Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Analog Video Decoder/Encoder

TW9920

The TW9920 is a multistandard video decoder and encoder chip that is designed for multimedia applications. This low power, integrated solution has a 4H comb filter based NTSC/PAL/SECAM video decoder that converts analog CVBS or S-Video signals into digital YCbCr output. The integrated analog video encoder converts digital YCbCr inputs into analog CVBS or S-Video output.

Features

Video Decoder

- NTSC (M, 4.43) and PAL (B, D, G, H, I, M, N, N combination), PAL (60), SECAM support with automatic format detection
- Software selectable analog inputs allow any of the following combinations, e.g., 4 CVBS or (3 CVBS and 1 Y/C)
- Two 9-bit ADCs and analog clamping circuit
- Fully programmable static gain or automatic gain control for the Y channel
- Programmable white peak control for the Y or CVBS channel
- 4-H adaptive comb filter Y/C separation
- PAL delay line for color phase error correction
- Image enhancement with 2D peaking and CTI
- Digital subcarrier PLL for accurate color decoding
- Digital horizontal PLL for synchronization processing and pixel sampling
- Advanced synchronization processing and sync detection for handling nonstandard and weak signal
- Programmable hue, brightness, saturation, contrast, sharpness, Gamma control, and noise suppression
- Automatic color control and color killer
- Detection of level of copy protection according to Macrovision standard
- Programmable output cropping
- ITU-R 601 or ITU-R 656 compatible YCbCr(4:2:2) output format
- VBI slicer supporting industrial standard data services
- VBI data pass through, raw ADC data for Intercast™

Video Scaler

- High quality horizontal filtered scaling with arbitrary scale down ratio
- Phase accuracy better than 1/32 pixel
- Selectable antialias filter
- Vertical down scaling by line dropping

Video Encoder

- Support NTSC/PAL and its substandard format output
- ITU-R 656 compatible video interface
- Luminance and chrominance filter
- Stable 27MHz crystal clock for subcarrier generation
- Five 10-bit digital-to-analog converters at 27MHz sample rate for generating CVBS or Y/C and YCbCr simultaneously

Miscellaneous

- Two-wire MPU serial bus interface
- Power-down mode
- Field locked audio clock generation
- Typical power consumption 0.62W
- Single 27MHz crystal for all standards
- Supports 24.54MHz and 29.5MHz crystal for high resolution square pixel format decoding
- 3V tolerant I/O
- 2.5/3.3V power supply
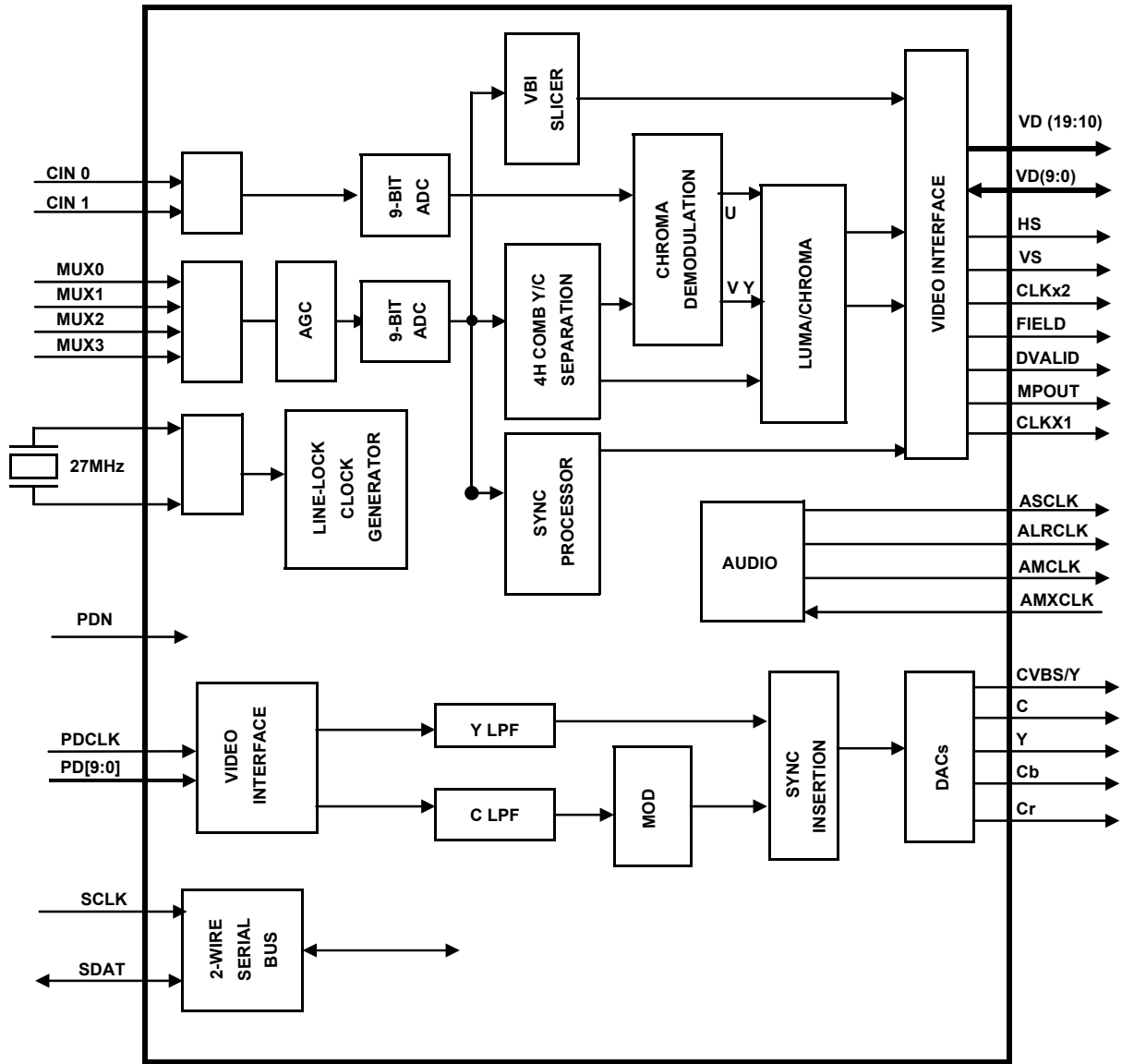- VFBGA package

Block Diagram

FIGURE 1. BLOCK DIAGRAM

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