# FEATURES

Digital Input:
- CCIR656 compliant 8-bit video input port
- Connects to NTSC/PAL video decoders
- Optional second CCIR656 input port
- Spatial de-interlacing function

Analog / Digital Output:
- Supports stripe panels
- 3-channel 30MHz DAC outputs
- Resolution up to 640 x 3(RGB) x 468 for analog panel
- Resolution up to 1024 x 768 (XGA) for digital panel
- Spread spectrum to disturb clock output for EMI suppression

Scaling Engine / T-CON:
- Support 16:9/4:3 aspect ratio/zoom mode display type
- Horizontal/vertical scaling engine
- Integrates programmable small panel TFT-LCD timing controller
- Internal test pattern generator for factory test purpose

Color Management:
- Digital brightness, contrast, saturation, and hue adjustments

- sharpness control
- 10-bit panel RGB Gamma Correction

I/O Interface:
- Support standard CSC compatible interface (2-wire mode)
- Support standard parallel bus interface
- Supports two PWM outputs for backlight and volume control

On-Chip OSD Controller:
- Versatile Font-Base OSD engine with a 32K-bit SRAM Memory
- Fully programmable bitmap and character code mapping
- Eight-colors palette
- 128 fully programmable fonts
- Blinking, transparency and blending

Voltage Generating Circuit:
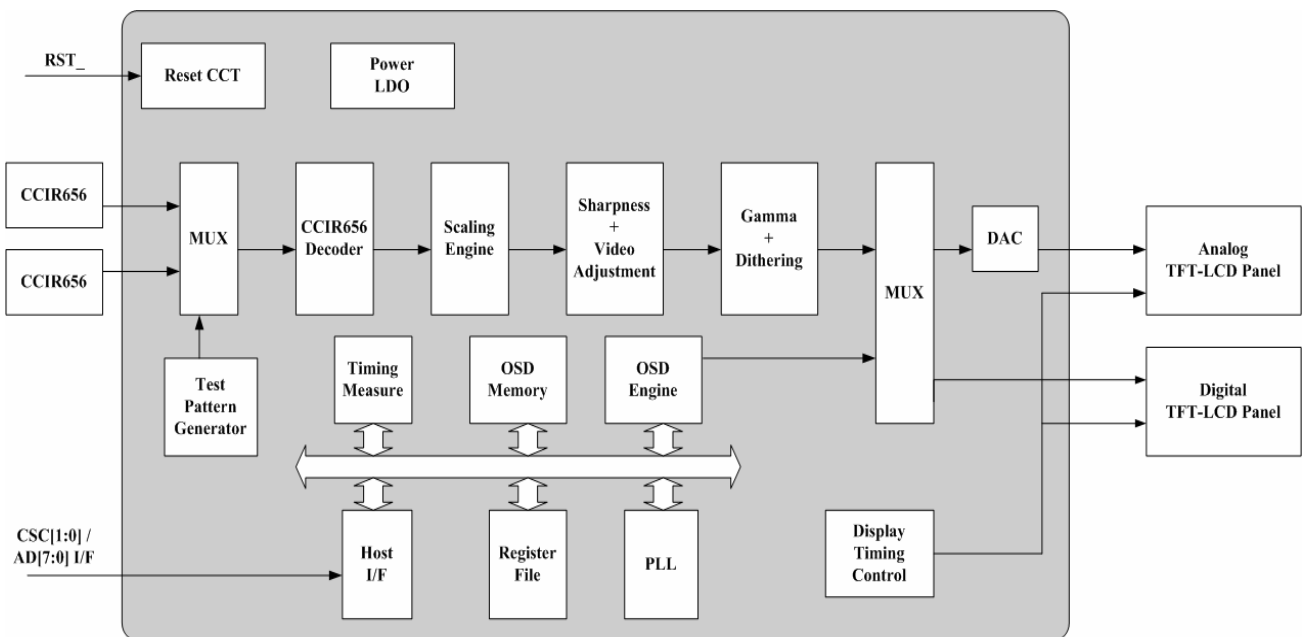- Built-in voltage regulator for 1.8V output

Highly Integrated System-On-A-Chip:
- 5-Volt tolerant inputs
- Two-Layer PCB support
- On-chip reset circuit to eliminate external reset IC

Package:
- +3.3V Power Supply
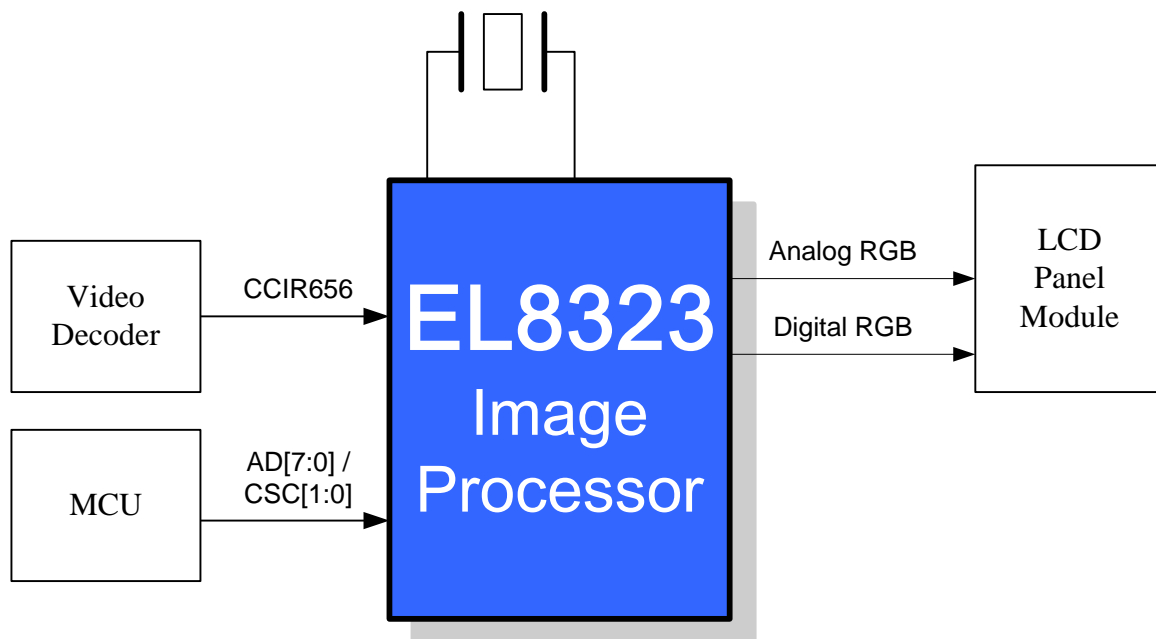- 100-Pin LQFP package

# BLOCK DIAGRAM

## GENERAL DESCRIPTION

The EL8323 is a high-quality image processing IC specifically designed for Portable DVD and Car TV Panels. The EL8323 combines the functionality of scaling and timing control and applies to commercial available analog and digital panels of various resolutions. The chip has two CCIR656 input channels, an analog output from DAC to support analog panels and a digital output to support digital panel. The de-interlacing function, sharpness and gamma curve processing features generate vivid images. In addition, the EL8323 supports 16:9/4:3 aspect ratio/zoom mode display type to meet all application requirements.

This high quality and low cost single chip solution includes a CCIR656 decoder, one PLL circuit, one three channel DAC, one internal On Screen Display (OSD), a sophisticated filter, an advanced scaling engine, and a versatile timing controller (T-Con) for smart-panel integration. With this level of integration, the EL8323 device simplifies and reduces the cost of portable LCD displays while maintaining a high degree of flexibility and quality. The output format of EL8323 supports 2.5" ~ 10" analog and digital TFT-LCD modules.

## SYSTEM CONFIGURATION DIAGRAM



| Part Number | Input Type | Input Channels | Package (Green) |
|---|---|---|---|
| EL8323TQ-G | ITU-R BT.656 | 2 | 100-lead LQFP |