

T101A Introduction

■Cost Effective Highly Integrated Triple ADCs + 2D Video Decoder + OSD + VBI Data Decoder+ Scaler + TCON

- Integrates 9-bit Triple Analog to Digital Converters (ADC) & Phase Locked Loop (PLL)
- Scaler supports 2-D adaptive intra-field de-interlacer and non-linear 16:9 aspect ratio.
- Requires no external Frame Buffer Memory for deinterlacer.
- 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 9-bit Analog to Digital Converters (ADC)

■27MSPS Conversion Rate

- Built-in Pre-amp, mid-level & ground clamp circuit
- 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 9xCVBS, 3xS-video and 3xCVBS, 3xYPbPr,

Digital Video Enhancement

■Separate Luminance and Chroma Enhancer

- Y Supports Luminance Peaking, DLTI, Black Level Expansion, Contrast and Brightness adjustment
- C Supports DCTI, Saturation and Hue adjustment.

Advanced Scaling Engine

■Two Dimensions FIR Scaler

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

■LCD Interface

- Provides Gamma correction for panel compensation
- Supports image pan functions
- Programmable Timing Controller
- RGB Single Channel output

■Color Management

- YcbCr-to-RGB Color Space Converter
- RGB Gamma Correction
- Dithering engine converts RGB888 to RGB777

RGB888 to RGB666
RGB888 to RGB555
RGB888 to RGB444

■Built-in On Screen Display Engine

- 3K-word OSD SRAM memory
- Supports font or bitmap modes
- Supports character blinking, overlay, shadow and border functions
- Fully programmable character mapping
- Supports alpha blending & Zoom-in/Zoom-out function
- Optional fonts can be stored in off-chip serial EEPROM

■Versatile VBI Data Decoder

- Supports Close Caption, Wide Screen Signalling and Teletext

■Crystal Oscillator Circuit

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

■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

■Flexible Data Output Formatting

- Four software configurable output modes:
 1. 8-bit mode = SerialRGB & 1pixel/3clocks
 2. 18-bit mode = R6G6B6 & 1 pixel/clock
 3. 24-bit mode = R8G8B8 & 1 pixel/clock
 4. Progressive or Interlaced 24-bit 4:4:4 YCbCr mode
- Complex output data bits swap, reverse, re-direct capability to reduce PCB layout work
- Selectable LVDS output data re-mapping

■Serial Bus Interface

- Supports 2-wire (normal speed) or 4-wire (high speed) modes

■Pulse Width Modulation Outputs

■Design For Testability

- Scan chain insertion
- Separated analog & digital test modes

■Power Supply: +2.5V & +3.3V

■Package: 100-pin PQFP