

Visualist



How to build a sound controlled video effect device?

**A d.i.y. open source hardware project for the VJ.
R.T. videoeffects on camera or pre-recorded material.
Easy to build because printed circuit board layout.
Cheap and easy to find parts; 60 Euro total cost.**

VISUALIST; a diy video effects controller for the VJ.

Searching the internet you can find many audio effect circuits but analog video effect circuits are rare. Why? Is there no interest? The aim of this project is to make a video instrument for VJ's and other artists and open enough to experiment further. The video circuit is first published in the German Funkschau in may 1987. The authors are M. Klose and H. Neumayr. They write: the possibilities for the artist/ electronics has no limit. The circuit is cheap and the MC1377P is the only non regular part. Sound- and videocircuit can be made for 60 dollar all together. In this circuit the color video input signal is made to a b/w signal cutting - off the color burst by a notch filter (10.7Mhz).

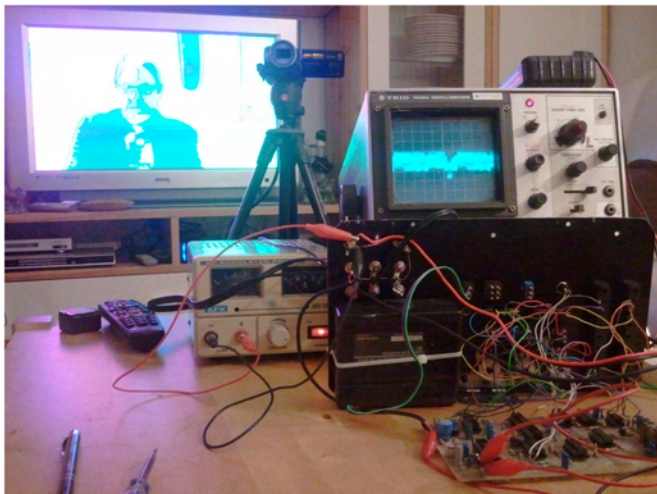
It's not perfect but sufficient. The signal is split in 2 directions:

1- Via the a comparator IC1a the syncpulse is passing the oscillator IC4c/d (31250khz) to make a semi-normal PAL-sync-mix for IC9, the "famous" MC1377P RGB to PAL/NTSC encoder.

2- The way trough the seven comparators IC1 and IC2. With six resistors between IC3a/b we can control the upper and lower threshold and the threshold for every luminosity level in-between.

With other words; the signal will be 'sliced' in 7 luminosity levels. Each level can get a color out of a range of combinations chosen by IC6 and IC7. It's in fact a "false" color generator.

After the comparator the signal passes a priority-encoder IC5 that results in a 3-bit-word. IC6 and IC7 (1 out of 4 analog switches) are doing the colorchange. The 2-bit controlsignal is made by IC10 and IC4a/b. Pressing the "colorselect" short, makes a colorchange; pressing longer makes a continuous colorchange. More effects are coming from the RGB inverter switches; they invert the colorlayers.



And now the VJ trick!

Changing the three 560ohm resistors by potentiometers, and parallel to this a light sensitive resistor makes that the color of the VISUALIST reacts on the sound of a microphone or an audio line-input. So, we get hand- and sound control together. The automatic volume control makes that hand-control is not necessary by wild changing environmental sound. More scheme's are circulating in the web with better (parametric) filters.

The crux is the use of light sensitive resistors in the videopart. Not only the color saturation but also the videosignal itself can be controlled. The comparator potmeters are fine to experiment with.

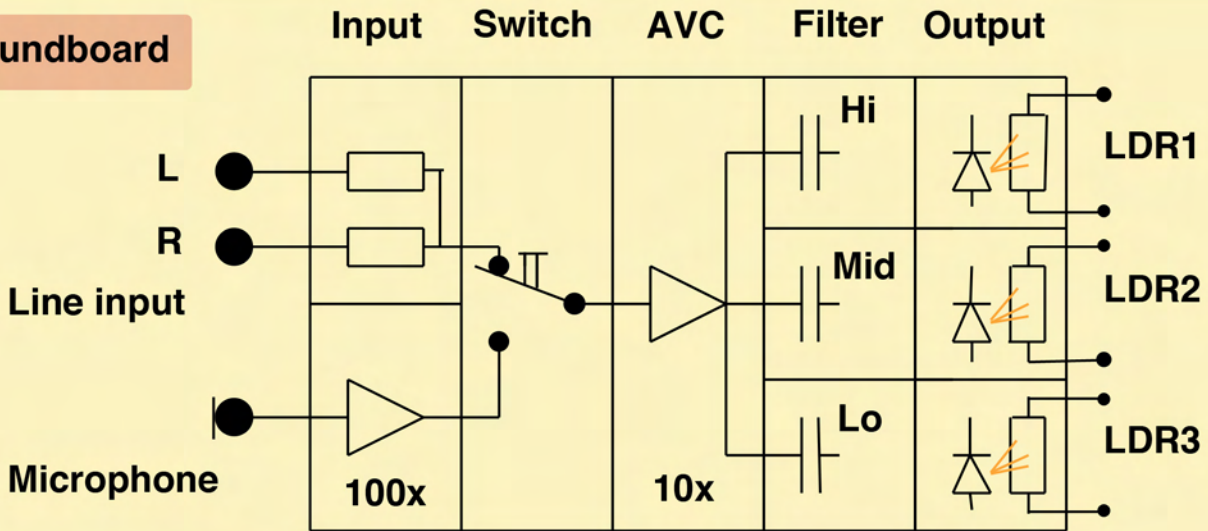
In the instruction video you can see the wonderful effects. A small microphone case is perfect as a console for the VISUALIST. Success with building this project and enjoying colourfull visuals.

Bertoa

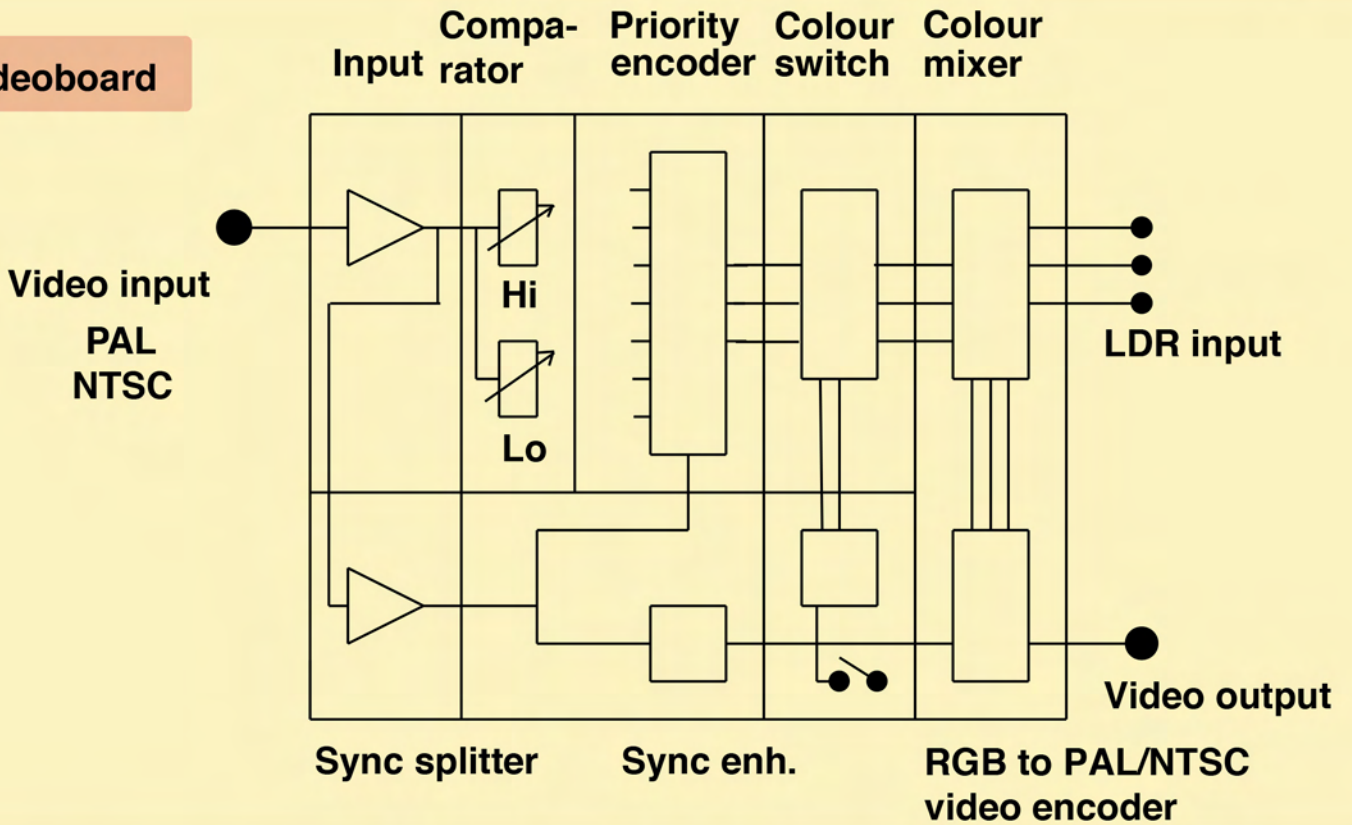


Block diagram "VISUALIST" video effect controller

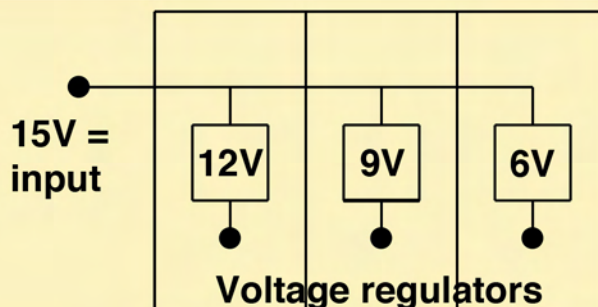
Soundboard



Videoboard



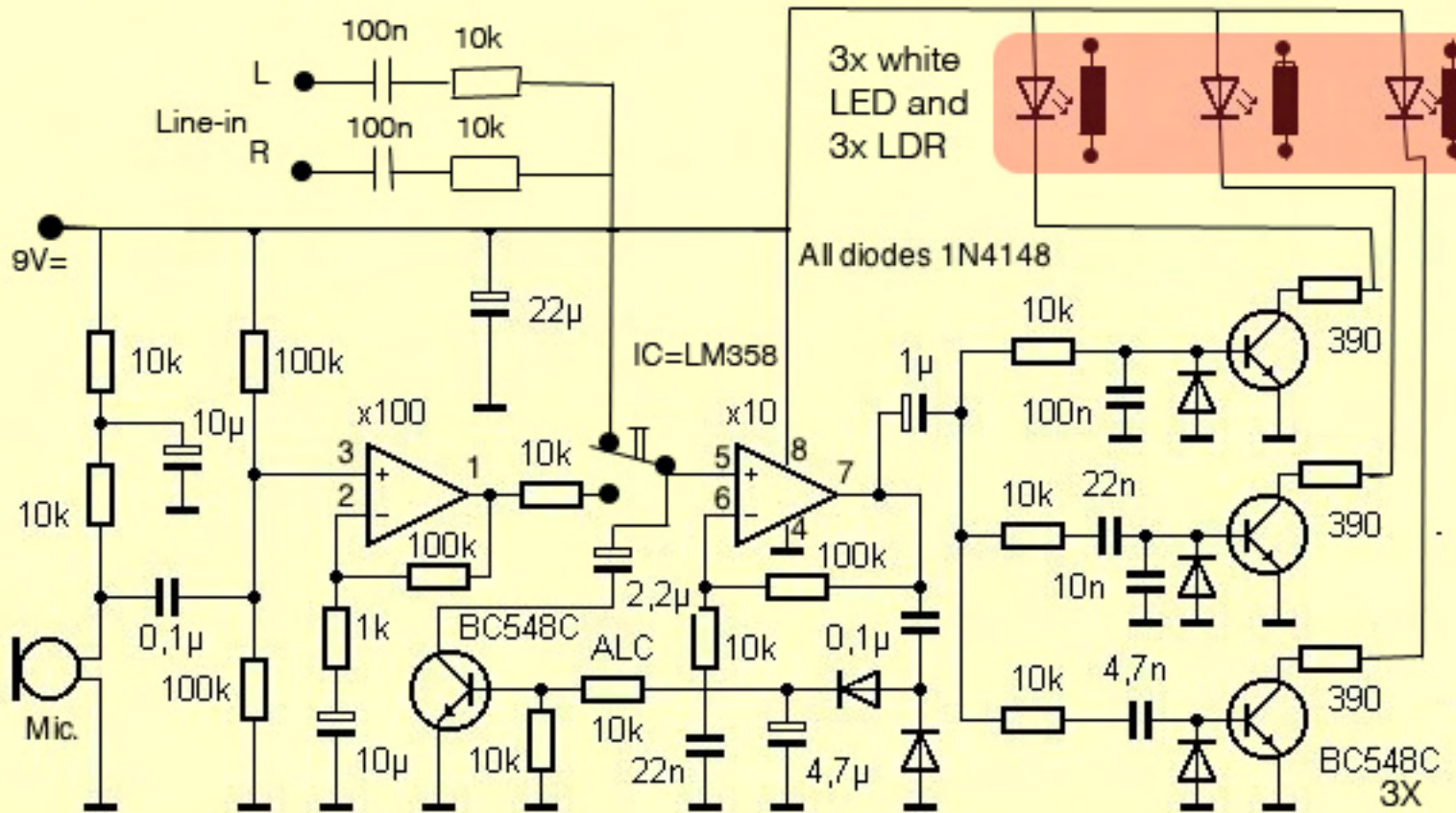
Power supply



Schematic diagram "VISUALIST" video effect controller

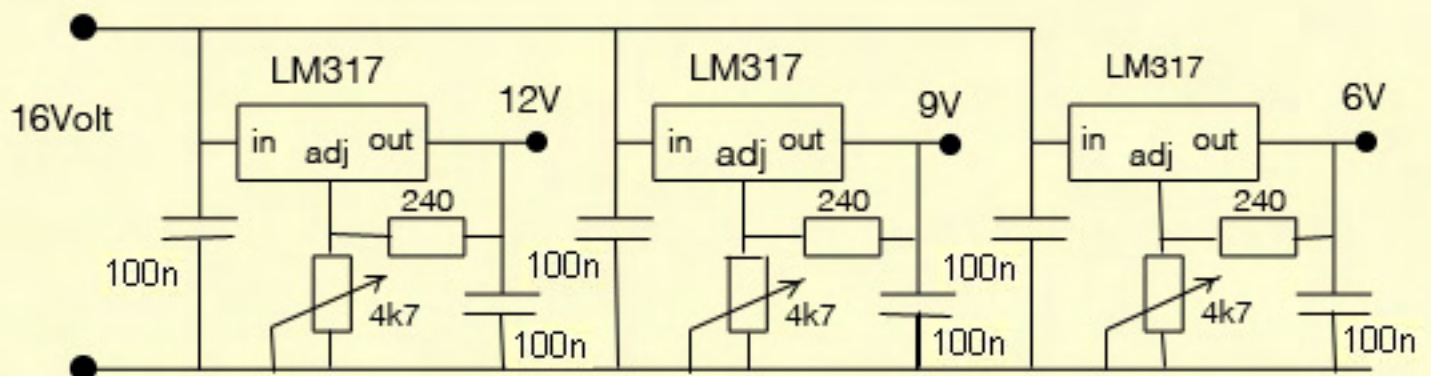
Soundcircuit

Sound to RGB LED convertor with automatic volume controll



More explanation about the LED-LDR connection you find in the text.

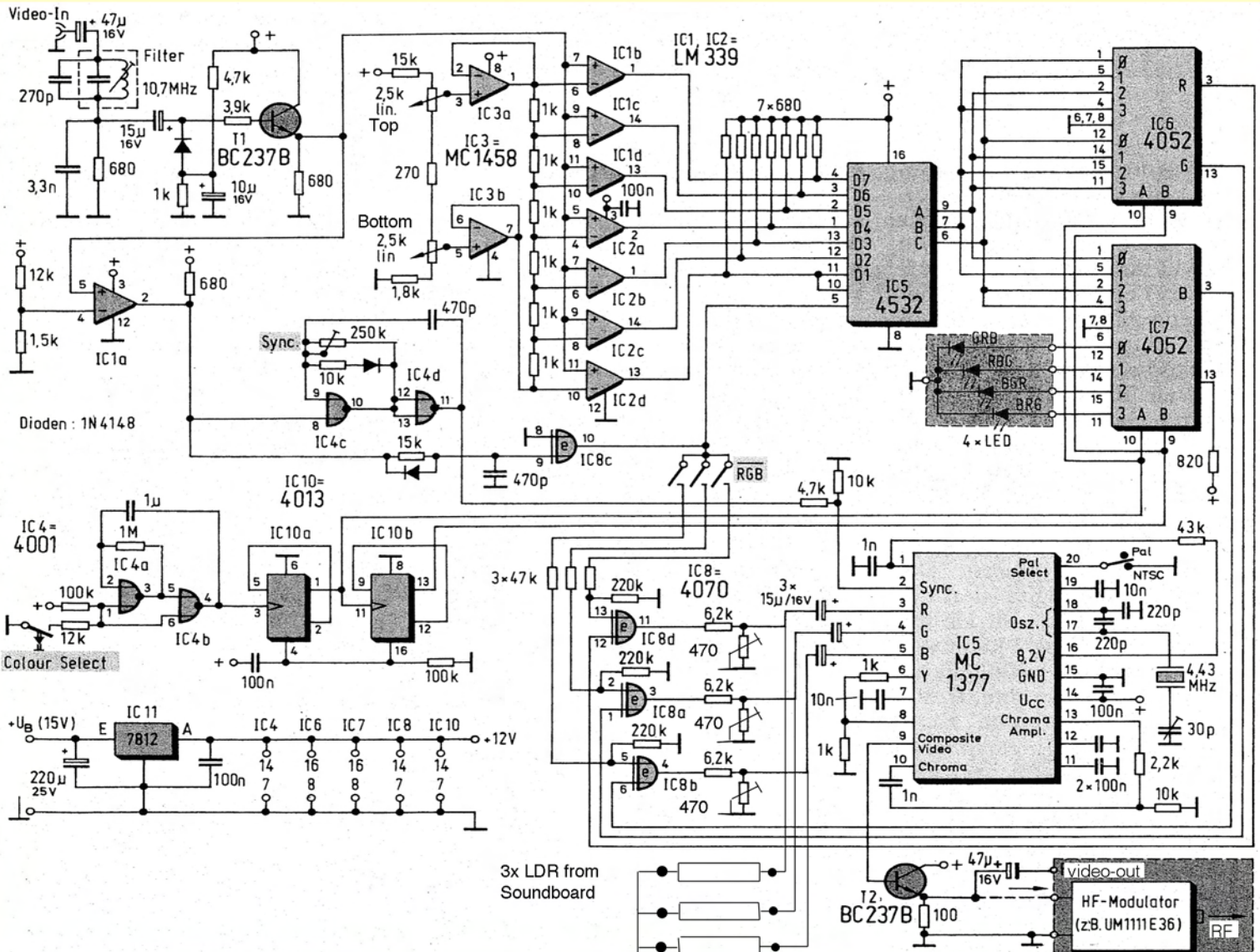
Powercircuit



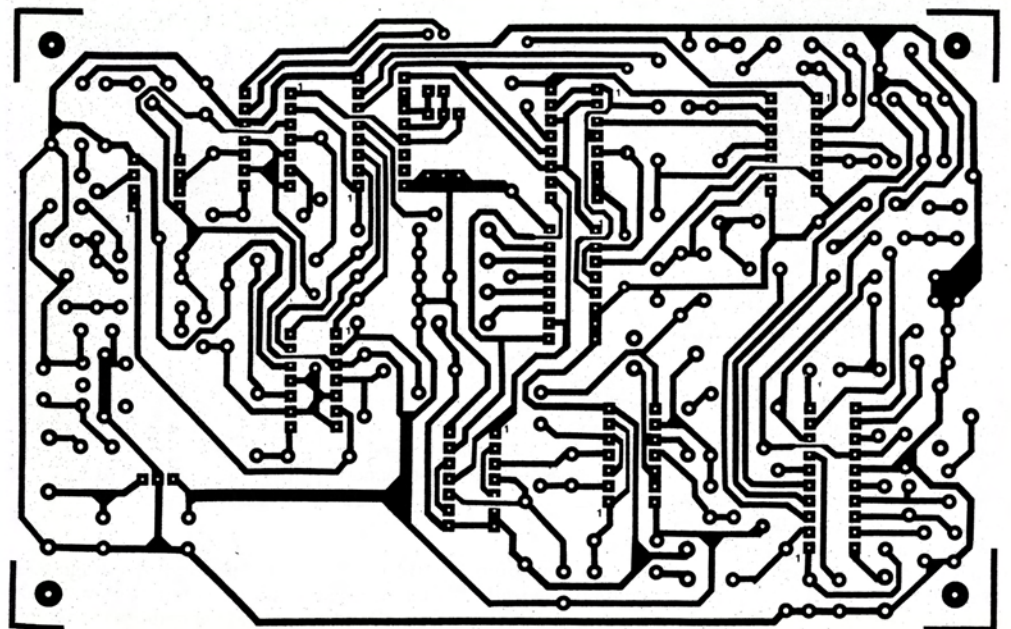
The power of the videoboard is 12 Volt and of the soundboard is 9 Volt.
The 6 Volt power is for my small build-in videomonitor; you can drop this.

Schematic diagram "Visualist" video effect controller

Videocircuit

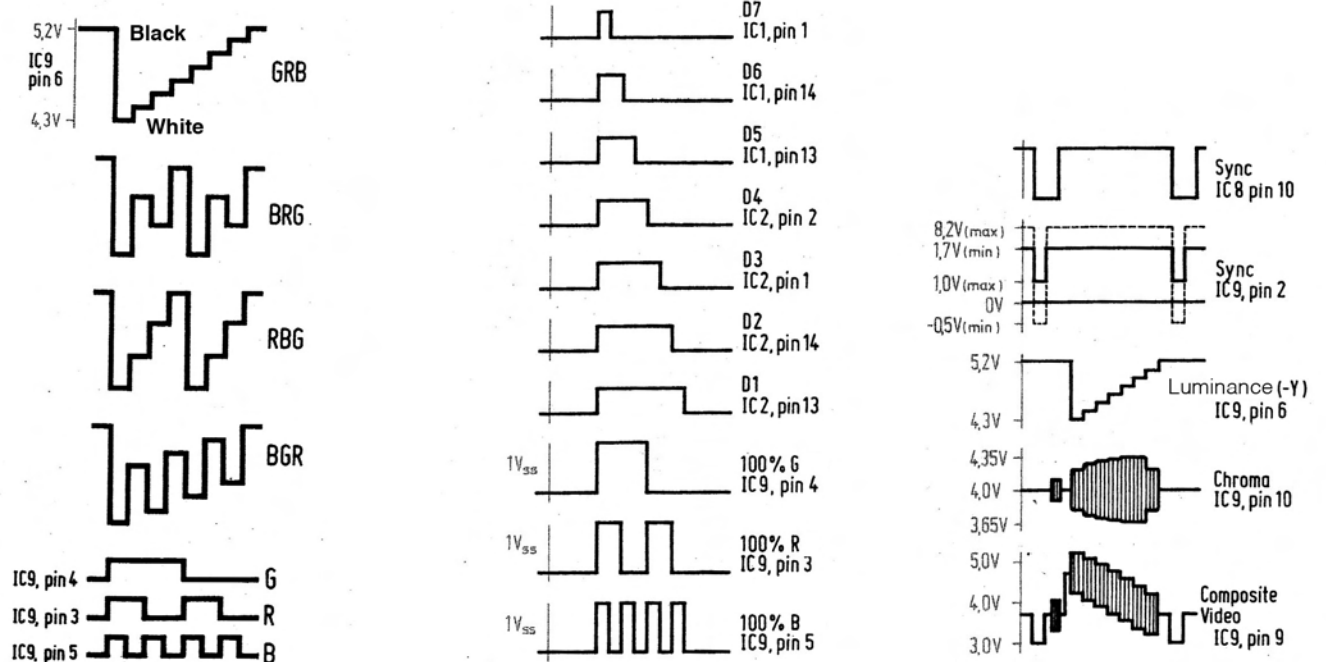
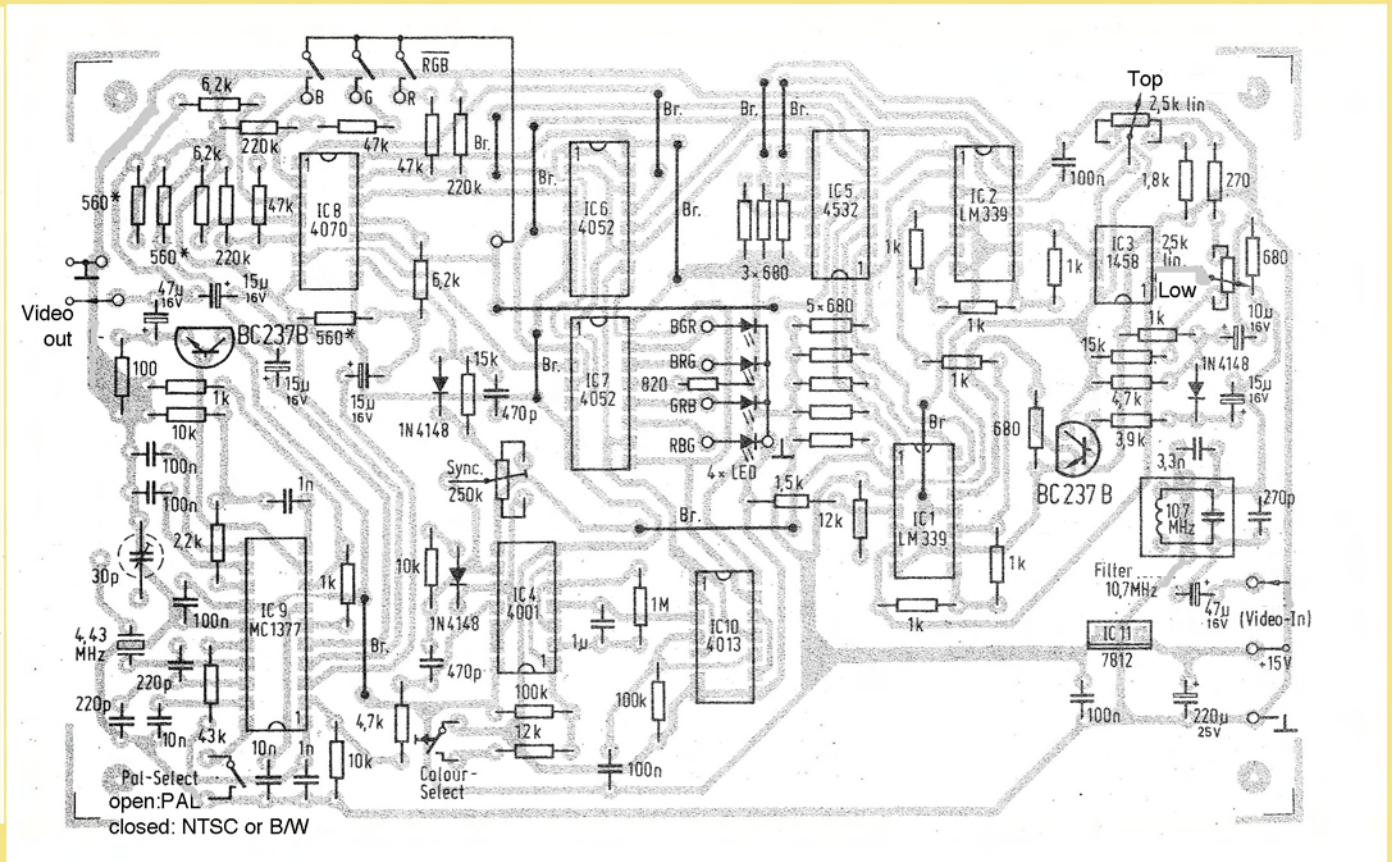


Here we got the core circuit with the board. This will make it easier to solder all together. Some knowledge of electronics is a pre. Check all the connections before you put the power on. The board is seen from the bottom side. The size is 16 by 10 cm. This is the size of a eurocard. Because this is an O.S. hardware project somebody can make this board for the VJ's who don't have the tools. The Visualist circuit is the basis for experiments and wonder. Good luck, Bertoa



Board lay-out "Visualist" video effect controller

Videoboard



For the finetuning with the oscilloscope are here the recalibration signals and testpoints.