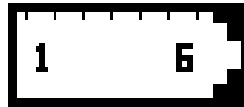


## Real MIDI out on ZX Spectrum 128K

The ZX Spectrum 128K models have MIDI circuitry:

Midi/RS232 port  
(6 way BT socket):



Pins used for midi out:

1. Ground
5. Out
6. +12V

Problem is though that there is no real MIDI connector on your ZX Spectrum, like this:

MIDI out port:



Pins used:

4. MIDI out (current source)
5. MIDI return (current sink)

Another problem is that the ZX Spectrum's MIDI output signal is not a real MIDI signal.

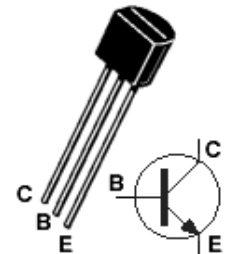
To create a real MIDI output on your ZX Spectrum, you'll need 5 components and some wire:

1. BC549C or BC337 transistor or equivalent \*1
2. 10K Ohm resistor
3. 220 Ohm resistor
4. 1K Ohm resistor
5. Midi output connector

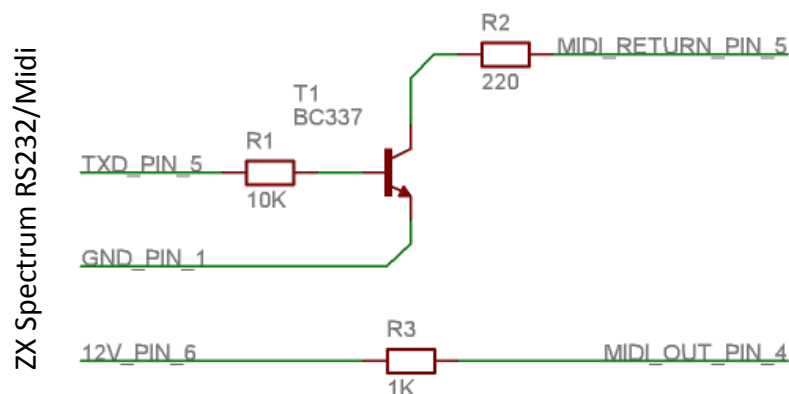
\*1 In my original interface there was a BC549C transistor. But you can also use the BC337 (same kind of NPN transistor, but with higher maximum values) or equivalent.

Both BC549C and BC337 have the same pinouts.

BC337/BC549C:

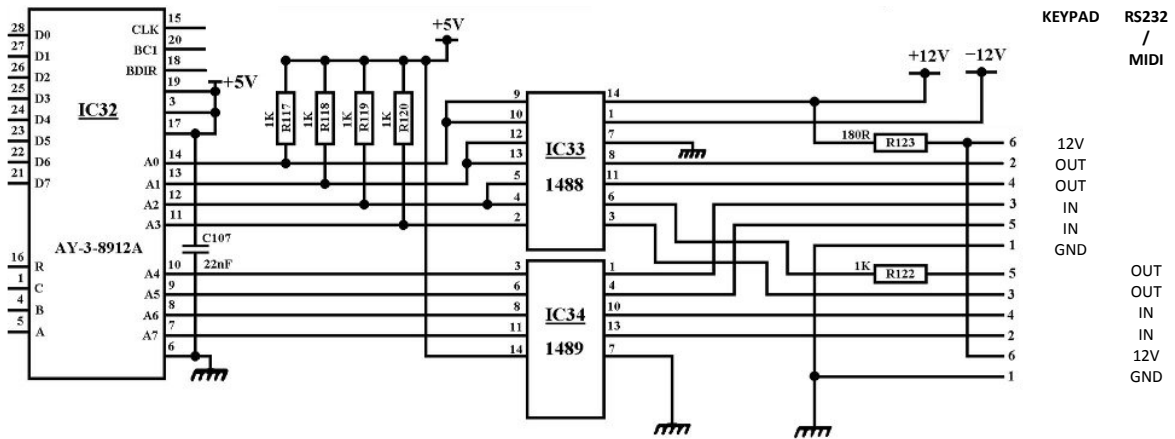


This is how to connect the parts:



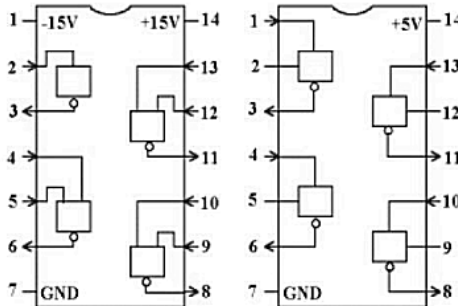
MIDI connector

# RS232/MIDI and KEYPAD ports

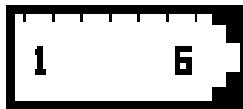


MC1488(TTL->RS232)

MC1489(RS232->TTL)



6 way BT socket



KEYPAD pinout

1. Ground
2. OUT
3. IN
4. OUT
5. IN
6. +12V

RS232/MIDI pinout

1. Ground
2. TXD In
3. RXD Out
4. DTR In
5. CTS Out
6. +12V