



AL330B

**Integrated Video SOC
for Digital Display Devices**



Introduction

The AverLogic AL330B is a highly integrated, video display SOC that provides a complete, single-chip video management system for a wide range of digital display devices including Digital Panels, AMOLED screens, In-Car video displays, TFT-LCD systems and more.

At a Glance

Inputs -

9 Analog Video Inputs; CVBS, S-Video, YPbPr (480P/576P); Analog RGB; 3-Ch/10-bit ADC, AGC & ACC; Auto Multi-Standard NTSC, PAL, SECAM detection. CCIR-656/YCbCr Digital Input.

Functions -

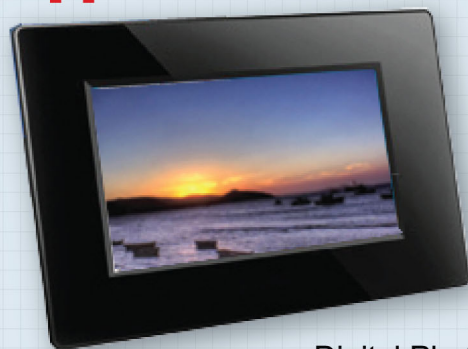
Video Decoder with 2D Adaptive Comb Filter, CON/BRI/HUE/SAT adjustment, Image & Edge Sharpness, VBI decoding, Programmable Scaling, OSD, BLE, WLE and more!

Outputs -

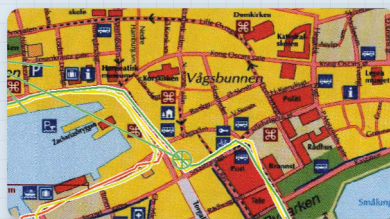
24/18/12 bit Digital RGB Output; Digital LCDs (160*120 to 800*600), AMOLED Panels, Programmable TCON for LCD.

See back for more details

Applications



Digital Photo Frames



In-Car Displays

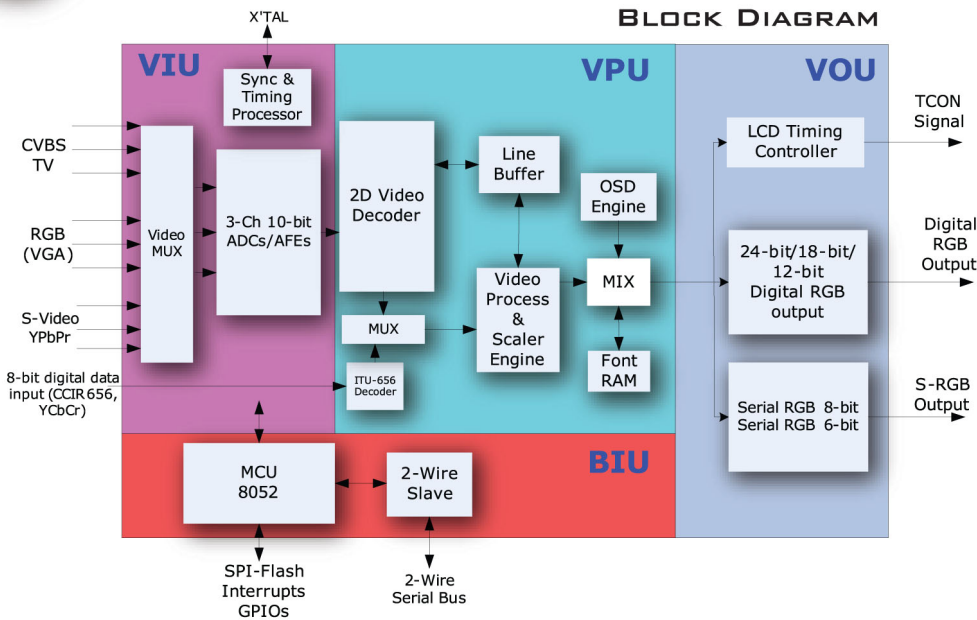


TFT-LCD Displays



AMOLED Displays

Door phones, Baby Monitors and More!

BLOCK DIAGRAM

Analog Input:

- Supports 9 analog video inputs
- Supports CVBS, S-Video & YPbPr(480P/576P) inputs
- Supports Analog RGB input
- 3-Ch, 10-bit ADC, AGC & ACC
- Supports Auto Multi-Standard NTSC/PAL/SECAM mode detection
- Adaptive 2D Comb-Filter video decoding for Y/C separation

Digital Input:

- Support CCIR-656/YCbCr Digital Input

OSD

- Built-in internal OSD 4K bytes of RAM for programmable OSD functions
- Up to 8 OSD colors
- OSD Blinking & Blending
- Programmable OSD window Position
- Programmable OSD window Size
- X,Y mirror for rear view or flip down applications
- External OSD signals

Video Processing & Scaler:

- Closed Caption/V-Chip/WSS/WSS-J VBI decoding
- Macrovision copy protection detection
- Contrast/Brightness/Hue/Saturation adjustment
- Sharpness adjustment for Edge Enhancement
- Black Level Extension (BLE)
- White Level Extension (WLE)
- YCbCr to RGB Color Space Conversion
- Programmable H/V up/down Scaling
- 4:3 to/from 16:9 conversion
- Programmable 3-Channel Gamma Correction

Applications

- In-Car TV, GPS, Navigation
- Entertainment Display Systems
- Video Door Phone, Baby Monitor
- Digital Photo Frames
- Small to Medium Multimedia TFT-LCD
- AMOLED Display Monitor
- Portable TV/DTV (ATSC, DVB-T/S)

Miscellaneous

- Built-in 8052 MCU and 1K byte internal SRAM
- Dedicated UART & INT pins
- Supports SPI-Flash and ISP (In-System Programming) function
- Supports three PWM generators for general purpose control
- Supports interrupt output pin for hardware mode detection
- Built-in Test Pattern Generator (Color Bar, Grey Scale, etc.)
- Low power design
- 128-pin LQFP 14 x 14 mm

Digital Output & Tcon

- 24-bit/18-bit/12-bit Digital RGB Output
- Supports Image Mirror and Flip functions
- Programmable TCON for various Digital LCD panels
- Supports Serial RGB format interface for LTPS Digital Panels (Such as Topoly and AUO)
- Supports Serial RGB format interface for AMOLED Panels (Such as CMEL)
- Supports Digital LCD panels: 160*120, 320*240, 640*480, 800*480, 800*600 etc.