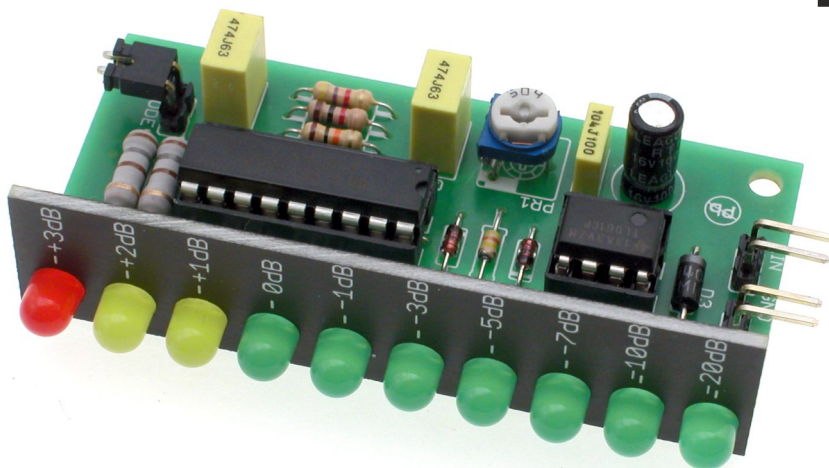




AVT 1650



ASSEMBLY DIFFICULTY



Signal level indicators are a must in an audio track. They allow quick control of amplifier path gain to eliminate overdrive.

The presented circuit will find application mainly in all kinds of preamplifiers and mixers. It is simple to manufacture and the modular design makes it easy to install in devices with multiple signal paths.

Treść:

Characteristics

- 10-point reading field
- single-channel system with the possibility of putting together multiple modules
- indications for -20, -10, -7, -5, -3, -1, 0, +1, +2 and +3 dB
- option to work in linear or point mode
- stepless gain adjustment
- very easy calibration
- 9 V DC power supply
- board dimensions: 67 × 32 mm and 67 × 16 mm (scale)

Circuit description

The indicator has a 10-point reading field made of LEDs. The diodes were calibrated in dB by giving them the following values from D4 to D13, respectively: -20 dB, -10 dB, -7 dB, -5 dB, -3 dB, -1 dB, 0 dB, +1 dB, +2 dB, +3 dB.

The indicator can operate in line or point mode. It is selected by the position of the MODE jumper. If it is short-circuited, the meter operates in line mode. If opened, in point mode. Figure 1 shows the schematic diagram of the driving indicator. The input signal is fed to the In input through the C3 capacitor and R5 resistor. It is then fed to the input of a peak detector made up of diodes D1 and D2, the PR1 potentiometer and the U2 operational amplifier. The amplitude of the output voltage can be adjusted using the PR1 potentiometer. The input resistance of the detector is

large, so it does not have too much load on the signal source.

The installation diagram can be seen in Figure 2. Once assembled, the only adjustment required is to calibrate the detector. A voltage of 0.775 V (0 dBu) was taken as the 0 dB level. In order to calibrate, a constant voltage of 1.55 V should be applied to the input of the circuit and then the PR1 potentiometer should be used to set the light of the D13 diode (+3 dB).

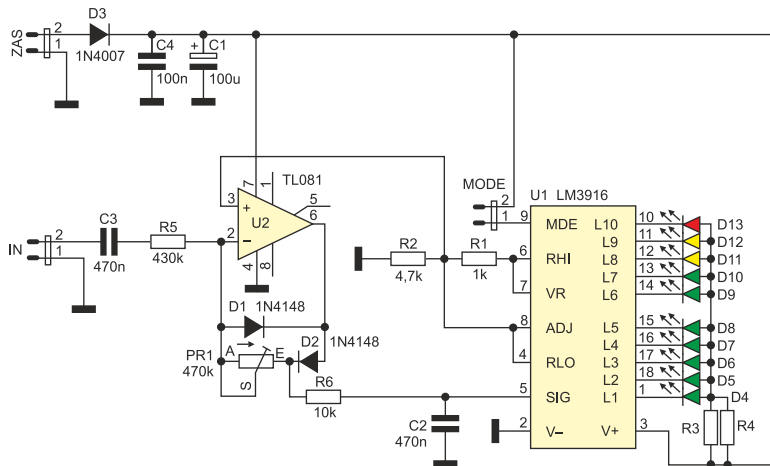


Fig. 1 Schematic diagram

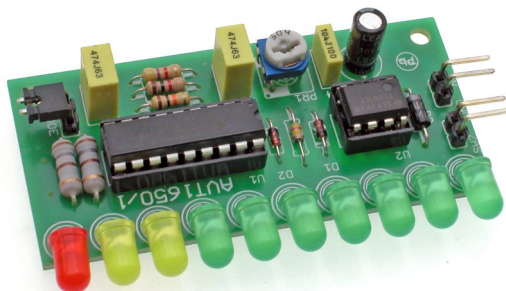
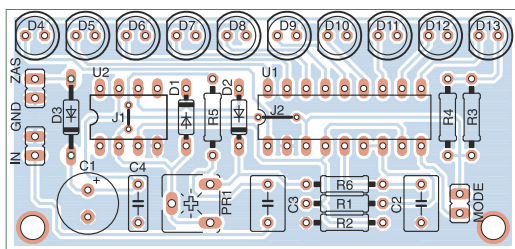


Fig. 2. Component layout on the circuit board

List of elements

Resistors:

- R1:.....1 k Ω
- R2:.....4.7 k Ω
- R3, R4:180 Ω / 0.5 W
- R5:.....430 k Ω
- R6:.....10 k Ω
- PR1:.....500 k Ω mounting potentiometer

Capacitors:

- C1:.....100 μ F
- C2, C3:470 nF
- C4:.....100 nF

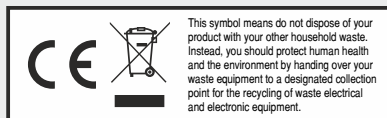
Semiconductors:

- U1:.....LM3916
 - U2:.....TL081
 - D1, D2:1N4148
 - D3:.....1N4007
 - D4 – D10:LED 5 mm green
 - D11, D12:LED 5 mm yellow
 - D13:.....LED 5 mm red
- Other:**
- In, Zas:.....goldpin angle 1 \times 2
 - Mode:.....goldpin angle 1 \times 2 + jumper

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