

Color Organ V2 Datasheet

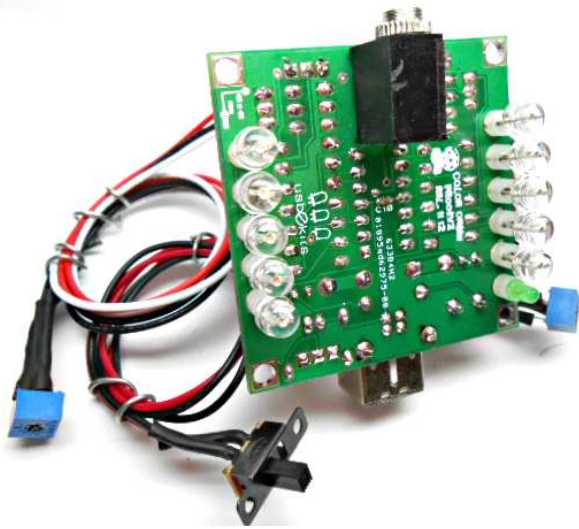
Functionality

A very cool 2 channel Color Organ kit! Lay back and watch Leds dance on the music!
5 green leds for the low frequencies (bass) and 5 blue leds for the high frequencies (treble)
The kit is based on a quad amplifier (LM324).

Just drive an audio signal of an analog output (e.g. soundcard) direct to the audio jack of the kit.
Use an audio splitter if you have only one output. The cable can be both mono and stereo.
The audio signal now is ready to travel through the opamps.

The 2 first opamps of the LM324 are active filters that separate the low and high frequencies.
The other 2 opamps are amplifying the separated signals separately. With two potentiometers you can adjust the amplification to the level you want accordingly to the input audio signal strength.

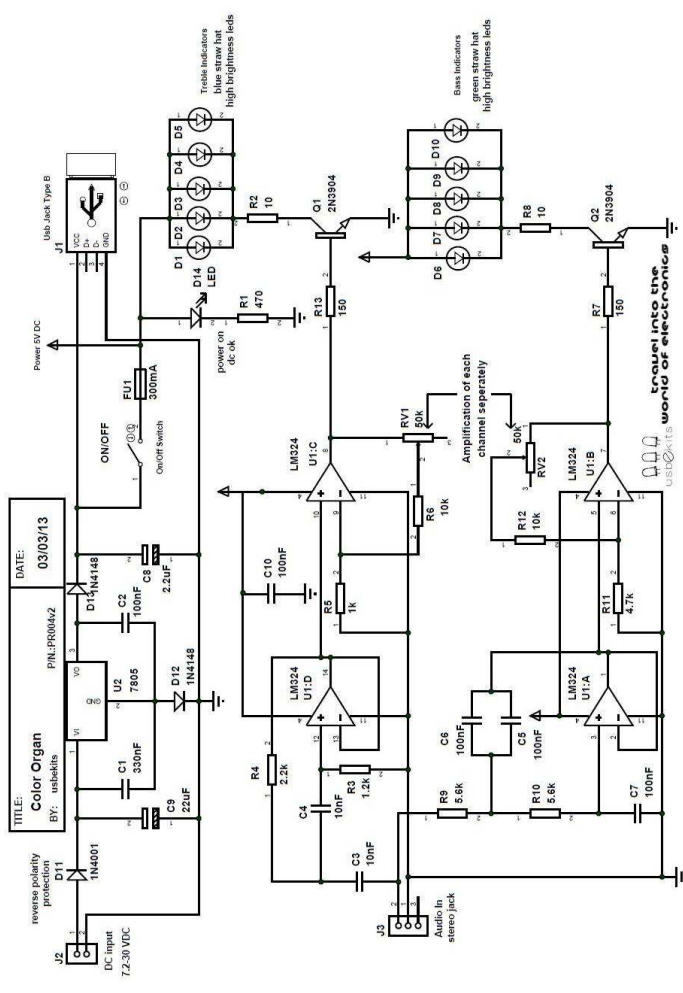
Now the new signals trigger 2 npn transistors (2N3904), one for the low frequencies and one for the high frequencies. The transistors drive the green and blue high brightness straw hat leds!



Technical Features

- Layers :** 2
- PCB Thickness :** 1.6mm
- Dimensions :** 50 mm x 50 mm (2 inch x 2 inch)
- Operating Voltage :** 5 Vdc via usb cable or 7.2 to 30 Vdc via external power supply or 9v bat.
- Operating current :** 100 ma max
- Rel.date:** 12/12/12

Circuit schematic



Part list

<u>Ref.</u>	<u>Type</u>	<u>Value</u>
C1	Ceramic Capacitor	330nF
C2,C3,C6,C7	Ceramic Capacitor	100nF
C4,C5	Ceramic Capacitor	10nF
C8	Electrolytic Capacitor	2,2uF
C9	Electrolytic Capacitor	22uF
C10	Smd 0603 Capacitor	100nF
D1-D5	Straw hat LEDs	Blue
D6-D10	Straw hat LEDs	Green
D11	Diode	1N4001
D12,D13	Diode	1N4148
D14	3mm difused led	Green
U1	Voltage Regulator	7805
Q1,Q2	NPN Transistor	3904
R1	Resistor 1/4 watt	470
R2	Resistor 1/4 watt	10
R3	Resistor 1/4 watt	1,2k
R4,R11	Resistor 1/4 watt	2,2k
R5	Resistor 1/4 watt	1k
R6	Resistor 1/4 watt	10k
R7,R13	Resistor 1/4 watt	150
R8	Resistor 1/4 watt	10
R9,R10	Resistors 1/4 watt	5.6k
R11	Resistor 1/4 watt	4.7k
R12	Resistor 1/4 watt	10k
U2	Quad Opamp	Lm324
RV1,RV2	jst 3pin cable Trimmer	50k