

FT-817 Speech Compressor

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FT-817 doesn't have any type of speech processing built-in. This audio speech compressor is designed with the Analog Devices SSM2165 device. The circuit is small enough that it can be built into the microphone. Gain of whole circuit is about 18dB, compression ratio is set by R1 and can be varied from 1:1 to 15:1. Output level can be set by R2, R3. Power consumption is around 7.5mA. Compressor is supplied directly from microphone, no external power supply is needed.

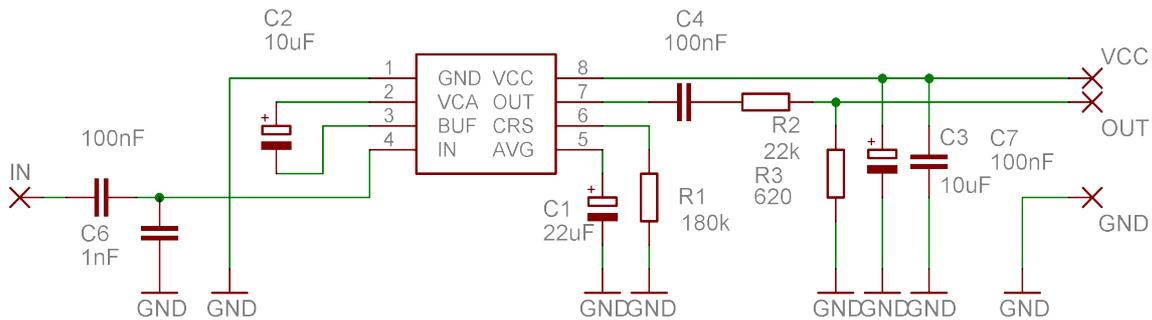
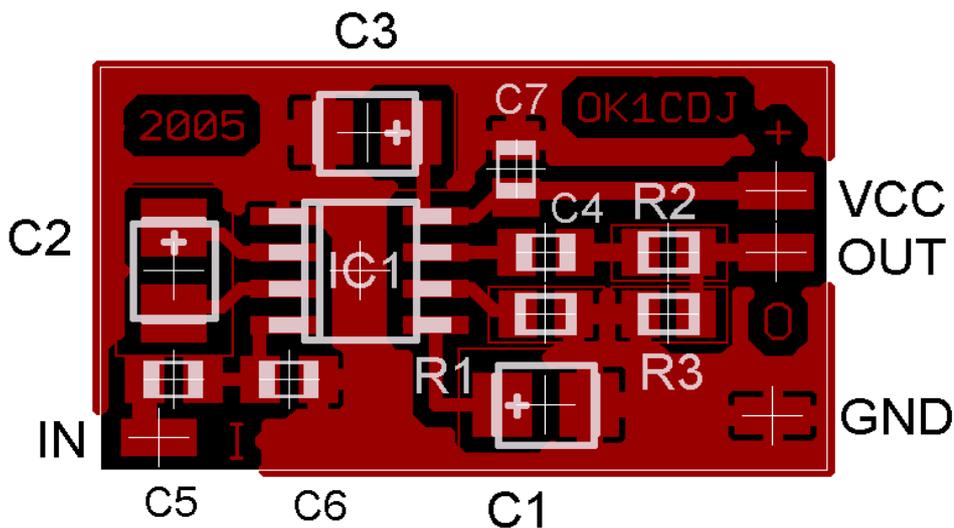


Fig. 1 – schematic



Compressor is completely build using SMT on small board (15x11mm).

Fig. 2 - PCB

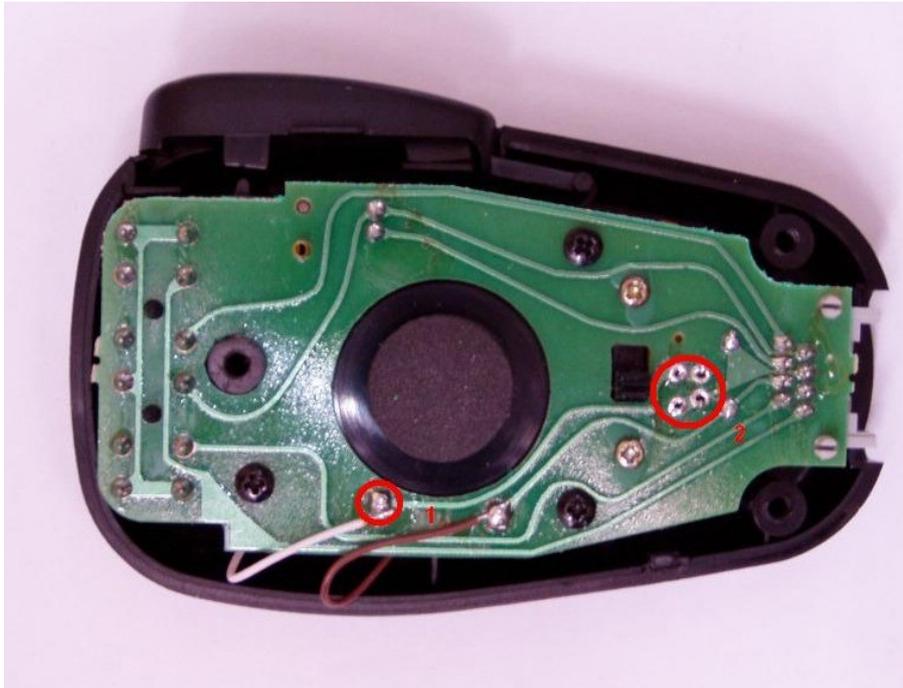
Part list:

C1	22uF /10V	size B
C2	10uF /10V	size B
C3	10uF /10V	size B
C4	100nF	0805
C5	100nF	0805
C6	1nF	0805
C7	100nF	0805
IC1	SSM2165	SO08
R1	180k	0805
R2	22k	0805
R3	620	0805

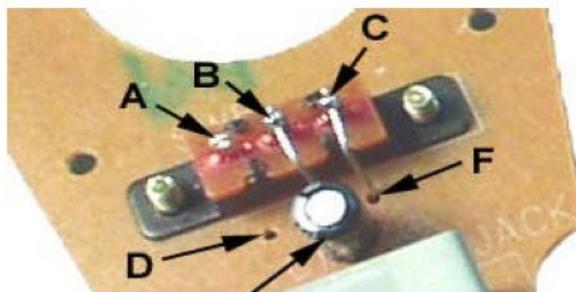
Installation procedure

Installation of compressor. To MH-31 microphone requires skill with a soldering iron and other tools! Sometimes people have problem with RF-Audio feedback when using indoor whip antennas, than you need place ferrite beads or RF choke on power supply wire and on wire from microphone element.

- 1) Remove the three screws from the rear of microphone and take off Back Cover
- 2) Unsolder the white wire that is connected to the PCB at the location indicated by red circle # 1.
- 3) Remove (by solder wick) solder on the pads locted by red circle #2

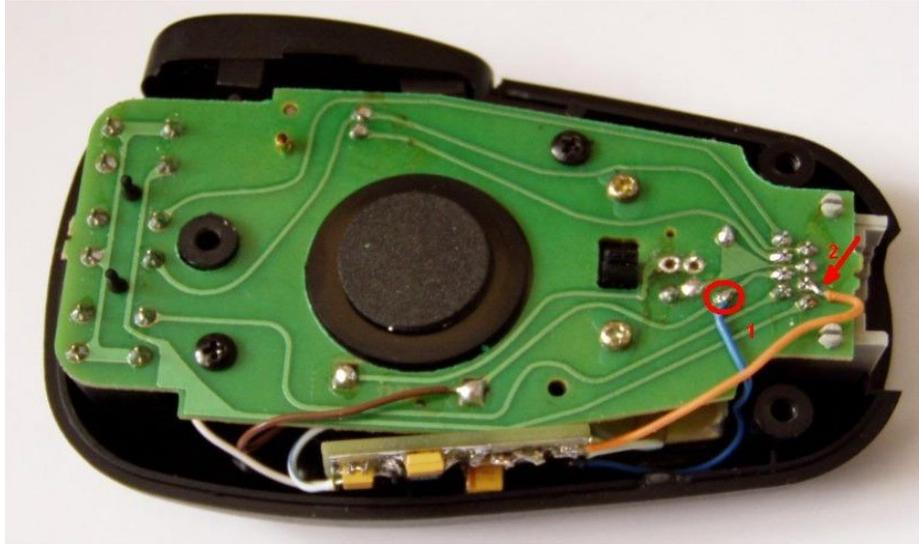


- 4) Remove three black screws that attach the PC board to the front case.
- 5) Remove the PCB from front case
- 6) Remove the capacitor.
- 7) Next remove the wire connecting lug C on the Tone switch to point F on PCB.
- 8) Wire from point B move and solder to point F
- 9) Next you need 4 pcs of wire, length approx. 3cm (1.5 inch)



- 10) White wire from mic element solder to pad marked I on compressor PCB
- 11) From pad marked I on compressor PCB solder first pcs of wire to lug A on switch.
- 12) From output (pad marked O on compressor PCB) solder next wire to lug C on switch.
- 13) Put back microphone PCB and screw taht you removed in Step 4.

14) Connect GND of compressor (see picture) to point indicated by red circle #1 and power (on compressor PCB marked by +) to point #2



15) Put compressor to the microphone (see picture) and fix it by double sided tape.

16) Replace the microphone Back Cover onto microphone

17) Compressor is controlled by tone switch on the Back Cover of MH-31 microphone. Position #1 is ON and position #2 is OFF.

Links:

<http://www.eham.net/articles/2627>

<http://www.eham.net/reviews/detail/2343>

<http://www.analog.com/en/prod/0,2877,SSM2165,00.html>