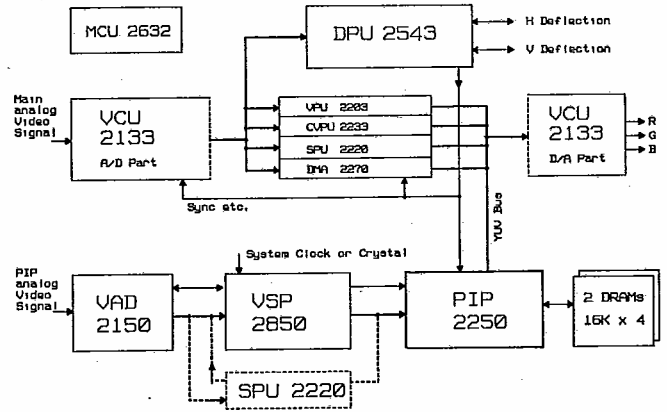


## PIP2250 Picture-in-Picture Processor (68-Pin PLCC Package)

Picture-in-picture means the insertion of a second program's picture on the screen of a CTV receiver (at reduced size) simultaneously with the full-size main picture. The second, small picture may originate from another TV transmitter, from a video recorder, a monitor camera or another source. It allows monitoring of the second channel while watching the main channel. Main requirement for picture-in-picture is to store the content of the small picture when it is supplied by its source, and to deliver the content at the proper instant when it must be inserted into the main picture which is received and displayed continuously. For storing the content of the second, small picture, two standard 64K dynamic RAMs (16 x 4) are used, thus making the storage simple and economic. Today's picture-in-picture fits neatly into the well-known DIGIT2000 system, but is also suitable for stand-alone applications.

The PIP2250 is a fast signal processor in CMOS technology which is used to filter (for anti-aliasing) and to decimate the digital Y, R-Y and B-Y signal supplied by the VSP2850 Video/Sync Processor, to control the DRAMs for storing the small picture's content and for reading the same at the proper time for display. Further, a border generator supplies the borderline for the small picture.



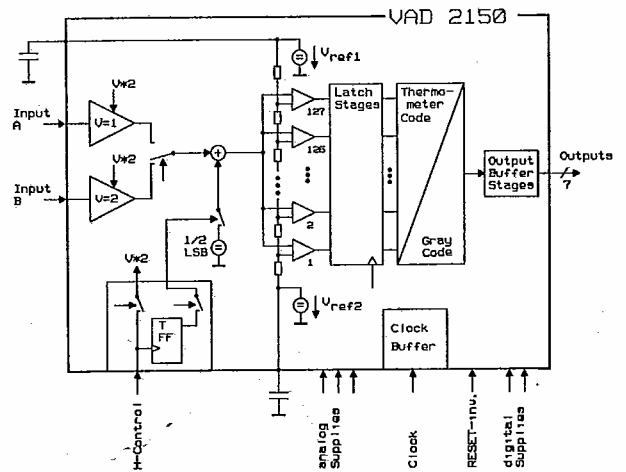
**Block Diagram of the Picture in Picture System**

## VAD2150 Video A/D Converter (18-Pin Plastic Package)

The VAD2150 is a fast 7-bit A/D converter of the flash type, designed in CI technology. It mainly consists of 127 fast comparators and is primarily intended for the D/A conversion of the video signal for the second channel in the picture-in-picture system, based on the DIGIT 2000 digital TV concept. In this application, the VAD2150 acts together with the VSP2850 Video/Sync Processor and the PIP2250 Picture-in-Picture Processor. The VAD2150 may also be used in other applications which call for a low-cost high-speed A/D converter, as TV scramblers, Teletext decoders, video memory applications, DBS satellite receivers using a MAC TV system, etc.

Main features of the VAD2150 Video A/D Converter are:

- no external sample and hold required
- high-speed operation: 25 MHz
- output word Gray coded
- two inputs with different input amplitude can be selected
- gain of the input amplifiers can be doubled



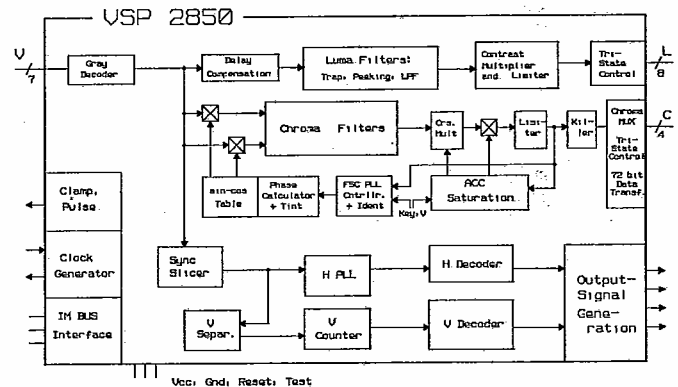
**VAD2150 Block Diagram**

## VSP2850 Video/Sync Processor (40-Pin Plastic Package)

The VSP2850 is a digital signal processor in NMOS technology, which is able to cover all functions of digital signal processing in the video and sync section of a digital TV receiver which normally are combined in the VPU and DPU processors and the MCU clock generator of the DIGIT2000 digital TV system. The VSP2850 is intended for the second video channel in digital TV receivers equipped with the picture-in-picture facility.

Main features of the VSP2850 Video/Sync Processor are:

- luma channel with delay compensation, color trap, peaking filter, contrast multiplier and limiter
- chroma channel with color demodulator, ACC, color killer, color saturation multiplier, limiter and chroma multiplexer
- user-adjustment of contrast, color saturation, hue etc.
- sync separation section with sync slicer, horizontal PLL, vertical separation, vertical counter, horizontal decoder and vertical decoder, output pulse generation
- clock generation on-chip, or external clock



**VSP2850 Block Diagram**