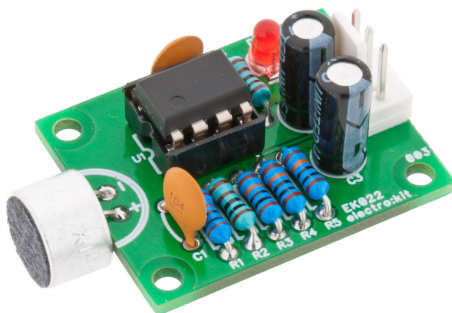


# EK022 – Electret Amplifier

## Kit description:

EK022 is an amplifier for electret type microphones. A microphone is included in the kit and can be mounted directly on the board. The circuit provides all the necessary components for powering the microphone and amplifying the signal to a level suitable for use with a microcontroller. Please note that the output is DC-coupled! If the amplifier is to be used with regular audio equipment, a capacitor (~1 – 10uF) should be mounted in series with the output. To obtain a known output impedance, an external resistor should be mounted in series with the output. The amplifier is preset for 100x gain, but the gain can be modified by changing the feedback resistor (R3). The gain is calculated using the formula  $G=R2/R3$  (1k/100k = 100x gain). The OP-amplifier used is a low voltage, low noise type and can be powered from 3V up to 12V.



- \* Supply voltage: 3 - 12 VDC
- \* Current consumption: 2.2mA (@ 12V)
- \* Dimensions: 31.75 x 25.4mm
- \* Mounting holes: c-c 26.67 x 20.32mm, ø2.54mm

## Assembly guide:

Before you begin mounting components, make sure the board is free from damage and scratches. Make sure all the components are included and are of correct value. Compare with the component list!

Begin mounting the lowest components and work your way up to the largest. IC sockets, resistors, ceramic capacitors and diodes go first. Electrolytic capacitors, connectors and potentiometers go last. Some components are polarized and must be mounted in the right way. Please observe the markings on the board!

**Component list:**

RefDes	Value	Qty.	Part.no.	
A1	Microphone	1	40290007	
C1	220 nF	1	41015675	
C2	100 nF	1	41003038	
C3, C4	10 uF	1	40520003	
D1	LED 3mm	1	40307000	
R1, R4, R5, R6	10 kohm	4	40811410	
R2	1 kohm	1	40811310	
R3	100 kohm	1	40811410	
U1	TLC271	1	40350271	

**Schematic:**

