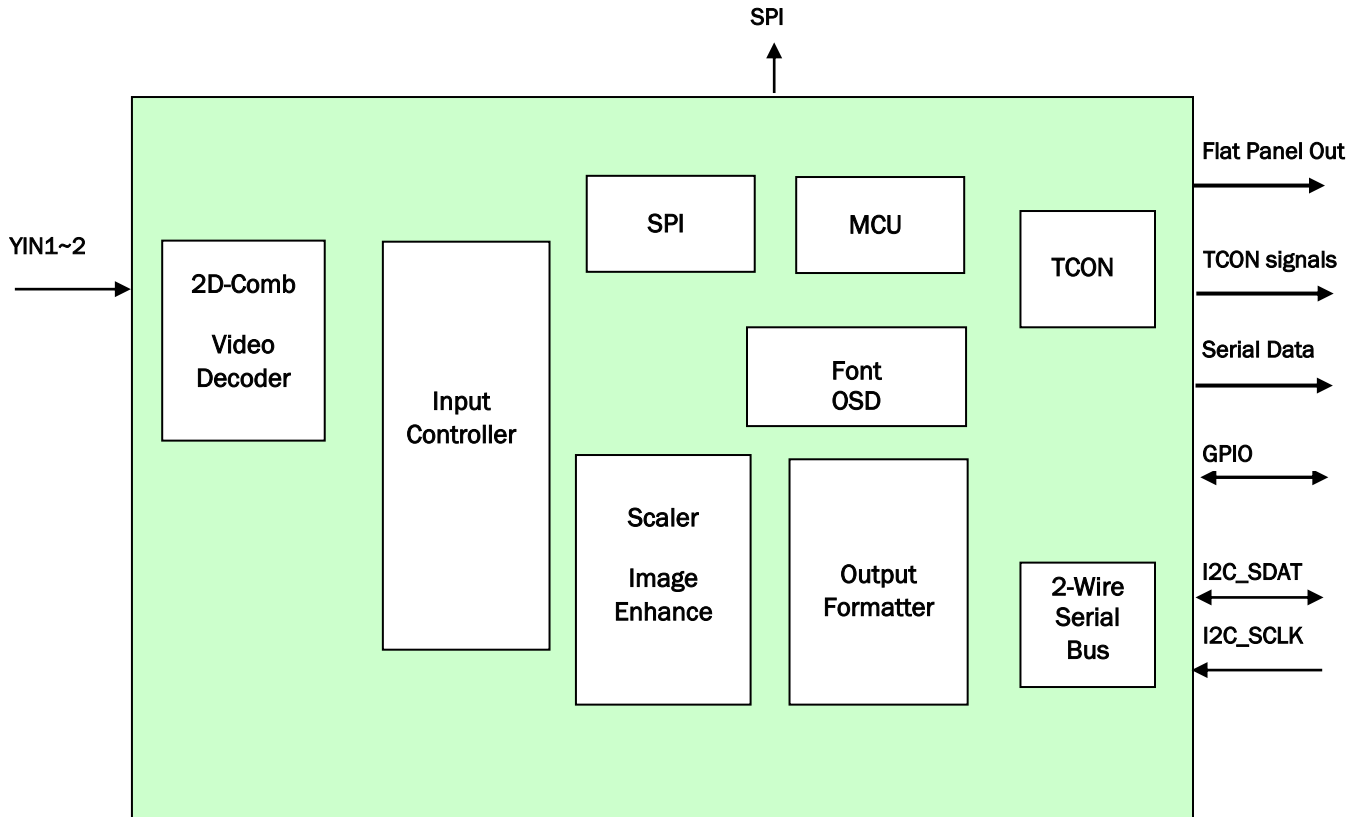
- Supports functional based independent
- Power-down
- 1.8/3.3V operation

MISCELLANEOUS

- Supports 2-wire serial bus interface
- Built-in Auxiliary ADC input
- Single 27MHz crystal
- 64 pin LQFP package

Applications

- Video door phone intercom display controller
- Portable DVD players, media players, and DVRs
- Rear Camera Displays



TW8820 FUNCTIONAL BLOCK DIAGRAM

© Copyright Intersil Americas LLC 2012-2014. All Rights Reserved.
 All trademarks and registered trademarks are the property of their respective owners.

For additional products, see www.intersil.com/product_tree

Intersil products are manufactured, assembled and tested utilizing ISO9001 quality systems as noted in the quality certifications found at <http://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 <http://www.intersil.com>

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Display Drivers & Controllers](#) category:

Click to view products by [Renesas](#) manufacturer:

Other Similar products are found below :

[ICB2FL01G](#) [HV5812PJ-G-M904](#) [TW8813-LB2-GR](#) [TW8811-PC2-GR](#) [MAX1839EEP+](#) [TW9907-TA1-GR](#) [LX27901IDW](#) [SSD2828QN4](#)
[MAX7370ETG+](#) [DLPA1000YFFT](#) [ICB2FL01GXUMA2](#) [DLP2000FQC](#) [PAD1000YFFR](#) [S1D13746F01A600](#) [FIN324CMLX](#) [AD8387JSVZ](#)
[DLPC6421ZPC](#) [HV852K7-G](#) [HV859K7-G](#) [HV857K7-G](#) [DIO2133CT14](#) [S1D13L03F00A100-40](#) [TW2836-BA1-GR](#) [SSD2829QL9](#)
[MAX749CSA+T](#) [MAX4820EUP+T](#) [ICL7135CAI+](#) [ICL7135CMH+D](#) [ICL7137CMH+D](#) [MAX14515AEWA+](#) [MAX14521EETG+](#)
[MAX25221BATJ/V+](#) [DS3882E+C](#) [S1D13748B00B100](#) [S1D13A05B00B200](#) [MAX3738ETG+T](#) [MAX14514ETD+](#) [MAX4990ETD+T](#)
[MAX8722CEEG+](#) [MAX749CPA+](#) [MAX8785AETI+](#) [ICL7135CQI+](#) [HV518PJ-G-M903](#) [HV5812P-G](#) [HV5812PJ-G](#) [HV7224PG-G](#)
[HV853K7-G](#) [HV860K7-G](#) [HV6810WG-G](#) [HV823LG-G](#)