

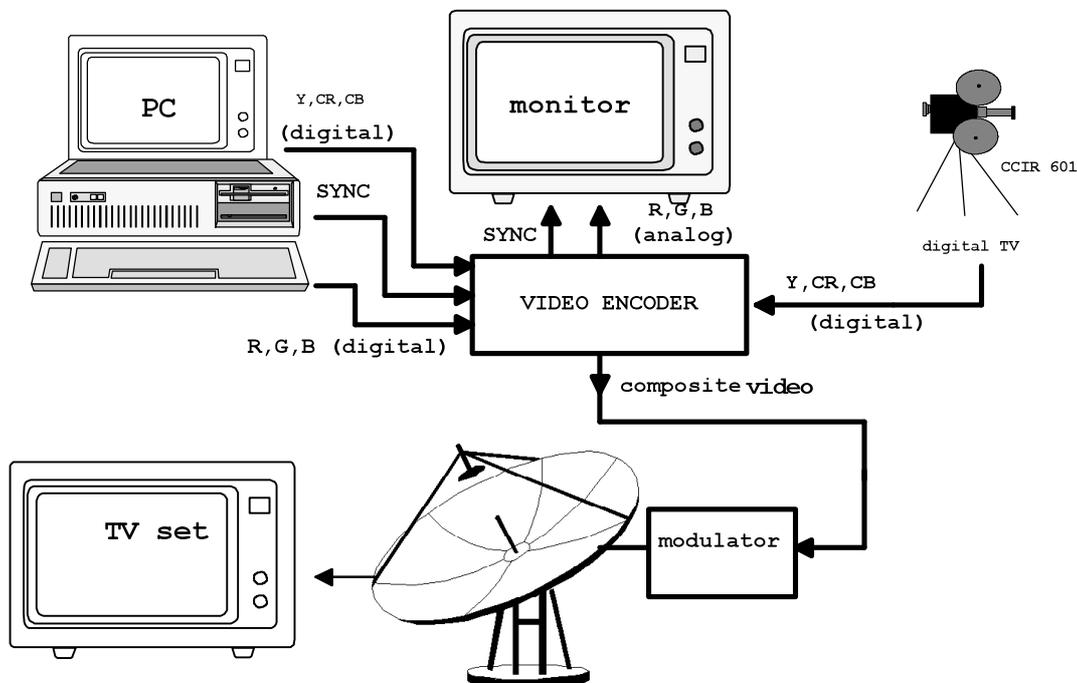
Interfacing the 29C84A with PAL / NTSC TV

Application Overview

The 29C84A is digital to analog video decoder intended for conversion of digital luminance and chrominance to analog analog RED, GREEN and BLUE signals.

- It fully complies with the CCIR 601 recommendation for digital TV.
- It is able to drive 75 Ohms / 20pF loads on its analog RGB outputs.

The following technical note gives an indication of how to interface the 29C84A with other existing components in order to define a VIDEO encoder able to deliver proper composite video signals towards the broadcast TV network (PAL and NTSC) starting from computer digital pictures (ex JPEG pictures) in R,G,B or Y,Cr,Cb format or from digital TV pictures (CCIR 601).



Solution for Low Resolution Pictures Transfer towards PAL/NTSC

The 3 main circuits required for this application are :

- 29C84A
- PAL/NTSC synchronization generator SAA1043 (PHILIPS)
- PAL/NTSC TV color encoder TEA2000 (PHILIPS)

The sync generator is in charge of delivering the composite sync and the blanking signal. It can work in free running mode using its on chip oscillator or it can be synchronized by external signals (HSYNCI = horizontal sync input, VSYNCI=vertical sync input) coming from an application board (PC) or from digital TV (encoded like in CCR601).

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In free running mode it can deliver vertical (VSYNCO) and horizontal (HSYNCO) synchronization signals towards image source. When using the 29C84A for Y/C to R/G/B adaptation, it will be necessary to compensate for circuit internal conversion time by delaying the VSYNCO/HSYNCO signals from x clock periods.

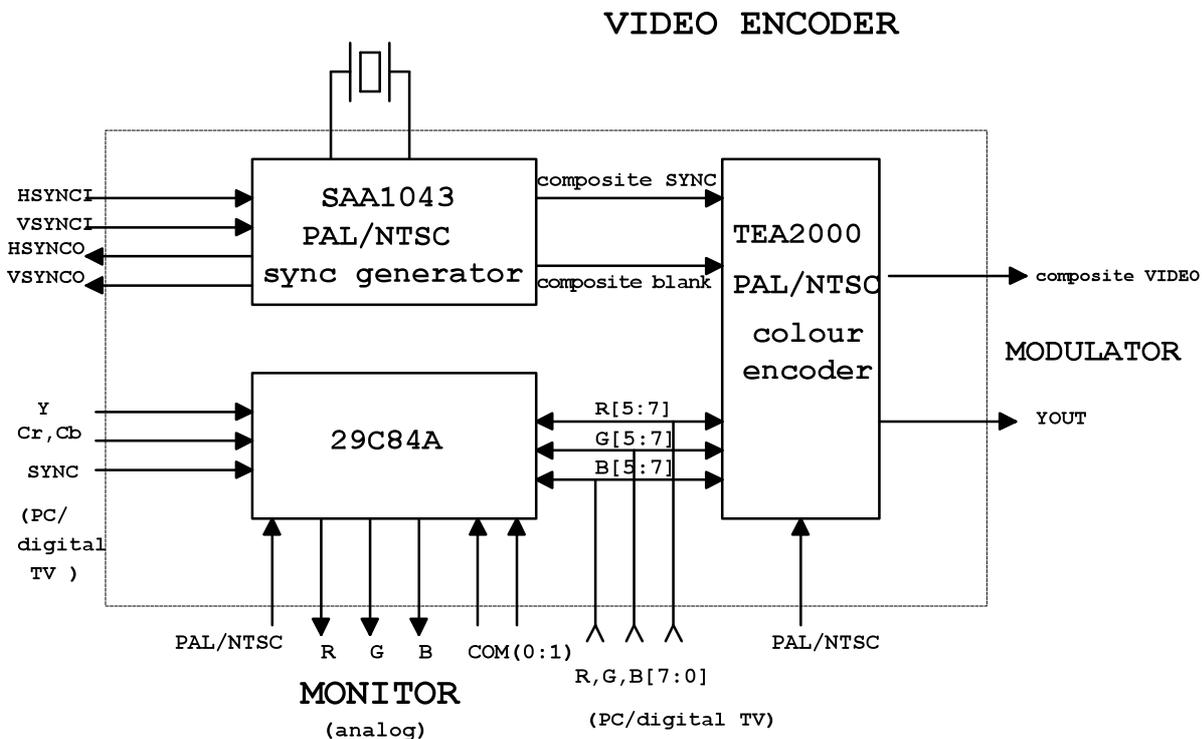
The 29C84A will be used to :

- make conversion from Y/C (digital) to R/G/B (digital)
- display pictures on a R/G/B monitor, starting from internal or external digital R/G/B picture sources.

The color encoder will use 6-bit binary coded information giving color information (2 bits for R + 2 bits for G + 2 bits for B). These bits will be provided by the 29C84 or by an external source. It will produce a composite video signal including 64 possible colors, comprising a wide range of saturated and desaturated colors, black, white and 2 levels of GREY. This video encoding application is suitable for low resolution pictures transfer (PC screens...) between computers or digital TV world towards the NTSC/PAL TV broadcasting networks.

HSYNCO

If the pictures are sourced by a computer (PC), then it will be in charge of sync processor synchronization, if CCIR 601 pictures are used, sync information is encoded inside Y/C.



Additional Information

For additional information on the 29C84A and ordering information, refer to product datasheet available upon request.

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