

FEATURES

n Video Decoder

- ✓ Supports NTSC, PAL and SECAM video input formats
- ✓ 2D NTSC and PAL comb-filter for Y/C separation of CVBS input
- ✓ Single CVBS and S-video input
- ✓ Supports Closed-caption and V-chip
- ✓ ACC, AGC, and DCGC (Digital Chroma Gain Control)

n 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

n Scaling Engine/TCON

- ✓ Supports analog panels with the resolution of 960x234, 1200x234, 1400x234, and more
- ✓ Supports various displaying modes
- ✓ Supports horizontal panorama scaling

n Digital PWM Controller

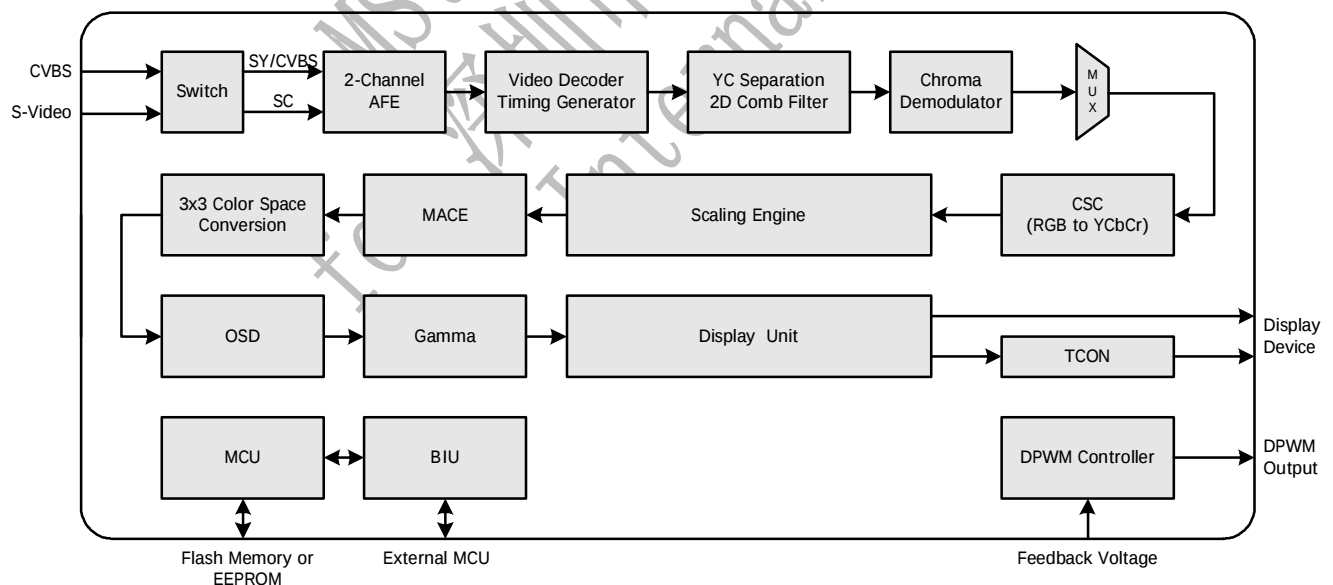
- ✓ Integrated general purpose digital PWM control loop

- ✓ 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

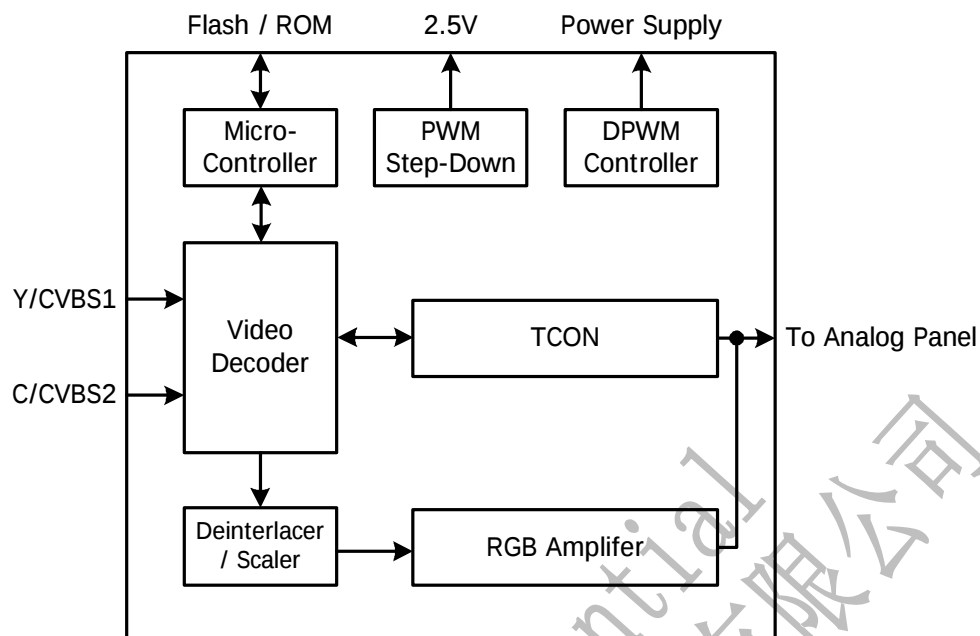
n Miscellaneous

- ✓ Built-in MCU
- ✓ 3-wire serial bus interface for configuration setup
- ✓ Built-in step-down PWM circuits 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
- ✓ 3-channel low-power 8-bit DAC integration for RGB output, dynamic range 0.1-4.9V
- ✓ Built-in VCOM DC/AC level adjustment circuit
- ✓ Spread spectrum clocks
- ✓ Optional 3.3V / 5V output pads with programmable driving current
- ✓ 100-pin LQFP package

BLOCK DIAGRAM



SYSTEM APPLICATION DIAGRAM



GENERAL DESCRIPTION

The MST720A-T 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. 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 MST720A-T supports 3.5"~7" analog TFT-LCD modules.

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PIN DIAGRAM (MST720A-T)

