



GENESIS MICROCHIP

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Pegasus LCD TV

LCD TV VIDEO PROCESSOR BOARD

Product Brief

Features

- Genesis gmVLX1A-X proprietary high quality video scaling and de-interlacing including AFM, vertical/temporal (VT) and static mesh processing.
- Genesis gmAFMC Adaptive Film Mode (AFM) processing.
- Techwell TW98 video decoder accepts composite/YC baseband video inputs in NTSC/PAL formats.
- On board tuner demodulates off-air RF NTSC System M/N inputs.
- Output supports 1024x768 LG LM151x1 XGA LCD panels.
- Stereo audio inputs/outputs.
- Text/icon based On-screen Display (OSD) menu system provides user control of source selection, image parameters, audio levels etc.
- 8-bit 8051-based MCU for system control.
- Infrared remote control receiver.

Applications

- LCD TV



Description

The Genesis Microchip Pegasus LCD TV video processor board provides video processing functions for high quality, low cost LCD TV systems. Utilizing the Genesis gmVLX1A-X and gmAFMC ICs, the system de-interlaces and scales interlaced video for viewing on a flat panel LCD display device.

NTSC and PAL composite and S-video (YC) baseband video inputs are decoded by the TW98. The TW98's two 10-bit A/D converters and signal processing controls enhance the detail of video signals to compensate for VCR or TV tuner picture degradation. An onboard tuner demodulates RF System M (NTSC) inputs for off-air reception.

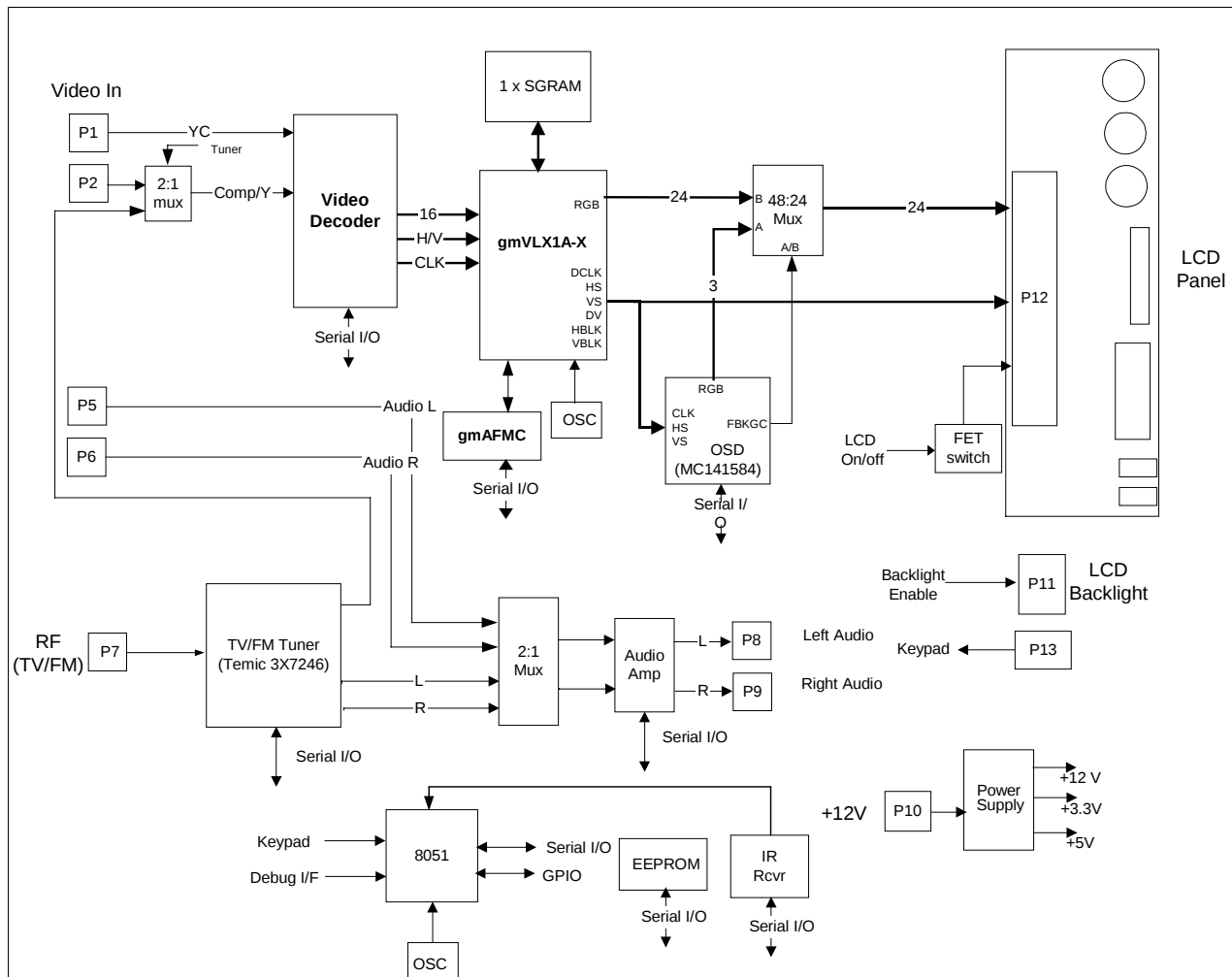
Supported LCD displays include the LG LM151x1 XGA (1024x768) panel. User control is provided by a keypad (or optional IR remote) and an on-screen display (OSD) menu system. The user has control of image contrast, brightness, sharpness, audio volume/mute, channel selection etc. via OSD menus controlled by an 8-bit system MCU and a dedicated OSD generator.

The MCU also provides input mode monitoring, system initialization, keypad scanning, infrared remote (IR) support etc. The on-board ICs, including an RF tuner, OSD controller and Techwell TW98 video decoder and gmVLX1A-X scaler / deinterlacer are controlled by the system MCU via the serial communications interface.

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LCD TV Video Processor Block Diagram



LCD TV Supported Inputs

BASEBAND VIDEO INPUT					
Analog Video Input			Decoded Digital Video		
Signal Format ⁽¹⁾	Horiz. Freq. (KHz)	Vertical Freq. (Hz)	Active Resolution (Pixels x lines @ Field/Frame Rate, Hz)	Total (Pixels x Lines)	Pixel Clock (MHz)
4:3, 16:9 Composite/YC NTSC	15.734	59.940	720x240 @ 59.94 I	858x525	13.500
4:3, 16:9 Composite/YC PAL	15.625	50.000	720x288 @ 50 I	864x625	13.500

RF VIDEO INPUT					
Analog Video Input			Demodulated Video		
Signal Format	Freq. (MHz)	Channels	Signal Format	Horiz. Freq. (KHz)	Vertical Freq. (Hz)
RF Modulated System M	55.25-801.25	2-69 VHF-UHF	4:3, 16:9 Composite NTSC	15.734	59.940

FM INPUT					
Audio Input			Demodulated Audio		
Signal Format	Freq. (MHz)		Signal Format	Freq. Response	
FM Radio Broadcast	76.0-108.0		Stereo L & R outputs	20-18 KHz	

NOTES :

1. For each SD signal format, 4:3 & 16:9 aspect modes indistinguishable. User selection required. 16:9 input is 16:9 letterbox on 4:3 raster.

LCD TV Supported Output Display Formats

LCD						
Signal Format	Active Resolution (Pixels x lines @ Field/Frame Rate, Hz)	Total (Pixels x Lines)	Horiz. Freq. (KHz)	Vertical Freq. (Hz)	Pixel Clock (MHz)	Supported LCD Panel
XGA	1024x768 @ 50/59.94 P			50/59.94		LG LM151x1