

T128 Introductio

■Cost Effective Highly Integrated Triple ADC + ITU656/601 Decoder + digital RGB + 2D Video Decoder + 8051 + OSD + Scaler + TCON + DAC + DC-to-DC + LED/CCFL controls

- Integrates 10-bit Triple Analog to Digital Converters (ADC) & Phase Locked Loop (PLL), for supporting CVBS, S-Video, YPbPr and RGB inputs
- Scaler supports 2-D adaptive intra-field de-interlacer and non-linear 16:9 aspect ration.
- Requires no external Frame Buffer Memory for de-interlace.
- Integrate ITU656/601_8/L601_16 Decoder
- Support digital RGB565/666/888 inputs
- Built-in 8051 MCU
- Advanced On Screen Display (OSD) function
- Programmable Timing Controller (Tcon) for Car TV applications
- Multi-standard color decoder with 2D adaptive comb filter
- Innovative and flexible design to reduce total system cost

■Triple 10-bits ADCs

- 80MSPS Conversion Rate ADC
- Built-in Pre-amp, mid-level & ground clamp
- Automatic Clamp Control for CVBS, Y and C
- Programmable Static Gain Control or Automatic Gain Control for CVBS or Y/C
- Max Input configuration up to 6xCVBS, 3xS-video
- Build-in Line-Lock PLL for RGB and YPbPr.
- Phases Tracking and Boundary for adjusting input quality.

■Digital Video Enhancement

- Separate Luminance and Chroma Enhancer
- Y (Luma) Supports Luminance BLE, DLTi., Contrast and Brightness adjustment
- C (Chroma) Supports DCTI, Saturation and Hue adjustment.

■FIR Based Advanced Scaling Engine

- Coefficient based sharpness filters
- Independent vertical and horizontal scaling
- 16:9 Non-linear Aspect ratio

■Crystal Oscillator Circuit

- Direct interface to a (27.0MHz) Crystal
- Also provide a buffered clock output for external Micro-controller

■LCD Interface

- Provides 3x256 Gamma correction for panel compensation

- Supports image pan functions
- Programmable Timing Controller
- Built-in software adjustable VCOM voltage
- RGB Triple DAC output
- Integrated high efficiency DC-DC power conversion unit for gate and source drivers reduces energy consumption
- Integrated TFT-LCD backlight inverter drive unit supports CCFL/LED typed backlight
- Software adjustable lamp dimming

■Built-in On Screen Display Engine

- 8K-word OSD1 and 8K-word OSD2 memory
- Supports text or bitmap modes
- Supports character blinking and overlay functions
- Fully programmable character mapping
- Supports alpha blending & Zoom-in/Zoom-out function
- Built-in 114+ fonts (18x12, 24x16 each)
- Optional fonts stored in off-chip serial ROM
- Optional Pattern-Filled background

■Digital Test Pattern Generator

- Programmable standard & special panel burn-in test patterns
- Support special border frame blocking mode

■Independent Display Phase Lock Loop

- Generates pixel clock output to panel
- Supports free run OSD mode

■Misc.

- Supports 2-wire I²C (Slave/Master)
- Supports external SPI flash ROM with Cache
- Pulse Width Modulation Outputs
- General Purpose Input/Output (GPIO)
- Built-in 8051 MCU with Cache and expanded access buffers.

■Design For Testability

- Scan chain insertion
- Separated analog & digital test modes

■Power Supply: +1.8V, +3.3V and +5V

■Package: 128-pin LQFP