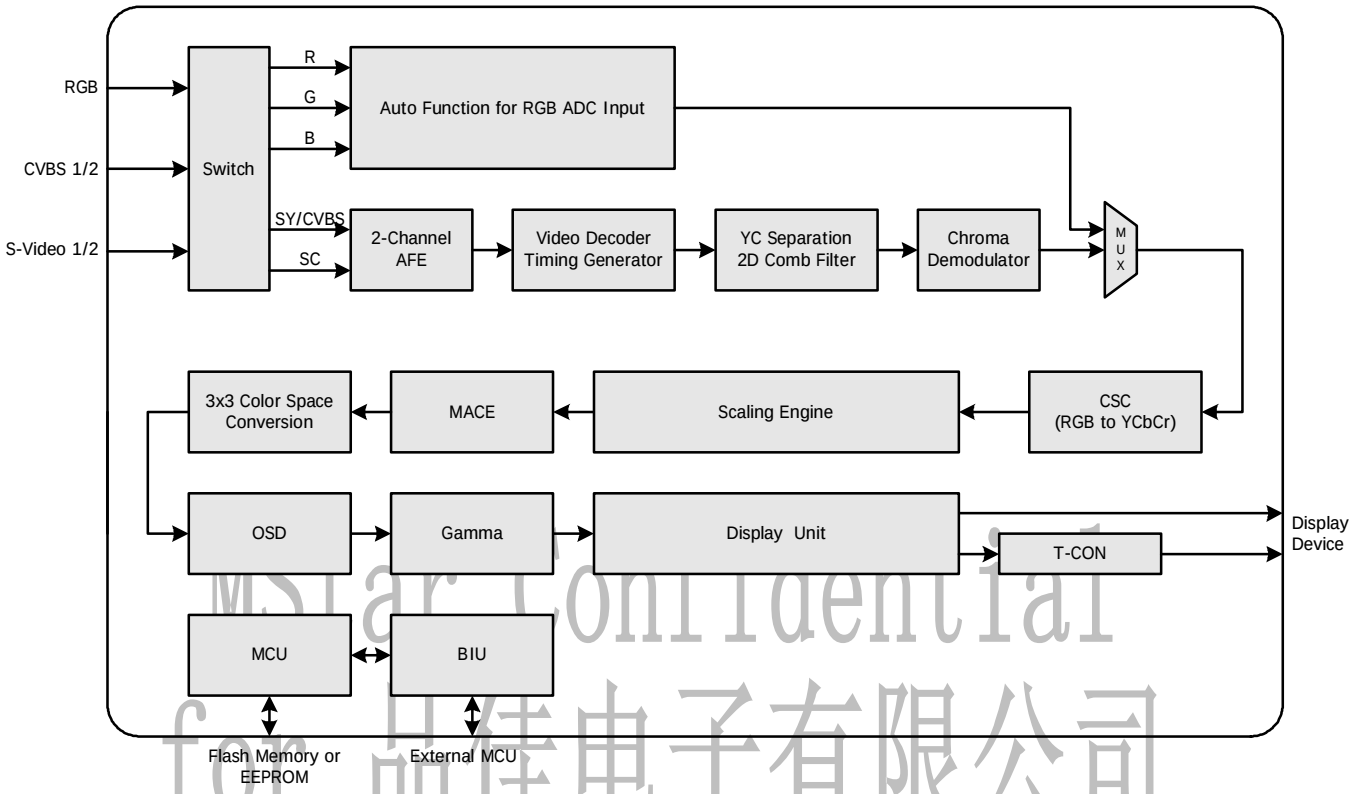
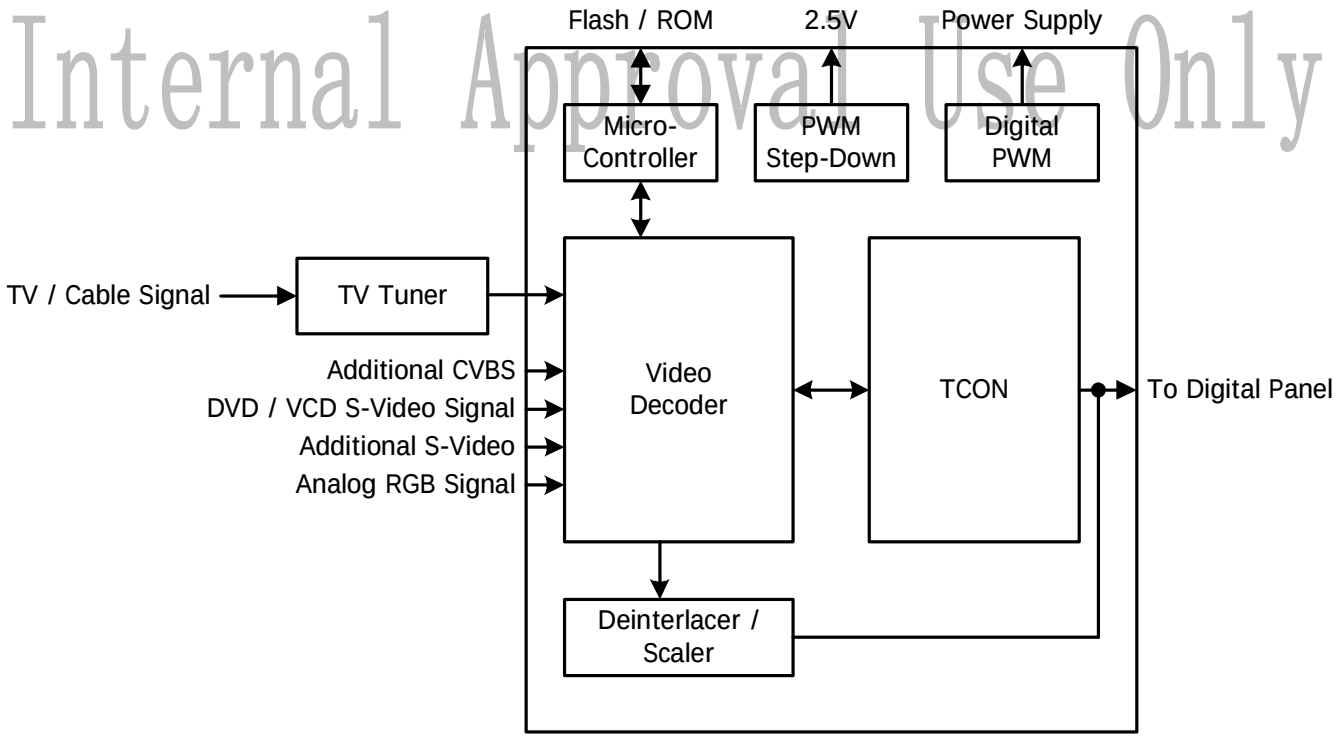
FEATURES

- 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 video input 480i, 480p, 576i, 576p, 720p, 1080i; RGB input resolution in 640x480, 800x480, and 800x600 (SVGA)
  - 3-channel low-power 10-bit ADCs integration for RGB
  - Supports RGB composite sync input (CSYNC), 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
  - 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
- Scaling Engine/Panel Interface
  - Supports digital panels up to 1366x768
  - Supports single 8-bit TTL panel outputs
  - Supports various displaying modes
  - Supports horizontal panorama scaling
- Digital PWM Controller
  - Integrated general purpose digital PWM control loop
  - Programmable startup operating frequency and period with output voltage regulation
  - Programmable output current regulation; 40KHz~70KHz switching frequency, sync. to HSYNC possible
  - Burst-mode or continuous-mode for output current regulation; 150Hz~300Hz burst-mode frequency, sync. to VSYNC possible
  - Programmable protection level for input voltage and fault detection
- Miscellaneous
  - Built-in MCU
  - 3-wire serial bus interface for configuration setup
  - Built-in step-down PWM circuit for input 2.5V
  - Built-in VCOM DC level adjusting circuits
  - Built-in internal OSD with 256 programmable fonts, 16-color palettes, and 12-bit color resolution
  - Supports external OSD
  - 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 MST717A is a high quality ASIC for NTSC/PAL/SECAM car 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 8-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 MST717A supports 6-bit or 8-bit TTL digital TFT-LCD modules.

PIN DIAGRAM (MST717A)