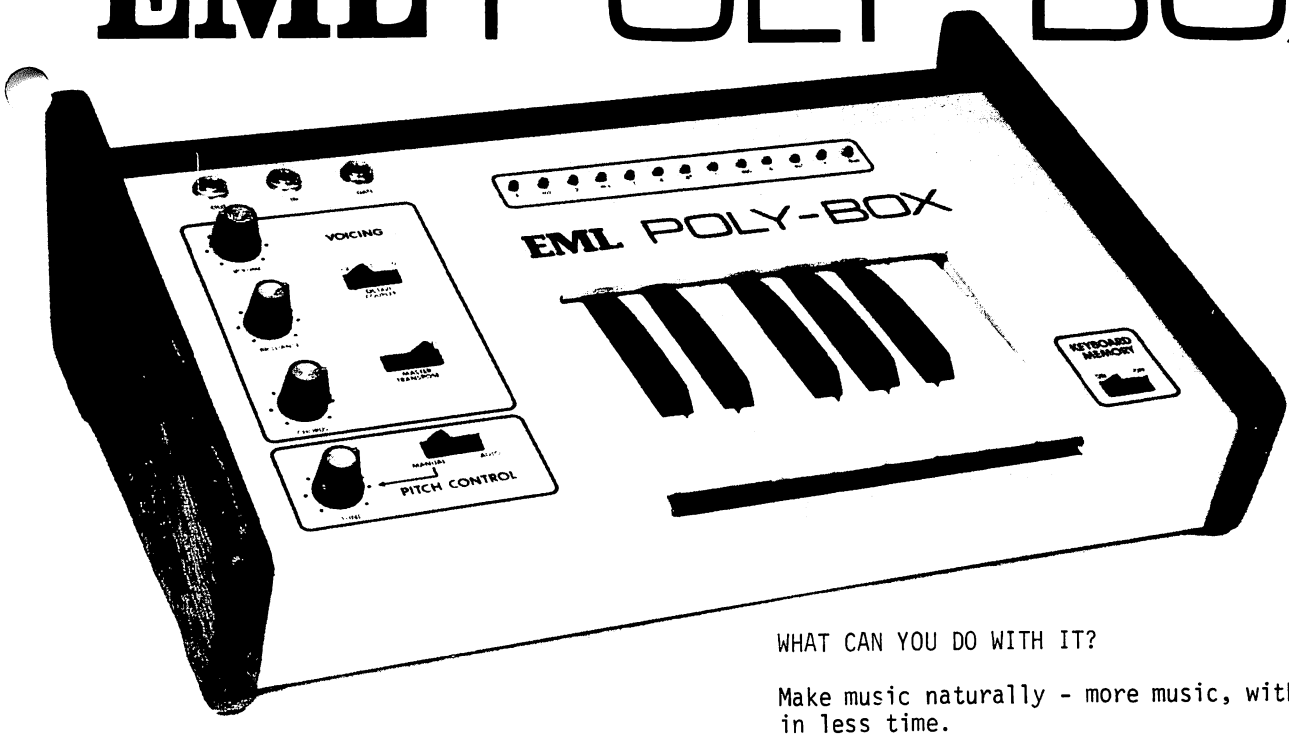
EML POLY-BOX



$475.-

Poly-Box is a brand new synthesizer concept that puts some really exciting new musical possibilities within your reach.

ADD POLY-BOX TO YOUR SYNTHESIZER AND YOU'LL GET 26 ADDITIONAL PITCH SOURCES PLUS A UNIQUE POLYPHONIC CAPABILITY.

WHAT IS IT?

Poly-Box is a pitch following variable chord generator controlled by your synthesizer and Poly-Box's own keyboard with built-in memory. Poly-Box takes a single pitch from your synthesizer and creates two banks of pitch sources. Each pitch bank contains 13 simultaneously available pitch sources at precise semitone intervals - covering an entire chromatic octave. The pitch banks may be in the same or different octaves, and can cover the range from one above to three octaves below the synthesizer oscillator.

In automatic pitch following mode, Poly-Box locks onto the synthesizer pitch and follows it through bend, vibrato, portamento and keyboard transpositions. The pitches in each pitch bank change in parallel with the synthesizer pitch. The Poly-Box keyboard and controls are used to select which of the pitches in the pitch banks - up to 26 at one time - are passed on through the synthesizer!

Poly-Box is easy to add to your present synthesizer. It takes just 3 patchcords to use Poly-Box with any patchable synthesizer.* Your non-patchable synthesizer will need only a minor modification.**

*EML 100, EML 101, EML 200, Aries Modular, Arp 2500, 2600, Moog Modular, Oberheim, Roland 100 and 700, Steiner Parker, and others.

**With just a small adaptation, your EML 500, Synkey, Micro, Mini. Axxe, Odyssey or other non-patchable synthesizer can be made to accept the Poly-Box. Consult EML for details.

WHAT CAN YOU DO WITH IT?

Make music naturally - more music, with less hassle, in less time.

In the recording studio or on the stage, you'll get a new gutsy polyphonic sound from your synthesizer - without fussing with oscillator tracking, or lugging around expensive and finicky instruments. Poly-Box will let you get more music from your synthesizer than you thought possible.

In the composition studio you'll create entirely new controllable timbres and voices. Poly-Box will plug right into any modular system. It's the most music-per-buck module you can buy.

HERE ARE A FEW SAMPLES OF WHAT YOU CAN DO.

1. Depress a key on the synthesizer and play Poly-Box polyphonically. Poly-Box will gate or trigger the synthesizer envelope(s) if desired, and will follow bends and vibratos of the synthesizer oscillator. Transpose Poly-Box by semitones or octaves with the synthesizer keyboard. Note that Poly-Box increases the effective length of your synthesizer's keyboard by one octave. With keyboard memory on, sustain is controlled by the synthesizer's envelopes. With memory off, you play stacatto.

2. Select a chord on the Poly-Box keyboard - you don't have to hold the chord - Poly-Box will remember it until the next is chosen. Now play the synthesizer keyboard. You'll be playing a parallel chord, again with all the pitch bend, portamento and vibrato effects of your synthesizer. Change chords at will. Transpose both Poly-Box pitch banks up or down by precisely an octave (it's done digitally) or use the octave coupler to transpose the second pitch bank one or two octaves below the first. You can get up to two octaves of chromatic pitches at once if you please!

3. Combine the techniques of 1 and 2 above for some really exciting music.

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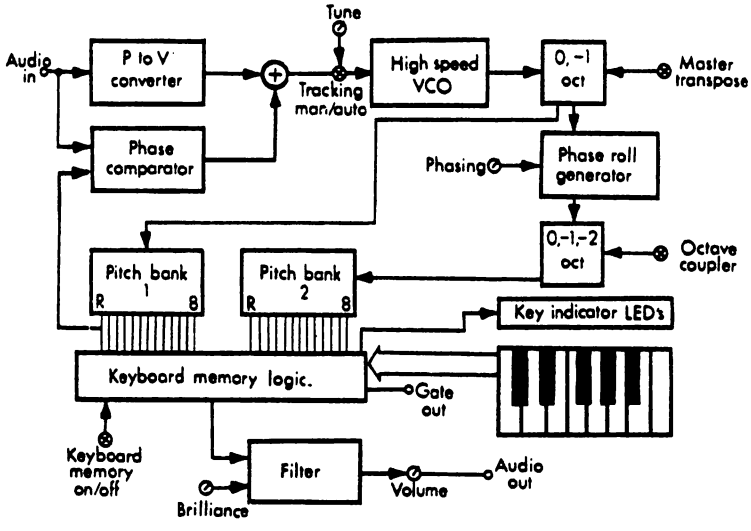
4. Switch Poly-Box to manual tuning mode or track a fixed synthesizer oscillator and play bass lines or harmony on the Poly-Box keyboard while playing melody on the synthesizer.

5. How else? There are many other ways to use Poly-Box. Poly-Box will track any pitch source from 44 Hz to 4162 Hz, regardless of waveform, provided there are only two zero crossings per cycle of the fundamental pitch, and the amplitude is at least 100 millivolts. Poly-Box will follow sample and hold or sequencer controlled oscillators. The Poly-Box output can be used to drive ring modulators, filter control mixers, or any other function where you would use an audio frequency signal. You'll find Poly-Box can be used for many special effects.

Anything else? Yes - two more features to help you make music. First, you can offset (or detune) the pitches of one pitch bank with respect to the other with the phasing control. This results in a variable phase roll that is independent of the pitches played, and does not introduce frequency response anomalies. With proper filtering by the synthesizer and little reverb, good strings will be produced. Second, an adjustable low pass filter varies the brilliance of the Poly-Box pitches and provides additional texture control.

Poly-Box is a most remarkable, useful and affordable addition to your instrumentation.

DIAGRAM AND CIRCUIT DESCRIPTION



Poly-Box uses a pitch to voltage converter, high speed VCO, and a pair of top-octave dividers, all in a phase locked loop. Under steady state conditions the bottom key of the Poly-Box will be exactly at the pitch of the control oscillator or precisely one octave below. The second bank of pitches may be equal to, or 1 or 2 octaves below the first, and may be further offset by the phasing control. The keyboard with memory capability routes corresponding pairs of pitches from the first and second bank to the Poly-Box output.

SPECIFICATIONS

Input: Any waveform with two zero crossings per fundamental cycles of at least 100 mv over the 44 Hz (F_1) to 4162 Hz (C_8) range. Input impedance 100 K ohms.

Output: Adjustable from 0 to 5 volts nominal. Output frequency range 5.5 Hz to 8324 Hz. Up to 26 pitches, at semitone intervals simultaneously available. Output waveform; bright 30% cycle pulses. Output impedance 470 ohms.

Gate Output: 0 to +15 volts for duration of key depression.

Phasing: Phase roll rate variable from 0 to 6 Hz.

Brilliance Filter: Low pass, 12 db/octave variable from approximately 1 K Hz to greater than 20 K Hz.

Keyboard: Pratt Read, C to C, 13 notes, with memory.

Power Supply: Self-contained, 10 watts, 110-125 vac, 50-60 Hz.

Construction: EML quality throughout. Glass epoxy circuit boards, Allen-Bradley rotary controls, gold and silver switch contacts, Pratt-Read keyboard, 1/8" aluminum panel, 16 gauge steel chassis, solid cherry end bells. Built to last.

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HOW TO GET POLY-BOX.

Poly-Box is available directly from the EML factory and from selected dealers. Factory orders by individuals should be accompanied by a deposit of $200 with the balance C.O.D. A cashier's check or certified check will facilitate delivery. Educational institutions are net 30 days. Poly-Box is $475.

10 DAY MONEY BACK GUARANTEE. We're confident you will think Poly-Box is for you. Buy it and try it. If within 10 days of delivery of factory direct orders you find Poly-Box isn't what you expected - return it in good condition - and we'll return your purchase price within 3 business days of our receipt. That's all there is to it.

Questions? Write, or call and ask. In Connecticut call 875-0751. Elsewhere in the continental United States call 1-800-243-7270 toll free.

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Warranty: Limited warranty covers 1 year parts and labor against defects in material or workmanship. You must pay shipping.

electronic music laboratories, inc.

P.O. Box H, Vernon, Connecticut 06066 Tel: (203) 875-0751

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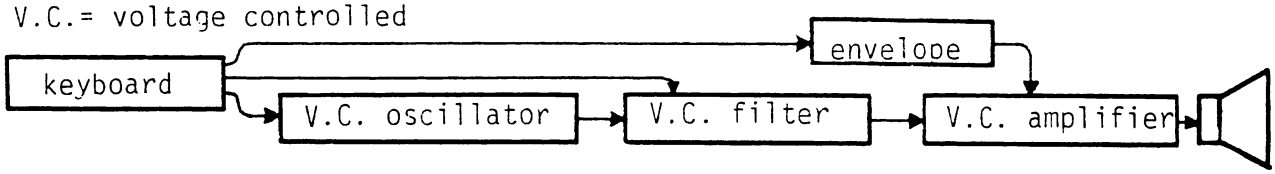
POLYBOX . . . . . A DYNAMITE POLYPHONIC SYNTHESIZER EXPANDER FROM EML

Polybox is probably the most exciting synthesizer development since voltage control - and what's equally exciting is that you can add Polybox's unique polyphonic capabilities to your own voltage controlled synthesizer.

POLYBOX IS A NEW CONCEPT - TAKE THE TIME TO UNDERSTAND
WHAT IT DOES - AND WHAT IT CAN DO FOR YOUR MUSIC.

Traditional voltage controlled synthesizers (EML 101, 500, Moog Micro, Mini, model 15, Arp Axxe, Odyssey, 2600, and others) are organized in the following way:

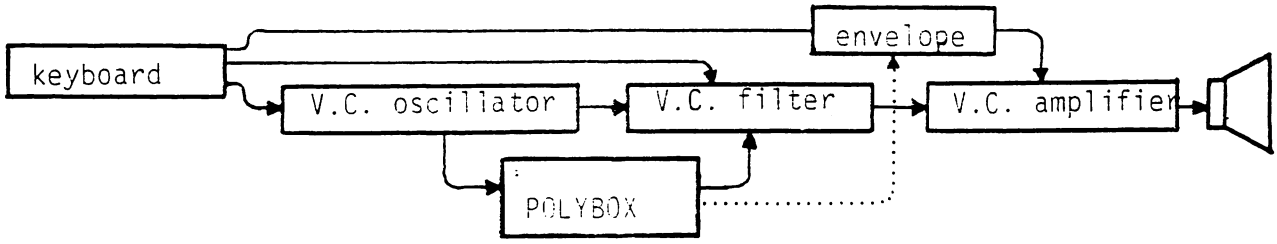
V.C.= voltage controlled



Generally, you can play one or two keys at a time - and to play chords from a single key you must carefully tune oscillators to an interval. It's all very time consuming on the stage, it wastes money in the studio - and, it limits your music. While organ based instruments, such as the string machines are polyphonic, they lack such dramatic synthesizer features as glide, and wide vibrato and timbre possibilities.

WITH POLYBOX YOU CAN HAVE YOUR CAKE AND EAT IT TOO!

Polybox is normally added to an existing synthesizer in the following way:



In simple terms, Polybox makes available a full octave of pitch sources at semitone intervals which precisely follow the synthesizer oscillator. Thus you can select a chord on Polybox and transpose it with your synthesizer keyboard - or simply "park" your synthesizer at some pitch and play the Polybox keyboard polyphonically. Because Polybox follows your synthesizer oscillator it will also follow pitch bends, glides, and vibrato.

WITH POLYBOX YOU'LL HAVE ALL OF THE CREATIVITY OF THE SYNTHESIZER PLUS A POLYPHONIC CAPABILITY - ALL AT MODEST COST!

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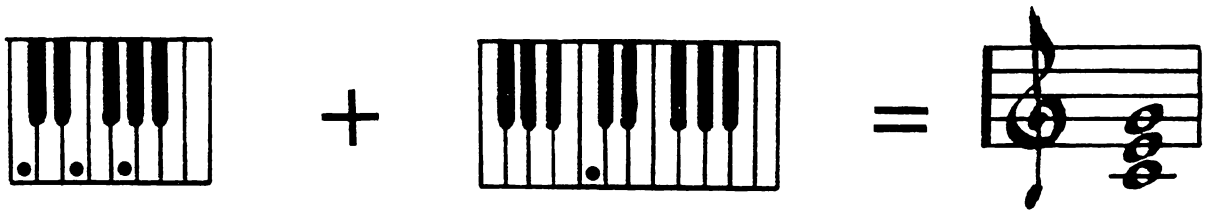
A MUSICAL EXAMPLE

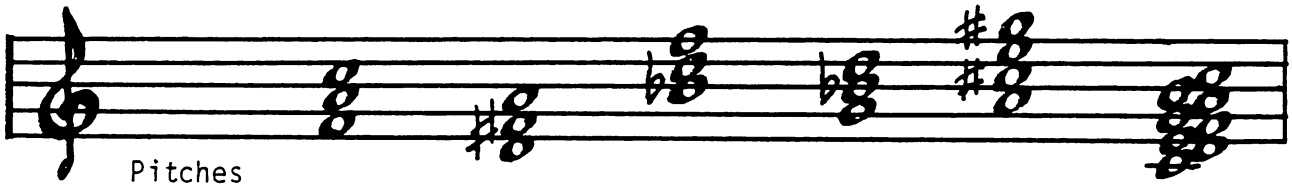
Polybox will build a chord on the pitch of a synthesizer oscillator.



Play this on Polybox This on the synthesizer Get this result

It follows that any chord selected on Polybox will be built on any synthesizer pitch.

Synthesizer note	F	D	B^b	G	A	C
Polybox chord	C Maj.	C Maj.	C Maj.	C Minor	C 7	All naturals



Pitches produced

Polybox has a lot more going for it too: An additional pitch bank (13 notes) that can be transposed down an octave or two, or detuned to give a rich phasing effect; keyboard memory, LEDS to indicate selected chords; a brilliance control; and of course, the same quality construction as other instruments in the EML family of synthesizers.

Polybox is added to any patchable synthesizer with just 3 patchcords. Non-patchables (Minis, Odysseys, etc.) just require access to an oscillator signal.

If you want more going for your music call or write EML today - we'll be glad to help.

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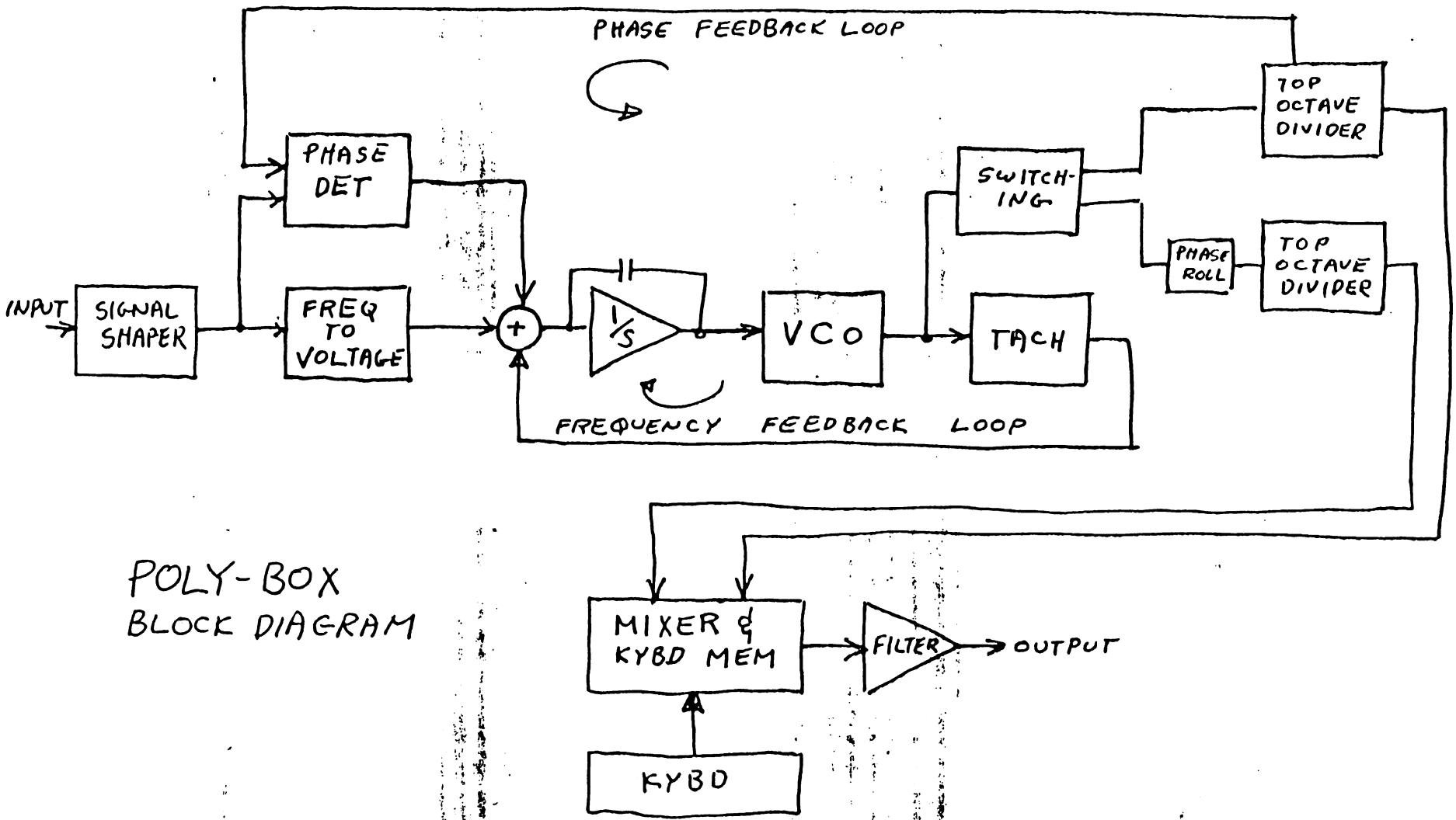

POLY-BOX
BLOCK DIAGRAM

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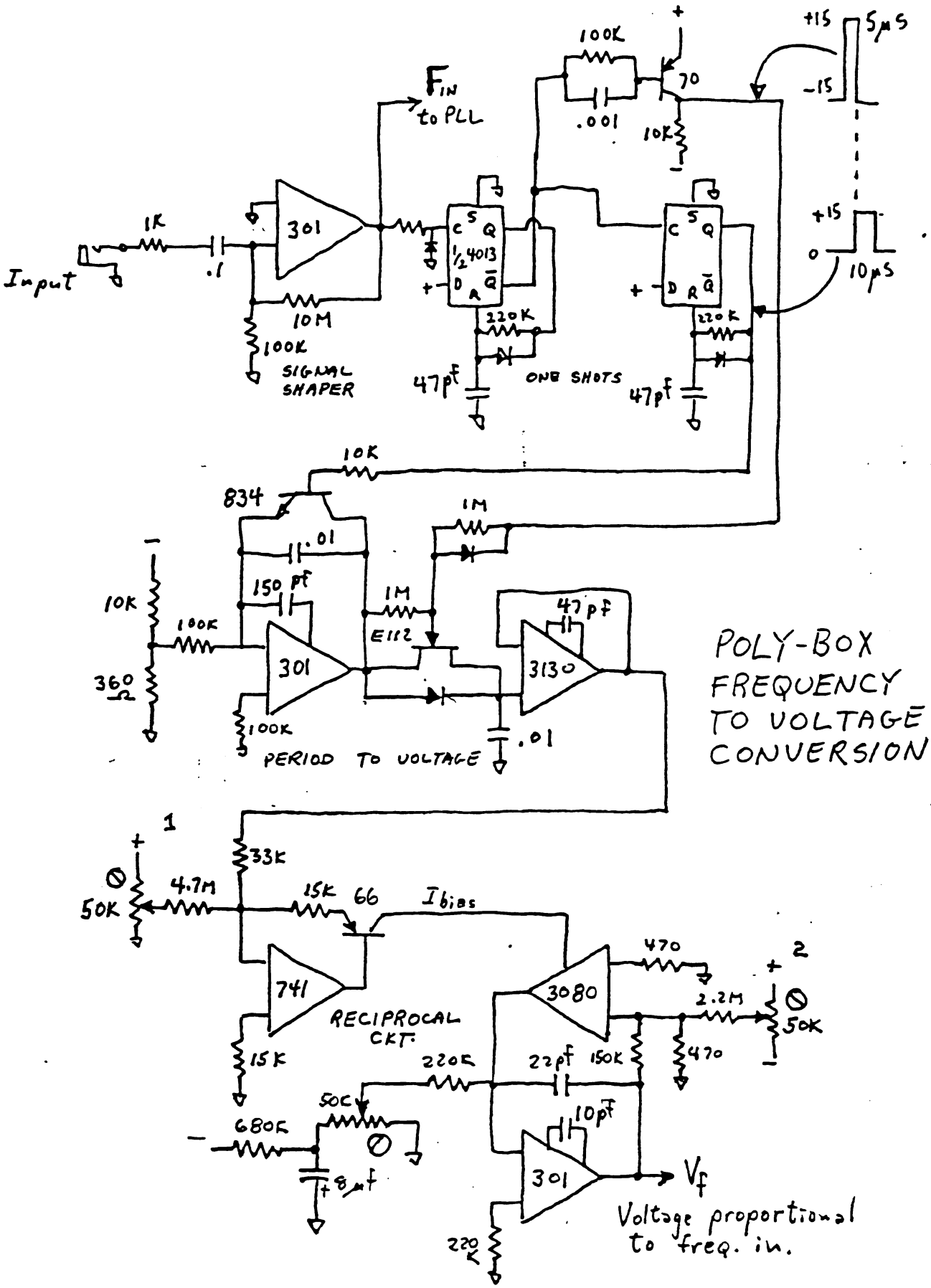

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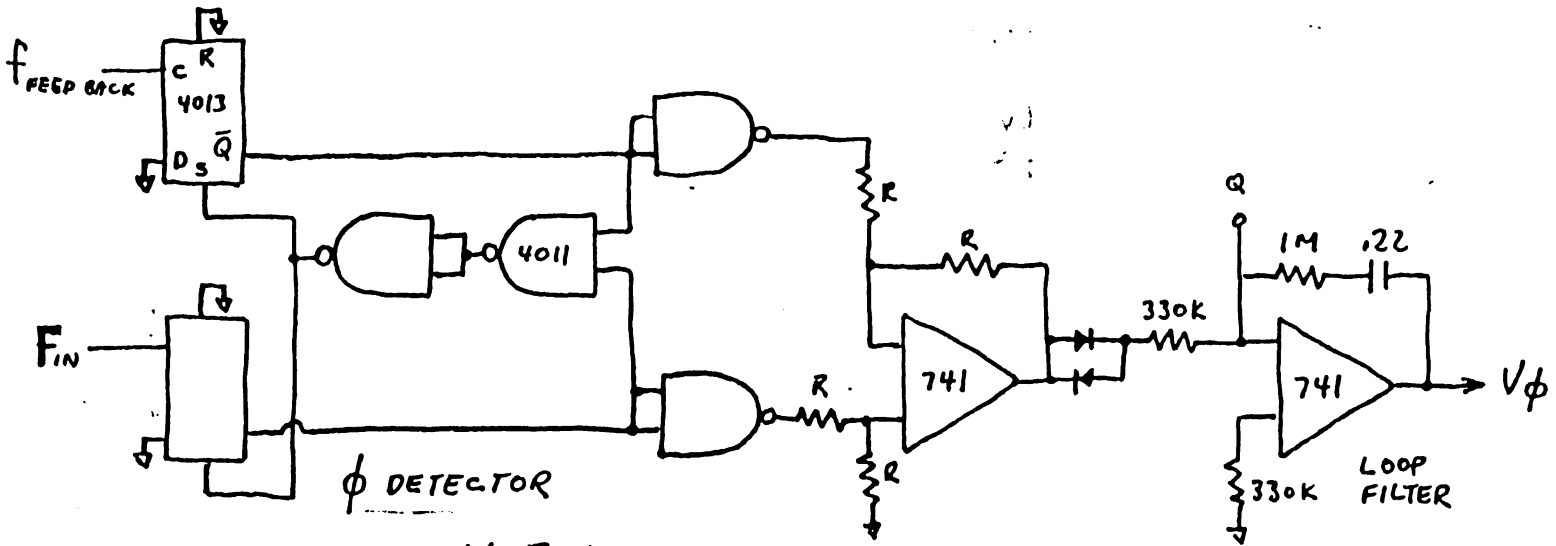
4013 NEEDS .01μF Disc
+V TO ↓ TO STOP
AUTO-TRACK "POPS"



POLY-BOX
PHASE LOCKED LOOP

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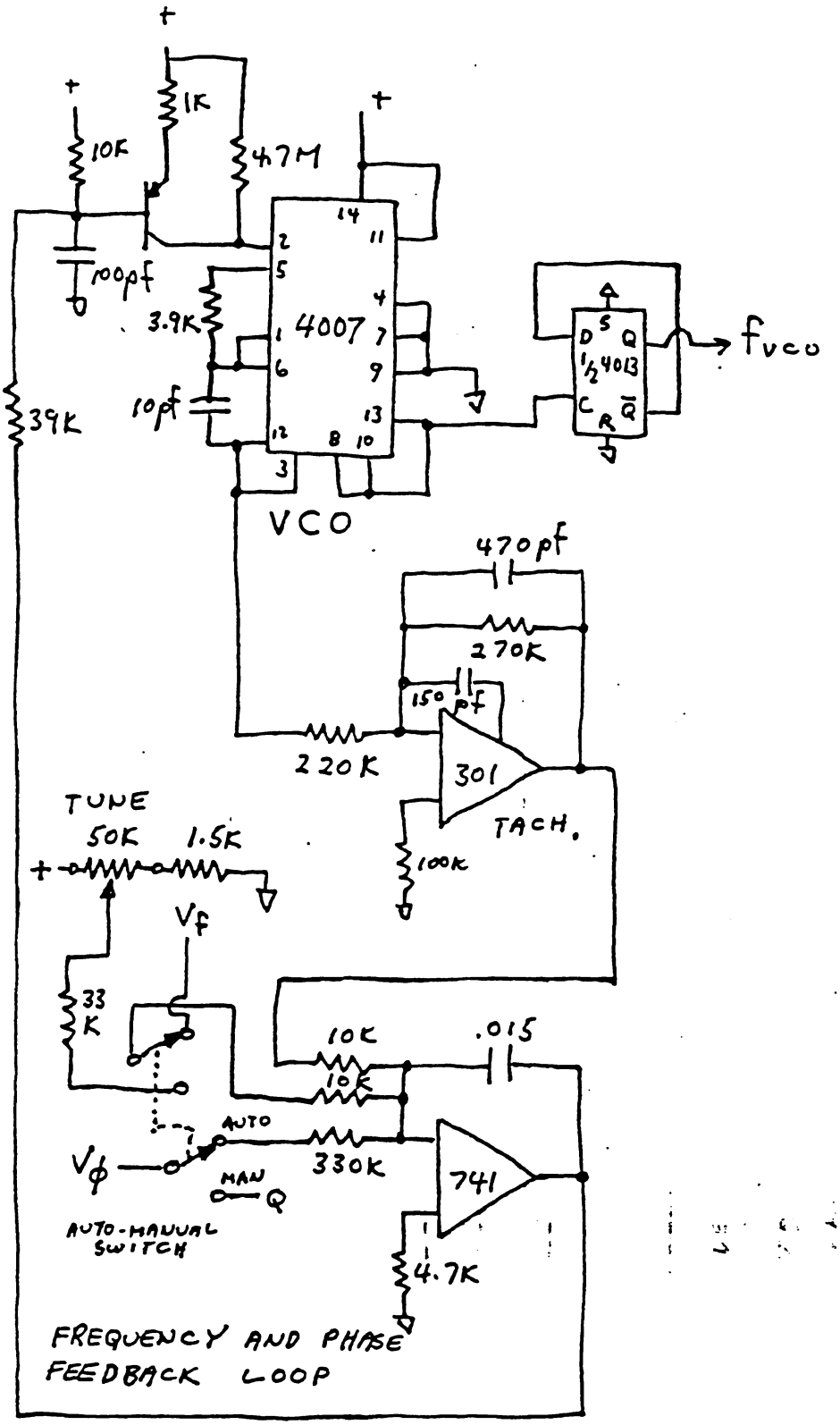

POLY-BOX VCO & SERVO LOOPS

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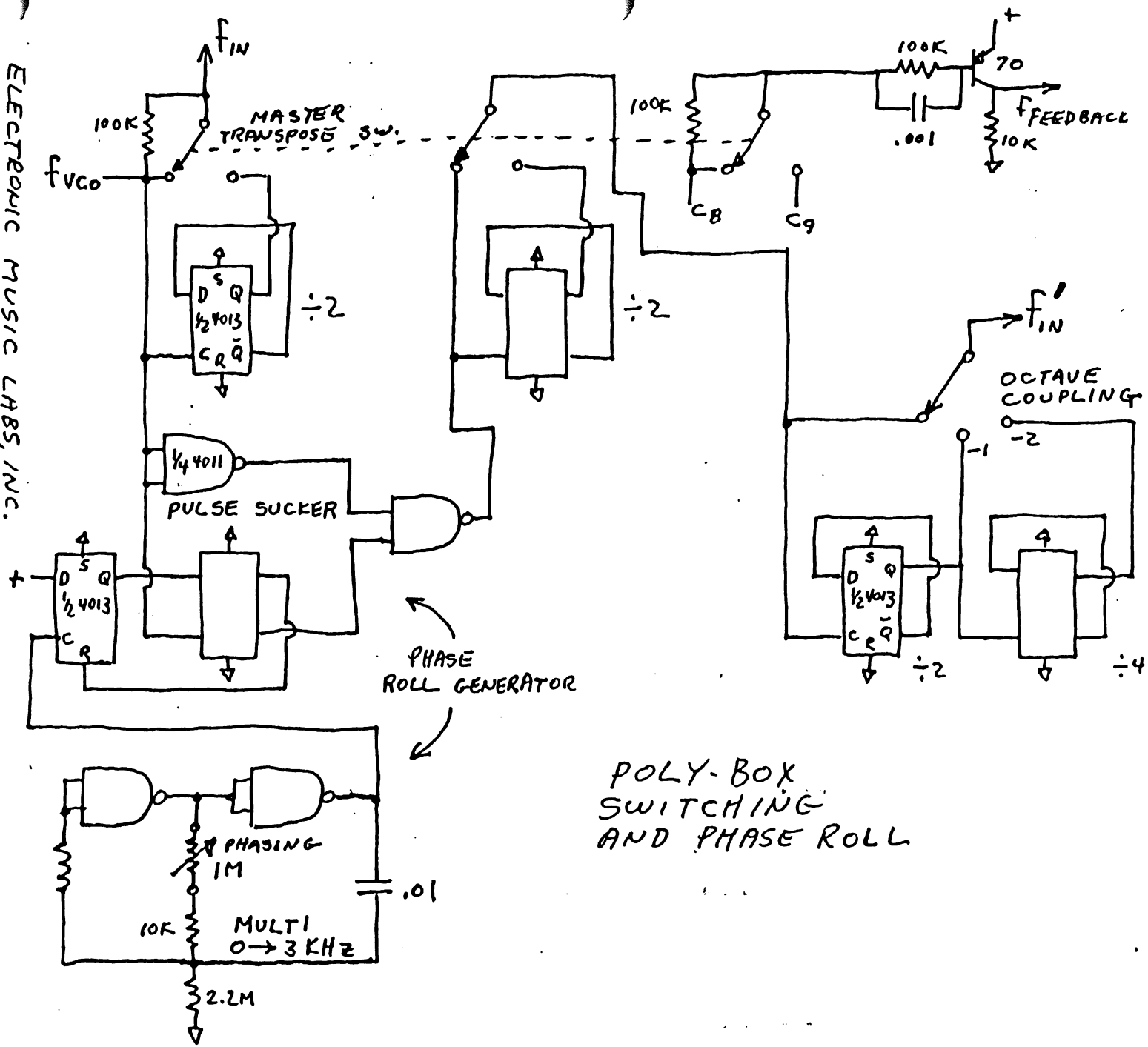

POLY-BOX SWITCHING AND PHASE ROLL

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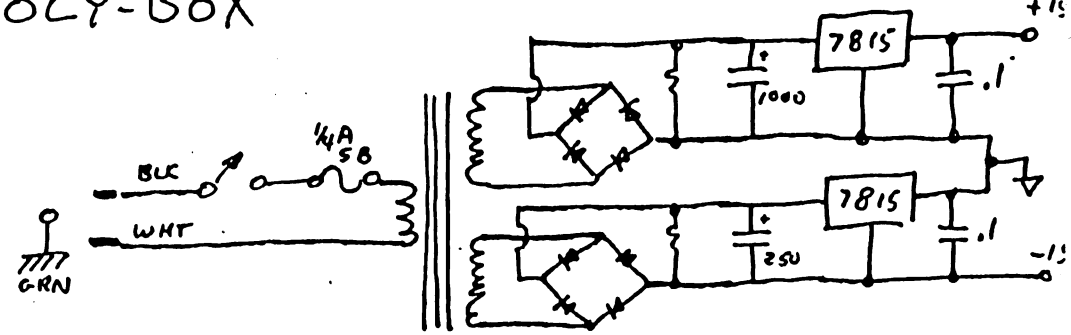
POLY-BOX



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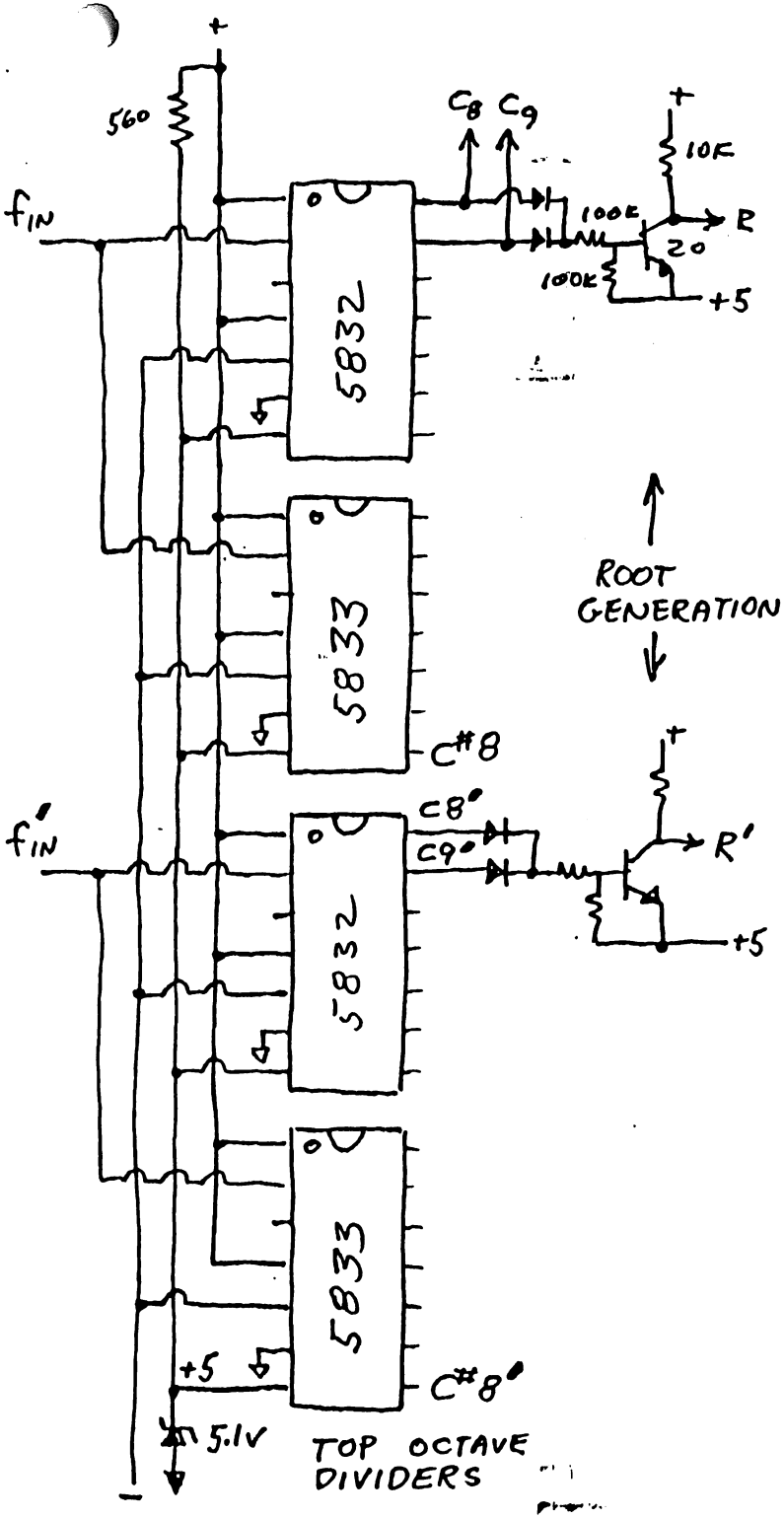

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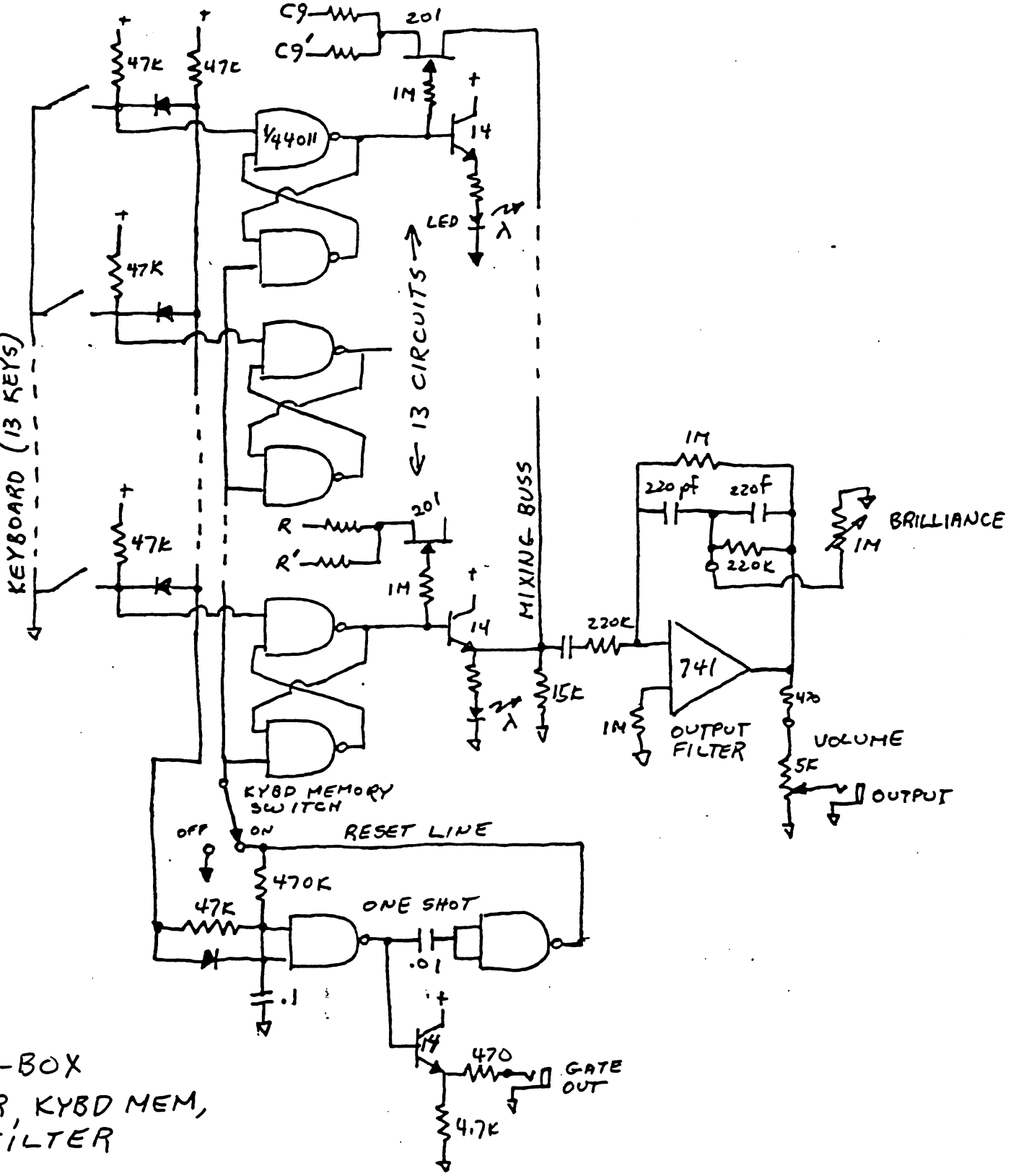

POLY-BOX
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AND FILTER

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