GENESIS MICROCHIP

Pegasus Progressive Scan TV

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PROGRESSIVE SCAN TV 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.
- Supports line doubled 480p, 800x600 and 1024x768 analog YPbPr/RGB. Suitable as line doubling/scaling processor for progressive scan televisions.
- 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

- Progressive scan televisions
- Home theatre
- DTV

Description

The Genesis Microchip Pegasus Pro-Scan Television Processor Board provides video processing functions for high quality, low cost progressive scan TV sets. Utilizing the Genesis gmVLX1A-X and gmAFMC ICs, the system de-interlaces and scales interlaced video for viewing on 480p, 800x600 and 1024x786 progressive scan televisions, home theatre etc.

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.

Pegasus Pro-Scan provides YPbPr 480p, 800x600 RGB or 1024x768 RGB analog outputs. User control is provided by a keypad (or optional IR remote) and an on-screen display (OSD) menu system. Selection of the output resolution is via the OSD. The user also 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 system MCU provides input mode monitoring, system initialization, keypad scanning, infrared remote (IR) support etc. The on-board ICs, including an RF tuner, OSD controller, Techwell TW98 video decoder and gmVLX1A-X scaler/de-interlacer are controlled by the system MCU via a serial communications interface.

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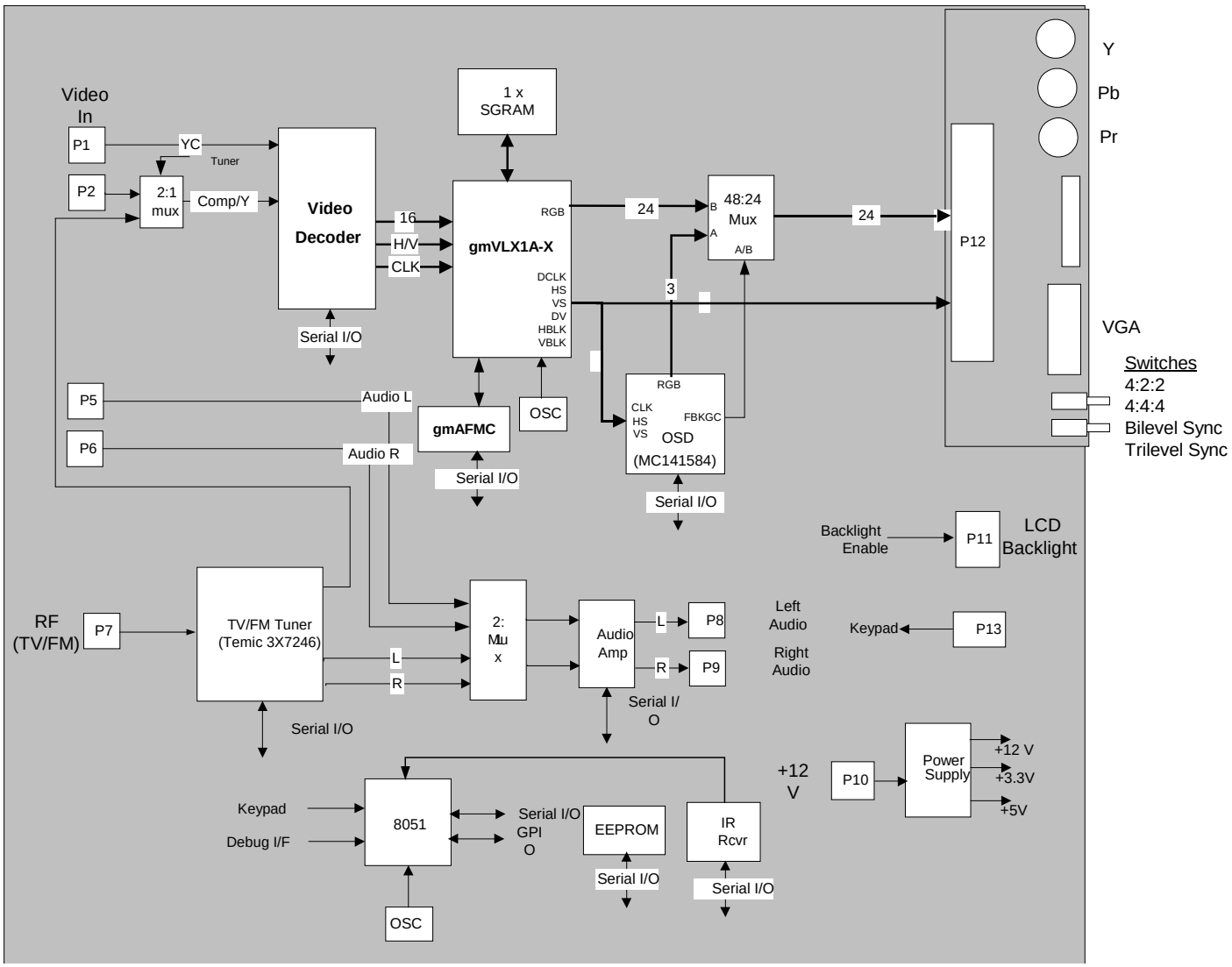
Progressive Scan TV Processor Block Diagram



Progressive Television 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.

Progressive Television Supported Output Display Formats

PROGRESSIVE TELEVISION				
Resolution	**Signal Format**	**Active Resolution** (Pixels x lines @ Field/Frame Rate, Hz)	**Horiz. Freq.** (kHz)	**Vertical Freq.** (Hz)
480p	YPbPr	720x480 @ 59.94 P	31.469	59.94
VGA	RGB	640x480 @ 59.94	31.469	59.94
SVGA	RGB	800x600 @ 59.94	37.879	59.94
XGA	RGB	1024x768 @ 59.94	48.363	59.94