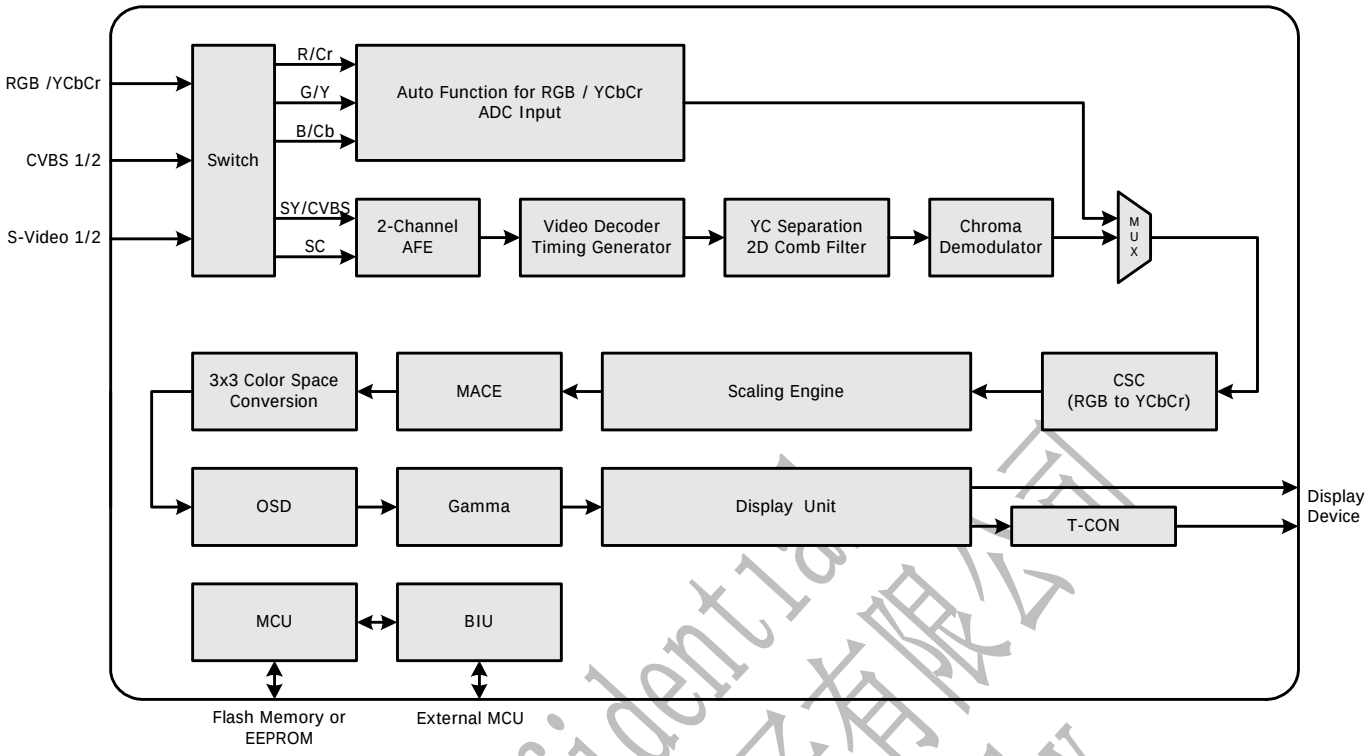
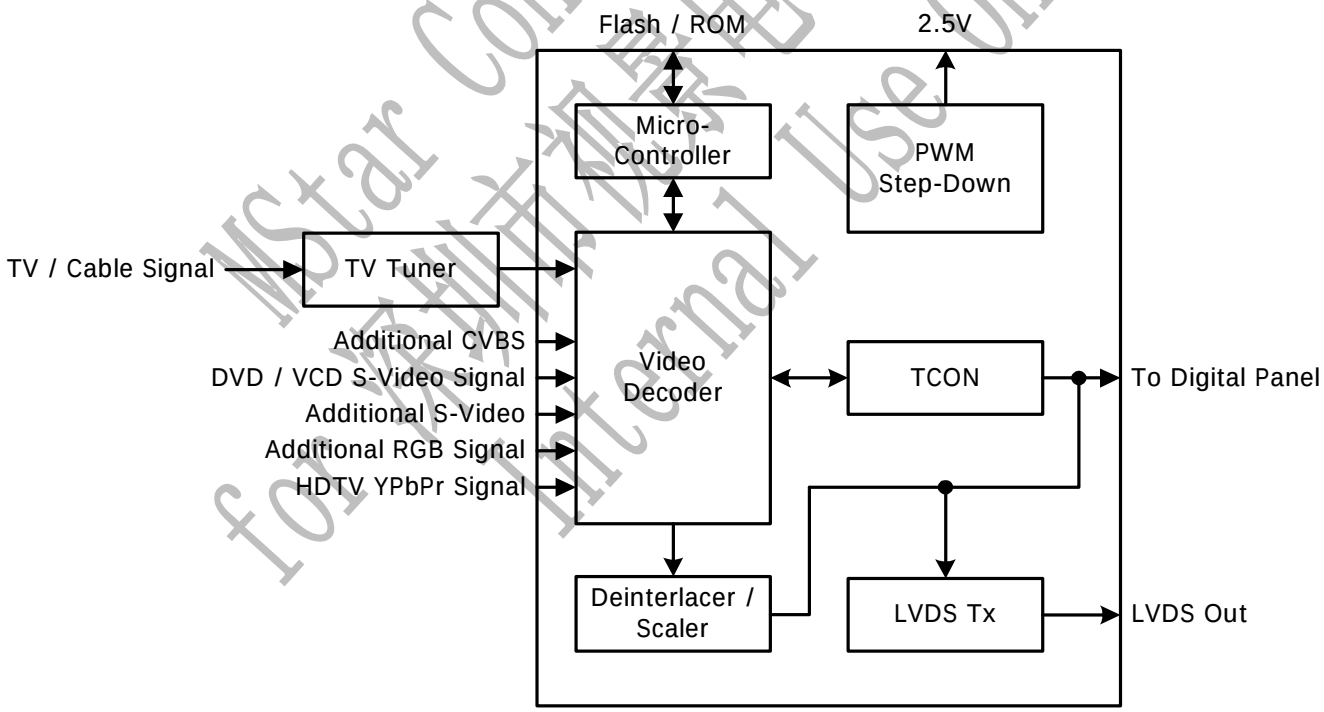
FEATURES

- **Video Decoder**
  - Supports NTSC, PAL and SECAM video input formats
  - 2D NTSC and PAL comb-filter for Y/C separation of CVBS input
  - Multiple CVBS and S-video inputs
  - Supports Closed-caption and V-chip
  - ACC, AGC, and DCGC (Digital Chroma Gain Control)
- **Analog Input**
  - Supports RGB input format from PC, camcorders and GPS
  - Supports YCbCr inputs from conventional video source and HDTV
  - Supports SCART – RGB + Fast Blank
  - Supports video input 480i, 480p, 576i, 576p, 720p, 1080i; RGB input resolution in 640x480, 800x480, 800x600, 1024x768, and 1280x1024(SXGA)
  - 3-channel low-power 10-bit ADCs integration for YCbCr and RGB
  - Supports RGB composite sync input (CSYNC), SOY, SOG, HSYNC, and VSYNC
  - On-chip clock synthesizer and PLL
  - Auto-position adjustment, auto-phase adjustment, auto-gain adjustment, and auto-mode detection
- **Color Engine**
  - Brightness, contrast, saturation, and hue adjustment
  - 9-tap programmable multi-purpose FIR (Finite Impulse Response) filter
  - Differential 3-band peaking engine
  - Vertical peaking
  - Spatial noise reduction
  - Luminance Transient Improvement (LTI)
  - Chrominance Transient Improvement (CTI)
  - Black Level Extension (BLE)
  - White Level Extension (WLE)
  - Favor Color Compensation (FCC)
  - 3-channel gamma curve adjustment
  - Independent 6 color of saturation, hue, and brightness control
- **Scaling Engine/Panel Interface**
  - Supports digital panels up to 1366x768, and 1440x900
  - Supports single/dual 8-bit LVDS panel outputs
  - Supports 8-bit TTL panel output
  - Supports various displaying modes
  - Supports horizontal panorama scaling
- **Miscellaneous**
  - Built-in MCU
  - 3-wire serial bus interface for configuration setup
  - Built-in step-down PWM circuits for input 2.5V
  - Built-in internal OSD with 512 programmable fonts, 1、2 or 4 bit per pixel color, 16-color palettes, and 12-bit color resolution
  - Supports external OSD
  - Support CVBS out
  - Spread spectrum clocks
  - Optional 3.3V / 5V output pads with programmable driving current
  - 128-pin PQFP package

BLOCK DIAGRAM



SYSTEM APPLICATION DIAGRAM



GENERAL DESCRIPTION

The MST718BU is a high quality ASIC for NTSC/PAL/SECAM LCD-TV application. It receives analog NTSC/PAL/SECAM CVBS and S-Video inputs from TV tuners, DVD or VCR sources, including weak and distorted signals, as well as analog RGB input from GPS systems. Automatic gain control (AGC) and 10-bit 3-channel A/D converters provide high resolution video quantization. With automatic video source and mode detection, users can easily switch and adjust variety of signal sources. Multiple internal adaptive PLLs precisely extract pixel clock from video source and perform sharp color demodulation. Built-in line-buffer supports adaptive 2-D comb-filter, 2-D sharpening, and synchronization stabler in a condense manner. The output format of MST718BU supports 8-bit TTL or LVDS digital TFT-LCD modules.

PIN DIAGRAM (MST718BU)