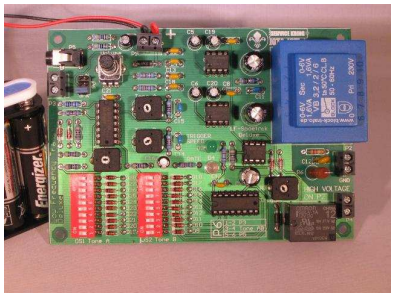


LF SPOETNIK DELUXE 2011

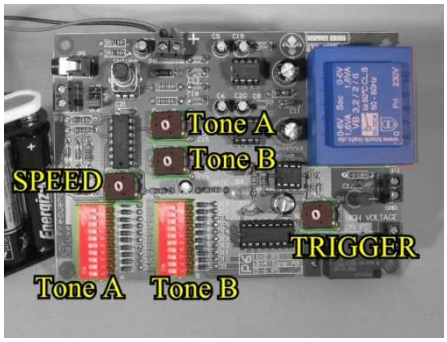
The Sputnik Deluxe is an enhanced version of the micro-LF Sputnik.

The Deluxe version has the following options:

- connection for MP3 player
- connection for other audio sources such as electronic greeting cards
- built-in two-tone sound generator
- pulse generator for external audio sources can be controlled

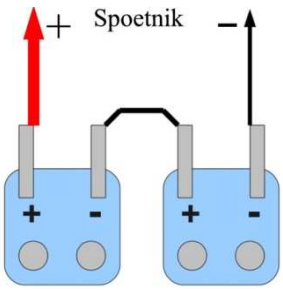
The two-tone sound generator offers the ability to simultaneously or alternately two tones to be sent. This follows a set rhythm. The rhythm consists of up to 10 steps. To send a message in Morse code you could emit a rhythm with low tones and high tones instead of long and short tones. You can mark a low tone as a stripe and high tone mark a dot.

Speed: This sets the speed of sound pattern
Tone A: Pitch set to DS1
Tone B: Pitch set to DS2
Trigger: Speed at which the external contact is switched



The external contact (P4) can be used to switch contacts, for example, a momentary short circuit greeting card. Often this requires a short pulse for a tune to continue playing. The speed of these pulses will be determined by the "trigger".

The Sputnik Deluxe comes as a partial kit. The kit includes the PCB and the "key components". The key components are the same components of micro-LF-sputnik, plus the relay.



In some cases 2 x 4 Battery holders are supplied with the kit. If so, please connect them in serial connected like the picture .

The other components can be purchased at an electronics shop or may be found in a junk box. Or "do the green" recycle components from old equipment. (HINT: Measure the components for assembly!)
Sputnik provides opportunities to specifically adapt to their own use. This mainly relates to the timing.

Trigger circuit

The timing of the trigger circuit is determined by the components surrounding IC3. The circuit provides a short pulse (relay contacts are closed) and wait for a configurable period (time is determined by R3 and C2). The pulse duration is determined by R2 and C2. Variation of these components will adjust the times .

If a long pulse with a short break is desired, this can be done by reversing the direction of D2. Now the relay will be closed for a long time (determined by R3 and C2) and a short time his contacts open (determined by R2 and C2).
If D2 is not installed, then the time the relay contacts are open as long as the contacts of the relay are closed. The time is determined by R3 and C2.

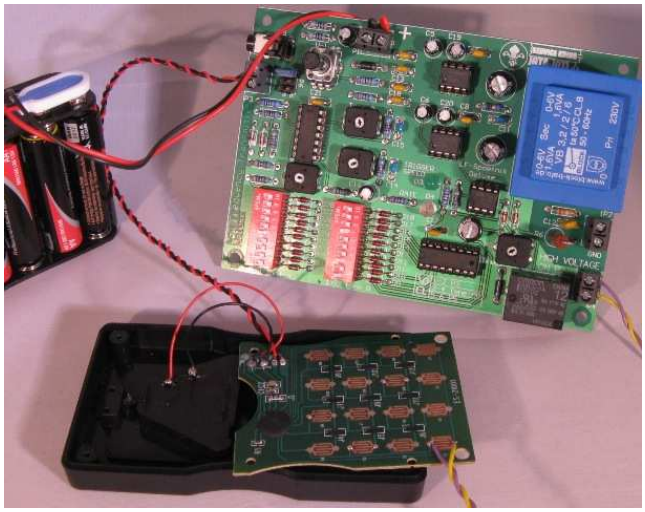
Monitoring the sound

By placing the jumper on P6 at 1-3 or 3-5, the input signals P3 or the tone generator given out through P5. Connect one end of your earphone to P3. Here you are hearing the tones of the signal from the audio source connected to P3.

Connecting an external sound source to P3

The specific method of connecting a sound source will depend on which particular sound source is connected. For this reason, here is an example to show how some things can happen. In general, it means that the wires of a speaker are taken separately and are connected to P3. The black wire to the terminal marked "GND", the red to the pole marked "SIG". Any switch contact is connected to P4 (or switching contact in series to face with the Power supply).

The example assumes a soundbox. It can generate various sounds. However, this is only a button. Holding down a button is not causing (these soundbox) , the sound to repeat. Therefore, a button needs to be pressed and released again. This can be simulated with the trigger circuit of the Sputnik deluxe.



The soundbox is fed from three button cells. This we continue to use.

The soundbox is unscrewed. Here we see four wires. Two from the battery, it will be retained and two wires going to the speaker.

The wires of the speaker we disconnect and we solder them on P3 (black to GND, red to SIG).

Two new threads are used to link a P4 to the switching contacts. The right sound is selected and the wires are connected to the contacts on the Sound Box board

Make sure the jumper on P6 is located at 1-2.

To check if all is working correctly, put jumper on 1-3. With earphones on P5 you can now listened to the audio signal from the generator. This can be especially useful when setting the "trigger".