

Short Information

VDP 3140D

100/120-Hz Video, Display and Deflection Processor

Design name: Sipadoss (Single Package Double-Scan Solution)

(64-pin COB, 64-pin PSDIP-compatible)

The VDP 3140D is a COB (Chip-On-Board) and performs video decoding, scan rate conversion to 100 or 120 Hz, as well as display and deflection processing. It consists of three devices (see Fig. 1): The front-end consists of the VPC 3230D 4H comb filter video decoder with RGB and YC_rC_b inputs and PIP capability. A field memory stores the video data for scan rate conversion. The back-end device is the DDP 3310B display and deflection processor with two analog RGB inputs for OSD and VGA signals.

The double-scan VDP 3140D is largely pin-compatible with the single-scan video and display processor VDP 31xxB, that means it is pin-compatible for the main signals. This allows the design of a single chassis for 50-Hz or 100-Hz TV sets requiring only a few assembly options.

Main Features of the VDP 3140D:

- 50/60-Hz to 100/120-Hz scan rate conversion in a single package
- largely pin-compatible with the single-scan device VDP 31xxB
- 5-V and 3.3-V power supplies
- one I²C-controlled PWM output (from DDP 3310B)
- VGA and SVGA capable

- PIP processing for four picture sizes ($\frac{1}{4}$, $\frac{1}{9}$, $\frac{1}{16}$, or $\frac{1}{36}$ of normal size) with 8 bit resolution
- Double Window mode
- 14 predefined PIP picture configurations and expert mode (fully programmable)
- one 20.25-MHz crystal, few external components

Front-end VPC 3230D:

- high-performance adaptive 4H comb filter Y/C separator with adjustable vertical peaking
- multistandard color decoder PAL/NTSC/SECAM including all substandards
- four CVBS, one S-VHS input, one CVBS output
- two RGB or YC_rC_b component inputs, one Fast-Blank input
- integrated high-quality A/D converters and associated clamp and AGC circuits
- multi standard sync processing
- linear horizontal scaling (0.25...4), as well as non-linear horizontal scaling "Panoramavision"
- peaking, contrast, brightness, color saturation, and tint for RGB/ YC_rC_b and CVBS/S-VHS
- high-quality soft mixer controlled by Fast-Blank

Back-end DDP 3310B:

Video Processing

- horizontal scaling (0.25 ... 4), Panoramavision
- dynamic peaking
- color transient improvement
- programmable RGB matrix
- picture frame generator
- three D/A converters
- two analog RGB/Fast-Blank inputs

Deflection Processing

- scan velocity modulation output
- high performance H/V deflection
- EHT compensation for vertical/east-west
- soft start/stop of H-drive
- vertical angle and bow

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- differential vertical output
- vertical zoom via deflection
- horizontal and vertical protection circuit
- adjustable horizontal frequency for VGA/SVGA display

Miscellaneous

- ADC for tube measurements
- automatic picture tube adjustment (cutoff, whitedrive)
- hardware for basic 50/60-Hz to 100/120-Hz conversion (display frequency doubling)

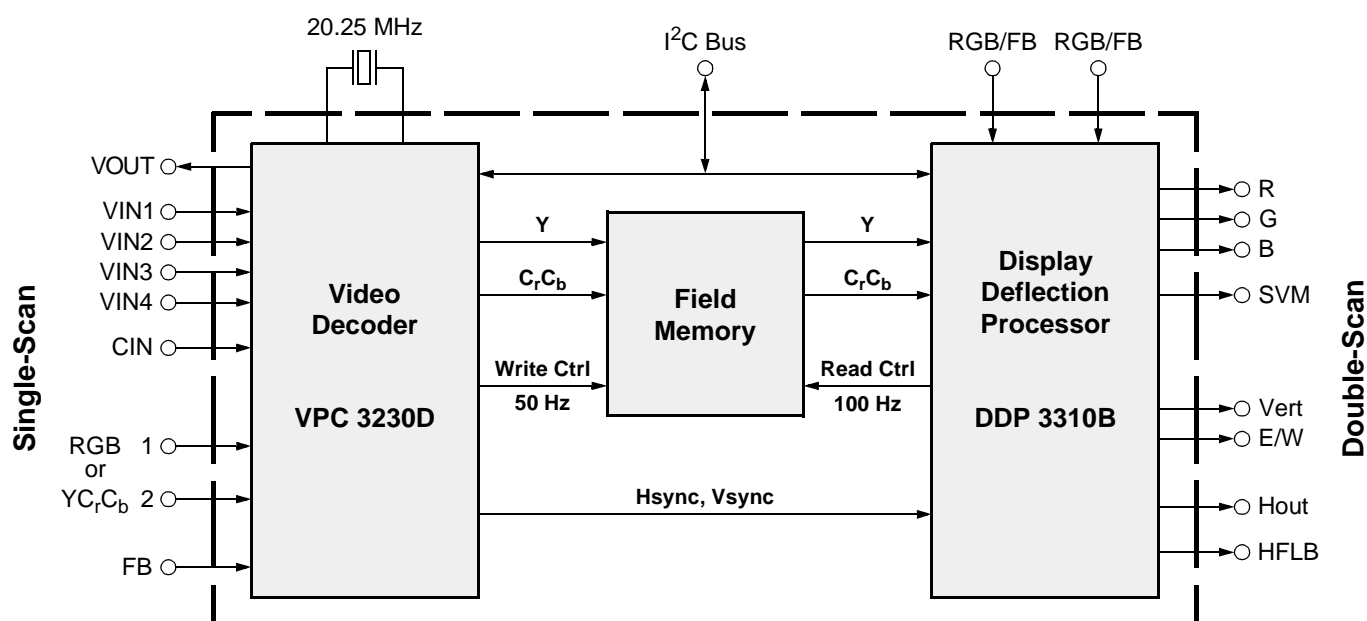


Fig. 1: Block diagram of the VDP 3140D (Sipadoss)

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