

Color Organ High power Datasheet



Technical Features

Layers :2

PCB Thickness : 1.6mm

Dimensions : 50 mm x 50 mm (2 inch x 2 inch)

Operating Voltage : 5-24 Vdc .

Operating current : 20 ma

Output sink current: 4 amps max

Rel.date:17/05/14

Functionality

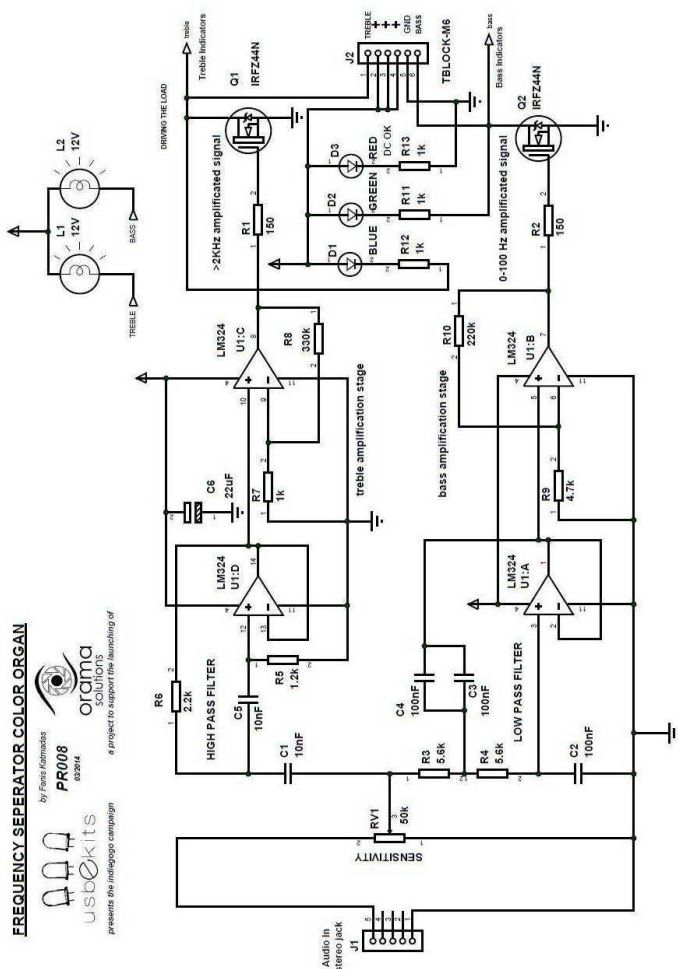
green led indicator for the low frequencies (bass) and blue led indicator for the high frequencies (treble) are attached. A red led dc ok is attached too. The input signal is via a typical female audio 2,5mm connector. The kit is based on a quad amplifier (LM324).

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. But first of all it must pass through the potentiometer to choose the audio level.

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.

Now the new signals trigger 2 high power n-channel mosfets irfz44n, one for the low frequencies and one for the high frequencies. The mosfets can sink currents up to 4 amps. Attach a heatsink if you notice too much heat on the mosfets.

Circuit schematic



Part list

Ref.	Type	Value
C1,c5	Ceramic Capacitor	10nF
C2,c3,c4	Ceramic Capacitor	100nF
C6	Electrolytic Capacitor	22uF
D1,d2,d3	3mm difused leds	Blue, Green, Red
J1	Audio jack	stereo Audio input
J2	Terminal Block	6 pin Dc input & sink outputs
Q1	n-channel mosfets	irfz44n
Q2	n-channel mosfets	irfz44n
R1	Resistor 1/4 watt	150
R2	Resistor 1/4 watt	150
R3	Resistor 1/4 watt	5.6k
R4	Resistor 1/4 watt	5.6k
R5	Resistor 1/4 watt	1.2k
R6	Resistor 1/4 watt	2.2k
R7	Resistor 1/4 watt	1k
R8	Resistor 1/4 watt	330k
R9	Resistor 1/4 watt	4.7k
R10	Resistor 1/4 watt	220k
R11	Resistor 1/4 watt	1k
R12	Resistor 1/4 watt	1k
R13	Resistor 1/4 watt	1k
U1	Quad Opamp	Lm324
RV1	potentiometer	50k