

Dual Sample&Hold Description:

This implementation follows closely the original Elektor Formant implementation. Refer to the original documentation if needed. Changes are the input buffers, using the LM13700 instead of the CA3080 and the adaption to 10Vpp signal level.

Optional mod: the threshold voltage range of the Erica Synths design is app. 0.1 to 2.5V, like in the Elektor original, but as in the ADSR Controller design of Erica the new LFO amplitude is +/- 5V, not +/- 2.5V as in the Elektor original. So change R14&15 to 12kOhm and R5&6 to 100Ohm (see Erica Formant schematic) to obtain an adjustable threshold voltage range from app. 55mV to 5.3V.

S&H Calibration

Set the THRESHOLD potentiometer (R1, R2) to zero (CCW);

Input a square wave to the trigger input;

Use an oscilloscope to measure the output signal at the tapper of trimpotentiometer R23 at TP4 (R24 at TP5);

Adjust R23 (R24) to get 3,5V signal amplitude at TP4 (TP5);

Adjust the noise amplitude at TP1 to desired level with trimpotentiometer R38.

Noise Filter configuration

Configuration options:

C21, R34, R35, C22 values must be selected according to required filter characteristics.

<https://www.learningaboutelectronics.com/Articles/Bandpass-filter-calculator.php>

<https://www.digikey.com/en/resources/conversion-calculators/conversion-calculator-low-pass-and-high-pass-filter>

HP: Mount C21, R34. R35 = 0R, C22 = DNP;

LP: Mount R35, C22. C21 = 0R, R34 = DNP;

BP: Mount C21, R34, R35, C22;

Inverter: C21 = 0R, R35 = 0R, R34 = DNP, C22 = DNP.

The noise filter in this kit is configured in LP mode with 2.12kHz cutoff frequency, where R34 is not used, R35 = 7.5kOhm, C22 = 10nF, C21 is replaced by wire jumper.

Special parts

DA2 alternative CA3240