T116 Introduction

■**Cost Effective Highly Integrated ITU656/601 Decoder + OSD + Scaler + TCON + DAC + VCOM + DC-to-DC + CCFL/LED**

- Scaler supports 2-D adaptive intra-field de-interlacer and non-linear 16:9 aspect ration.
- Requires no external Frame Buffer Memory for deinterlacer.
- ITU656 Decoder with digital input ports for standard ITU656 input data.
- Alternative 8-bit L601 input
- Advanced On Screen Display (OSD) function
- Programmable Timing Controller (Tcon) for Car TV applications
- Analog RGB or digital Serial RGB output
- Supports DC-to-DC and CCFL/LED control
- Innovative and flexible design to reduce total system cost

■**Separate Luminance and Chroma Enhancer**

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

■**FIR Based Scaler**

- Coefficient based sharpness filters
- 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 Triple DAC output with TCON
- Serial RGB output

■**Independent Display Phase Lock Loop**

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

■**Built-in On Screen Display Engine**

- 1.5K-word OSD SRAM 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 113 12x18 ROM fonts
- Optional fonts can be stored in off-chip serial EEPROM

■**Crystal Oscillator Circuit**

- Direct interface to Crystal (27MHz)
- Optional clock source from crystal or V656 clock
- 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

■**Serial Bus Interface**

- Supports 2-wire I2C bus
- Optional boot mode to fetch configuration in external EEPROM without 8051 required.

■**Pulse Width Modulation Output**

■**General Purpose Input Output (GPIO)**

■**Design For Testability**

- Scan chain insertion
- Separated analog & digital test modes
- RAM BIST

■**Power Supply: +1.8V, +3.3V and +5.0V**

■**Package: 64-pin LQFP**