

Differential Microphone Pre-Amplifier

The project shown here is a microphone preamplifier provides high quality amplification, optimized for use in computers, media and mobile applications. The project provides a differential input stage, making the device particularly effective when layout constraints force the microphone amplifier to be physically remote from the ECM microphone. This project features adjustable gain using PR1 trimmer potentiometer, very high power-supply rejection (95dB), and common-mode rejection (79dB), making it ideal for low-noise applications. Board provided with condenser microphone as well as connector to connect external microphone, selection of external or internal microphone possible with help of on board Jumper. Circuit required 5V DC. The circuit provides differential output, use +OP/GND for single ended output. External microphone gain can be changed using R5.

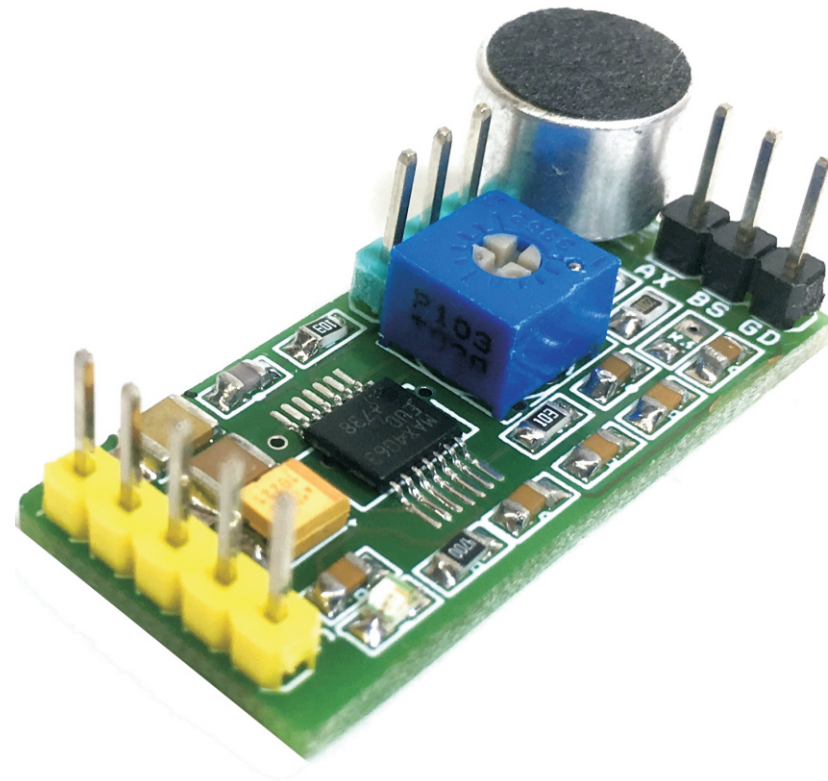
The project features two selectable inputs onboard microphone or external microphone, differential outputs, adjustable gain, an integrated low noise bias source, and a low-power shutdown mode. Two input paths provide both differential and single ended microphone sensing. The high-noise rejection of the differential input is ideally suited to an internal microphone where system noise and long-run PC board traces can degrade low-level signals. The single-ended input provides a simple connection to an external microphone, can be connected to CN2.

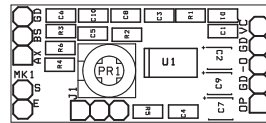
Features

- Supply 5V DC
- On Board Power LED

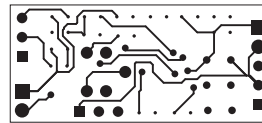
Input/output Connections

- MK1: Onboard Microphone
- CN3: Differential Output
- CN1 : Power Input 5V DC (2.4V-5V Possible)
- CN2 : External Microphone
- D1 : Power LED
- PR1 : On Board Microphone Gain Adjust
- J1 : Onboard Mic./ External Microphone selection

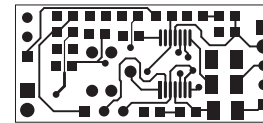




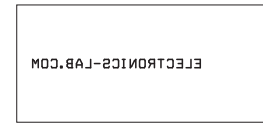
Silk Screen Top



Bottom Layer



Top layer



Slik Screen Bottom

PCB DIMENSIONS 34.62 X 15.86MM

BOM			
SR.	QNTY	REF	DESC.
1	1	CN1	2 PIN MALE HEADER CONNECTOR
2	1	CN2	3 PIN MALE HEADER CONNECTOR
3	1	CN3	4 PIN MALE HEADER CONNECTOR
4	4	C1,C3,C8,C10	0.1uF SMD 0805
5	1	C2	10uF/16V SMD 1210
6	1	C4	10PF SMD 0805
7	2	C5,C6	1uF/16V SMD 0805
8	2	C7,C9	1uF/25V SMD 1210
9	1	D1	LED SMD 0805
10	1	J1	JUMPER3P
11	1	MK1	CONDENSOR MICROPHONE
12	1	PR1	20K OR 22K TRIMMER POT
13	1	R1	470E SMD 0805
14	1	R2	2K SMD 0805
15	1	R3	0E SMD 0805
16	2	R4,R6	2.2K SMD 0805
17	1	R5	10K SMD 0805
18	1	U1	MAX4063 TSOP 14

