

# RAIA

ELECTRONICS, INC.

INTRODUCES  
THE  
**GNOBE**  
MICRO-SYNTHESIZER



© 1974 RAIA Electronics, Inc.

Linda Field  
Brewster '93



# PAIA 2720 SYNTHESIZER MODULES



At last, an affordable synthesizer that is as at home in the entertainment corner of your living room as it is in a recording studio or music lab.

Don't be fooled by the prices of the 2720 series modules. They're not toys but powerful audio processing elements similar in function and layout to the multi-thousand dollar instruments used by major recording studios. With the 2720 you can synthesize the sound of a galactic explosion as easily as you can produce an electronic flute.

When used as a processing unit for conventional instruments the 2720 is one of the most versatile special effects consoles available to the performer. Modules are available individually to build your own "black boxes" such as timbre gates, waa-waa's etc.

The 2720 can be used with any hi-fi or musical instrument amplifier or with a sound on sound tape recorder to create your own totally synthesized orchestral pieces.

## VOLTAGE CONTROLLED AMPLIFIER (VCA)

The VCA will most often be used in conjunction with the function generator to give synthesized sounds the desired attack and decay characteristics. The differential input and I.C. op-amp output stages of this module guarantee pop-free performance no matter how fast the control voltage changes. Nominal gain is 0 db. (unity) at full control voltage with minimum 60 db. isolation at 0 control voltage.

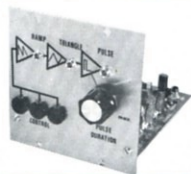
No. 2720-1 Voltage Controlled Amplifier \$12.95 postpaid



## VOLTAGE CONTROLLED OSCILLATOR

The VCO serves as the heart of any synthesizer by providing the other processing elements with a signal of the proper pitch and harmonic content. Features of the 2720-2 include ramp, triangle and variable duration pulse outputs with a frequency range of 40Hz. to 2.5 kHz. Individual, on board voltage regulators and op-amp control voltage summation assure reliable, drift free operation.

No. 2720-2 Voltage Controlled Oscillator \$24.95 postpaid



## FUNCTION GENERATOR

Accepts a trigger pulse from the controller and generates a 0 to 5v. output waveform with independently adjustable rise (attack) and fall (decay) times. Attack is variable from .002 to 1 second and decay is variable from .005 to 1 second, with sustain level maintained as long as input trigger is present. Both variable and fixed amplitude outputs are available. This module may be triggered from the control oscillator to produce an endless variety of repeating waveform shapes.

No. 2720-4 FUNCTION GENERATOR \$19.95





## VOLTAGE CONTROLLED FILTERS

VCF's are key processing elements in synthesized music because they allow you to precisely control the harmonic content of the sound you're working with. Voltage control allows you to place the filters under the automatic control of a function generator or to have the filter follow the controller voltage. Nominal band-pass center frequency range is from 350 to 1200 Hz. with front panel adjustable "Q" control. Low pass filter roll off rate is 12 db/octave adjustable by summation of the control voltages.

No. 2720-3B Band Pass Filter

\$11.95 postpaid

No. 2720-3L Low Pass Filter

\$ 9.95 postpaid

## CONTROL OSCILLATOR/NOISE SOURCE

Typical applications of the control oscillator are as a source of tremolo and vibrato or a means of cyclicly sweeping filters. Frequency range of the oscillator is 1 to 25 Hz. in three ranges and both fixed 5v. peak to peak and variable amplitude outputs are available.

The noise source provides unpitched sound used in wind/surf sounds, cymbals, snare drums, steam and many other special effects.

No. 2720-5 Control Oscillator/Noise Source \$19.95 postpaid

## POWER SUPPLY

Provides the three voltages required by modules at currents up to 100 ma., sufficient for up to 20 modules. Two variable bias sources of 0 to 5v. and -5 to +5 volts allow the setting of constant parameters for filters, oscillators, amplifiers. Isolated potentiometer can serve as master volume control or attenuator. Patch panel allows more than one module to be driven from the same control source or patching between audio and control lines.

No. 2720-7 Power Supply \$22.00 2 lbs.

## CONTROLLER/CASE

In the beginning, during the time that no-one knew whether anyone wanted a low-cost kit synthesizer, our biggest problem was how to get around the high cost of all the bits and pieces that go into a keyboard. Through a process of elimination we came up with the 2720-6, a completely user assembled controller. This item is still available for people who want to have big synthesizer performance at the lowest possible cost but it is not suitable for professional use. The button controller has all of the features of the 2720-8 keyboard except that tuning consists of moving wiper springs on the surface of an electricly conductive vinyl strip.

No. 2720-6 Controller/Case \*\$37.00 12 lbs.

## KEYBOARD/CASE

The keyboard provides 3 octaves of control voltage (C through C) in a standard 37 note AGO configuration. Pitch knob allows the range of the keyboard to be raised and lowered a full octave while maintaining the chromatic relationship of semi-tones. Sample/Hold circuit provides a minimum of 30 seconds control voltage holding time after keys are released. Pressing any key generates pulse trigger function and voltage step trigger is present while any key is held down. Case measures 31 X 12 X 11 and provides space for 15 single width modules. Shown in photograph at the top of facing page.

Keyboard action manufactured by Pratt, Read & Co. to PAIA specifications featuring self-wiping gold switch contacts for long, trouble free life. Semi-tone intervals tuned with individual p. c. mounted trimmer potentiometers accessible from the bottom of the case.

No. 2720-8 Keyboard/Case

\*\$108.00

15 lbs.

NOTE: The above price is for the case, keyboard and sample/hold electronics kit only. The modules shown in the case were installed for photographic purposes only.

## GLIDE RETRO-FIT

Directly replaces standard control panel on the 2720-8 Keyboard/Case to provide variable rate glissando from one note to the next. Requires  $\pm 9v$  supply.

No. 2720-9

Glide Retro-fit Kit

\$9.95

postpaid

Each of the above kits include all parts, wire, hardware, circuit board, front panel and fully detailed step-by-step instructions.



## ENVELOPE FOLLOWER/TRIGGER

The Envelope Follower/Trigger module allows any electrified musical instrument (including microphones) to serve as signal, control voltage and trigger source for the 2720 series modules. The low level output of the instrument is converted to a DC voltage by a precision full wave rectifier built around two operational amplifiers. A Schmitt trigger circuit provides step and pulse outputs whenever the output level of the instrument exceeds a pre-set level. Ample hysteresis in the trigger circuit prevents multiple triggering on complex natural percussion inputs (such as guitar). Front panel sensitivity control allows the module to be matched to any musical instrument as well as allowing selective trigger on loud passages only.

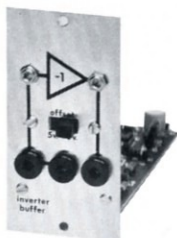
2720-11 Envelope Follower/Trigger Kit \$17.88 *postpaid*



## INVERTER/BUFFER

The 2720-12 can be used as an audio inverter, high input impedance/low output impedance buffer, inverting summer or level shifter. Also useful with filter modules to produce "super Q" band-pass filter as well as notch and high-pass responses. Module provides for summation of audio signal and two control voltages with both direct and AC coupled outputs. Front panel switch selects output offsets of either 0 or 5v.

2720-12 Inverter/Buffer Kit \$9.95 *postpaid*



## SINE CONVERTER/PULSE WIDTH MODULATOR

The Sine Converter/PWM accepts as an input the triangle output of the VCO and produces at its outputs a sine wave and voltage controlled variable duration pulse. Both of the new waveforms are the same frequency as the triangle input. Pulse duration is variable from less than 5% at 0 control voltage to greater than 50% when the sum of the control voltages equals 5 volts. Negative control voltages turn off the pulse completely. Amplitude of the sine and pulse outputs is .5v peak to peak.

No. 2720-14 Sine Converter/PWM \$16.95 *postpaid*

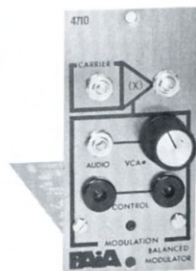


## BALANCED MODULATOR

Balanced modulators (also known as "ring" modulators) allow the synthesist to construct sounds with non-harmonic frequency components. Signals applied to the carrier and modulation inputs of the module are suppressed and in their place appears a new output signal containing only the sum and difference frequencies of the original inputs. Essential for realistically producing the sounds of large gongs, railroad type chime horns and many other natural and purely electronic effects. Can also be used as VCA or frequency doubler. Light Emitting Diode warns of signal overload when processing piano, guitar or other electrified instruments.

Requires +18,  $\pm$  9v. supply.

No. 4710 Balanced Modulator Kit \$21.88 *1 lb.*





## STEREO MIXER

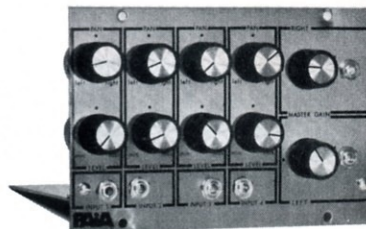
As the synthesist's talents progress beyond "waa-waa's" and bleep-bleeps" a good mixer becomes essential to realize the subtle, almost natural sounds that express today's music. Op-amp circuitry is significantly better than passive mixers. Individual level controls for each input; pan pots allow each signal source to be placed left, right or in between. Master gain controls for left and right outputs. 10K impedance is compatible with common sound sources, 100 ohm output impedance will drive most loads. 6 db. max. gain; 20 Hz - 20 kHz. frequency response.

Requires  $\pm 9v$  supply.

No. 4711 Stereo Mixer Kit

\$29.88

3 lbs.



## ENVELOPE GENERATOR

ADSR - Attack/Decay/Sustain/Release. Voltage step or manual push-button causes output voltage to rise at a rate set by attack control, then fall at decay control rate to constant level set by sustain control. Releasing push-button or terminating trigger causes output to fall to 0v. at a rate set by release control. Level control varies output. Light Emitting Diodes indicate module status. Times variable from 2 ms. to 2 seconds, 5v. peak output level.

Requires +18v. supply.

No. 4740 Envelope Generator Kit

\$24.95

2 lbs.



## WATT BLOCK

300 ma. power supplies may be wired to provide either +18v. or  $\pm 9v$  Power requirements vary from module to module but on the average 300 ma. is sufficient for 30 of the 2720 series or 20 of the 4700 series modules. Light Emitting Diode power indicator. Multiple jack panel consisting of 3 pin jacks and 3 phone jacks aid in complex patches.

No. 4770 Watt Block Kit

\$12.95

3 lbs.

Since Watt-Block will often be used in groups of 2, line cords for above are sold separately.

No. LC-6 6 foot line cord

\$.75

postpaid



## SEQUENCER

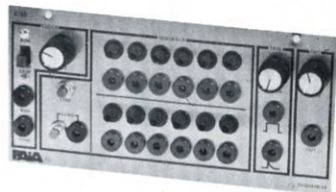
Use for automatic bass lines, super speed arpeggios, any repeating or non-repeating sequence up to 12 events long. "Synch" and "run" inputs to internal clock allow for remote control and series or parallel chaining of multiple sequencers. Built in glide. Clock rate pulse or variable duration step triggers as well as trigger output jacks at each stage. Light Emitting Diodes (not shown in this photo) indicate position in sequence, clock rate and step trigger duration. Includes manual operation pushbuttons.

Requires +18,  $\pm 9v$  supply.

No. 4780 Sequencer Kit

\$52.50

3 lbs.



## WING CABINET

Space for single width modules in beautifully finished mahogany case. Designed so that two cabinets fit side-by-side on top of 2720 series cases; or stack as "wings" to the main synthesizer case. Includes all hardware, rubber feet and power distribution buss parts. Wood parts fully assembled. Removable bottom plate.

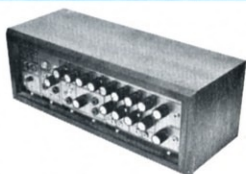
Modules shown for illustration only.

No. 4760

Wing Cabinet

\$15.00

3 lbs.





## PACKAGES

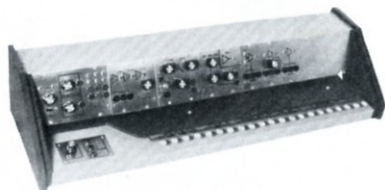
We can offer reduced prices on package systems because of the reduced cost involved in multiple packing, savings in inventory control and simplified shipping procedures. Sorry, we cannot offer package prices on other than listed packages.

### 2720 PACKAGE

The 2720 package is intended for the beginner who wants to get started in electronic music synthesis with the least possible investment. The package contains one each of the following modules: VCA, Function (envelope), Generator, VCF-band pass, Low-pass filter, Control Oscillator/Noise Source, VCO, Power Supply and the 2620-6 Controller/Case. Also included are all instruction booklets, User's manual and materials for 6 audio patch cords and 12 control voltage patch cords.

This package is ideal for use by radio stations for in-house production of station ID's as well as for special effects applications for the small recording studio. Within the limitations of the controller the package is suitable for use by high school and university music labs.

2720 package      \$139.00      \* 18 lbs.



### 2720/A PACKAGE

If your anticipated usage is professional or semi-professional we recommend the 2720/A. This package includes the same module complement as the time tested 2720 with the substitution of the 2720-8 Keyboard/Case for the controller/Case of the original package. Also includes instruction manuals, User's manual and patch cord set. This is a superior bargain in electronic musical apparatus.

2720/A package      \$218.88      \* 24 lbs.



### 2720/R PACKAGE

If you're really into electronic music we also offer the 2720/R package (not illustrated) which is identical to the 2720/A with the inclusion of the following modules: Envelope Follower/Trigger, Inverter/Buffer and Sine Converter/PWM.

2720/R package      \$255.00      \* 26 lbs.

### 4700/I and 4700/II MIXER PAC

Whether your interest is electronic music synthesis, stage work, production of film presentations or any of the other areas where precision audio eases the task or enhances the product you always seem to run out of mixers before the job is done. PAIA mixer pacs are an economical solution to this problem. 4700/I contains: one 4760 Wing Cabinet, one 4770 watt block, one 4711 mixer, and one triple width blank panel. 4700/II substitutes a second 4711 mixer module for the blank panel and provides an 8 in/4 out capability for well under \$80.00.

4700/I mixer package      \$50.00      9 lbs.

4700/II 8 in/4 out mixer      \$76.00      12 lbs.

### 4700/A SEQUENCER PACKAGE

This package forms a completely self-contained sequencer which is compatible either with PAIA equipment or units from other manufacturers. Package contains: one 4780 Sequencer, two 4770 Power Supplies, one 4760 Wing Cabinet, and one single width blank panel.

4700/A Sequencer Package      \$80.00      10 lbs.



## 4700/B EXPANDER PAC

In most cases PAIA equipment is compatible with equipment supplies by ARP, MOOG, Etc. and presents a low cost alternative means of expanding the systems from these manufacturers. Current trends in electronic music are towards subtler, more natural sounds that in many cases aren't possible without multiple processing modules. Package contains: one 4760 Wing cabinet, one 4740 ADSR Envelope Generator, one 4710 Balanced Modulator, one 2720-11 Envelope Follower, and 2720-12 Inverter/Buffer and two 4770 Watt Blocks. (Note: while 2720 and 4700 series are electronically and mechanically compatible, there is a marked appearance difference caused by the heavier, matte finish of the 4700 series panels.)



4700/B Expander Pac Kit

\$97.00

14 lbs.

## INSTRUCTION MANUALS

Instruction manuals for each of the modules listed in this catalog are available for your inspection. Price of each module's instruction booklet is \$1.00 refundable with the purchase of the kit.

Instruction sets for all Synthesizer packages are priced at \$5.00 per set refundable with the purchase of these packages.

Please Note: These instruction sets are offered to illustrate the format and quality of the instruction only and no guarantees are expressed or implied concerning the operation or performance of equipment assembled using other than PAIA parts. We reserve the right to modify designs and specifications at any time such changes become economically or technically desirable.

A lot of our mail deals with questions about difficulty of assembly. We will go on record now by saying that anybody that knows which end of a soldering iron to hold can assemble one of these kits.

### "USING THE PAIA 2720 SYNTHESIZER"

With complete synthesizer packages we supply the 28 page booklet "Using the PAIA 2720 Synthesizer", however, this booklet is also available separately. Price \$1.00 ppd. non-refundable.

## DEMONSTRATION RECORD

We have available a 6½ minute demo record of the PAIA 2720 and 4700 series equipment being used in a variety of applications covering free-form "sound effects" compositions, live performance pieces and an excellent example of what can be accomplished using only an inexpensive stereo recorder. Includes manual with original scores and patch charts for all recorded numbers. 33-1/3 Stereo "sound-sheet".

No. 4700/D

Stereo Demonstration Record

\$1.00

postpaid





# INFINITY PLUS

LOW DISTORTION SUSTAIN



Percussion instruments (such as guitar) have a characteristic decay time after they have been plucked or struck during which the sound dies away. A sustain unit is a form of automatic volume control that senses this decay and compensates for it by increasing the gain of an internal amplifier in such a way that the output remains constant.

"Infinity Plus" may seem like an ambitious name to call a sustain but once you hear this one you'll have to agree—it fits. Sustain duration control lets you pull out notes or chords as long as you like without changing over-all volume. Maximum sustain allows controlled feed back guitar techniques that hold a note until you decide to let it go. Rear panel jack for optional foot switch allows the sustain to be switched in or out at the touch of a toe.

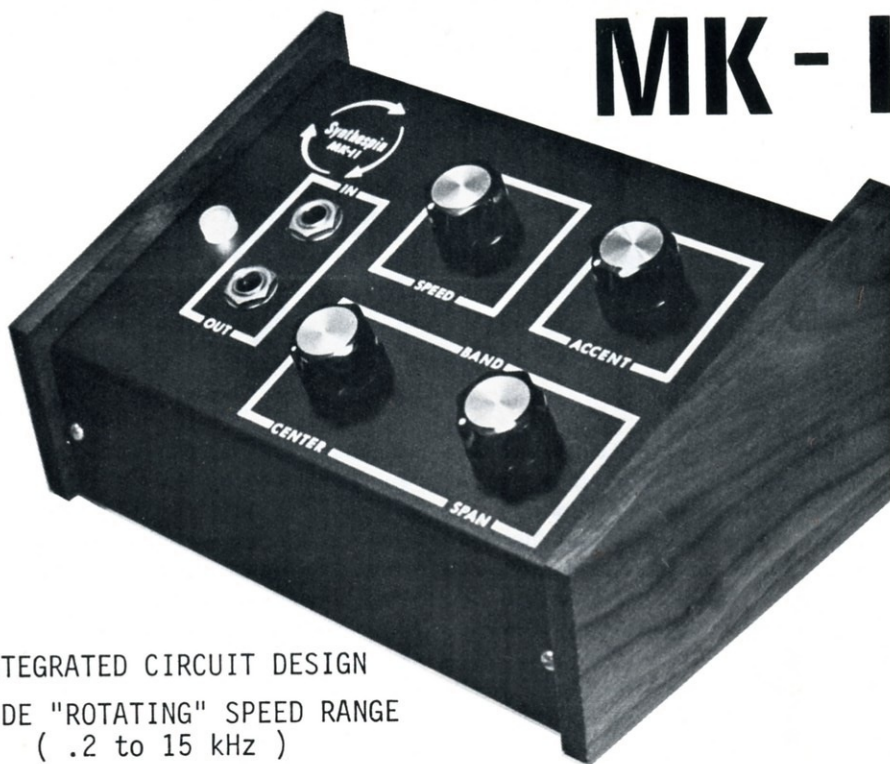
The Infinity Plus is a low distortion sustain that adds little coloration and no fuzz to the original sound. The use of two low noise Integrated Circuit operational amplifiers plus fully imprinted circuit board and "modular" design add up to a trouble free unit that is easy to build and a gas to use.

Complete kit includes circuit board, pre-finished case, instructions, wire, all parts.

Kit Name	Stock No.	Price	Shipping Wt.
<i>Infinity Plus</i>	<i>No. 9711</i>	<i>\$22.95</i>	<i>4 lbs.</i>



# SYNTHESPIN MK-II



- \* INTEGRATED CIRCUIT DESIGN
- \* WIDE "ROTATING" SPEED RANGE  
( .2 to 15 kHz )
- \* VOLTAGE CONTROL OPERATION

For years electronic organs have used mechanical rotating speakers to produce a tremolo effect. Recently these speakers have gained added popularity with musicians because the sound they produce is totally unlike electronic forms of tremolo. However, mechanical speakers are too bulky and heavy to be conveniently carried from one date to the next and their cost puts them beyond the means of many amateur and semi-professional musicians. The synthespin was designed as a low cost, portable electronic simulator of the rotating speaker effect.

The Synthespin MK-II is an updated and improved version of a similar unit sold by PAIA for several years. In addition to the rotating speaker effect the MK-II also produces numerous effects ranging from very slow phasing type sounds to a bubbling pseudo-reverb. Electrical inputs on the rear of the case provide for optional foot pedal control of the rotating effect as well as allowing for instantaneous foot switch cancellation and bypass functions.

Complete kit includes: circuit board, all parts, wire & hardware, pre-finished case and step-by-step instructions.

No. 1702K

*Synthespin MK-II Kit*

\$24.95

3 lbs.



# PING ★ PONG



An out-a-sight stage effect for live performances. The Ping-Pong accepts an input from any electronic musical instrument and alternately routes it to two separate amplifiers. Independent left and right depth controls allow for a gentle undulation of the sound back and forth or a fantastic stroboscopic jump from one end of the stage to the other. Front panel switch allows the sound to be routed to one or both of the amps when the unit is switched out. Effect can be initiated or terminated either with front panel switch or optional foot switch plugged into the rear panel jack. Powered by a single 9v. transistor battery. Complete kit includes case with oiled walnut end panels, circuit board, all parts and hardware, instructions, wire, etc. Less battery.

*Ping Pong Kit*

No. 3712

\$22.50

3 lbs.

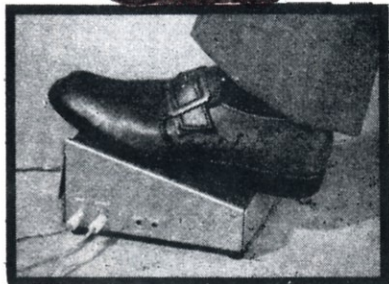
## PAIA's FÖÖT Switch

You're probably expecting tricky comments like "Sock it to 'em with a PAIA foot switch" or "Put your foot down — insist on PAIA" but we wouldn't come up with corny stuff like that. We just say try it — you'll get a boot out of it. The Foot Switch is a fully assembled solidly cast block and comes with 9 feet of cord terminated in a phone plug that matches the control jack of our special effects equipment. The switch is a push on — push off type; pushing once starts the effect, pushing again stops it. Carries an eternal unconditional repair/replacement guarantee.



<i>Stock No.</i>	<i>Price</i>	<i>Shipping wt.</i>
No. 4720	\$6.95 with the purchase of any PAIA Kit that uses a foot switch \$9.95 if purchased seperately.	3lbs.





## THE WAA-WAA

Electronicly, our 7690 Waa-Waa is one of the best available. But it was one of our original kits and the sheet metal case is (how shall we say it?) LOUSY. Instructions are re-prints from the article that appeared in Popular Electronics in December of 1969. We have not raised the price since that time and are in the process of discontinuing this kit. Lousy case and all, it's still a very good buy and will be offered for the last time in this catalog.

No. 7690K WAA-WAA Kit \$18.75 5 lbs.

## THUMPA-THUMPA BOX

A truly inexpensive electronic rhythm section. The TTB simulates the sound of a bass drum and wood block with amazing realism and generates a practically unlimited variety of rhythms. Battery powered and designed to plug into your amplifier or organ. The pre-punched, heavy gauge aluminum case and fully imprinted circuit board make this one a snap to assemble. Why buy a metronome when for a few dollars less you can have a full rhythm section?



No. 118

Thumpa Thumpa Box Kit

\$18.95

2 lbs.

\* Magazine article re-print instructions

\* Case Unfinished



# Drummer Boy



Now with PAIA "instant finish"  
panel covering

- ★ Durable pre-colored vinyl
- ★ Controls pre-labeled
- ★ Backed with Control Tac® adhesive
- ★ Applies in seconds

## DRUMMER BOY

Eleven Rhythms: Waltz, Vienna Waltz, Jazz Waltz, Polka, Fox Trot, Samba, Boss Nova, Funk, Cha-Cha, Rhumba, Tango. Rhythms are switch selected and can be combined two or more at a time for an almost unlimited range of effects. Drum sounds include Bass, Snare, Conga, Clave, and wood block. Rocker switches allow individual drum sounds to be interchanged within the framework of a rhythm pattern. Down-Beat emphasis is switch selectable. Plugs into any guitar, organ or hi-fi amplifier. Case is pre-punched sturdy gauge aluminum with oiled hardwood end panels. \* Magazine article re-print instructions

No. 7701K

Drummer Boy Kit

\$59.00

6 lbs.



# guitar Attack Delay Unit



## VARY "ATTACK" TIME AN EFFECT NEVER BEFORE POSSIBLE FOR LIVE PERFORMANCES

The Attack Delay Unit provides an effect never before possible for live performances. Instead of the instantaneous percussive attack characteristic of guitars, the ADU produces a variable duration swell that makes the instrument sound like it has been pre-recorded and the tape is being played in reverse. Rear jack provided for foot control switch. Complete kit includes all parts, pc board case, hardware and instructions. Case Unfinished.

*Attack Delay Unit kit*

*No. 1069*

*\$19.25*

*3 lbs.*

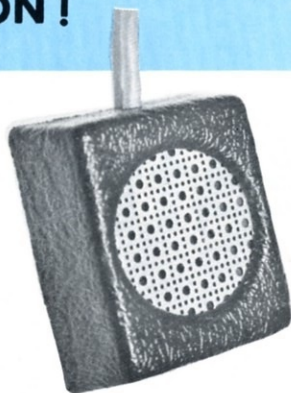
*\* Magazine article re-print instructions*



# YES THE SALE IS STILL ON!

In a sale you ordinarily try to get rid of your slow moving items. But the Omni-Alarm can't be described as a slow mover - more like a disaster. And we can't figure out why!

We think it's one of the best investments for your automobile next to insurance. Six simple splices tie the Omni-Alarm to your car's ignition, headlights, and idiot lights (those dim little gadgets that Detroit so thoughtfully provides to let you know that catastrophic failure is imminent) and if anything goes wrong it lets out a Star Trek type beep-beep. It even reminds you to turn off your headlights - that alone is worth the price. All of these marvels of modern engineering come to you attractively packaged in a vacuum formed ABS housing (like your telephone - indestructible). The kit is complete with all parts, circuit board, case, cable and instructions.



OMNI ALARM COMPLETE KIT

No. 115

NOW ONLY

\$7.95

postpaid

~~\$12.95~~  
~~\$9.95~~

## NEED A HOME FOR YOUR LATEST PROJECT ?



TRY OUR

### COMMERCIAL GRADE CASE

Every experimenter has had the experience of investing long hours in a pet project only to have to house the end result in an ugly square steel box. But not anymore, now you can turn out custom projects with the designer look of a commercial product. Inside measurements of the case are 3" high sloping to 1 5/8" by 6" wide by 4 1/4" deep. End pieces are solid Hardwood and metal parts are easily worked aluminum. Supplied assembled with rubber feet and metal primed to accept the color of your choice.

COMMERCIAL GRADE CASE

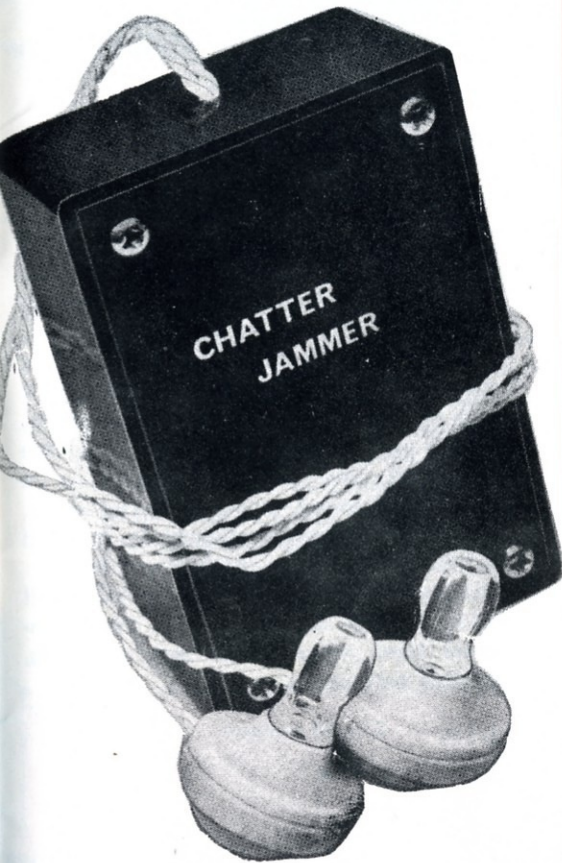
\$4.50 each plus postage for 1 lb. \_\_\_\_\_



# Build the CHATTER JAMMER

CUT OUT NOISE POLLUTION

AND KEEP YOUR COOL



Technically speaking, Pink noise is an equal probability distribution of all frequencies within a given bandwidth.

If you still have trouble visualizing what it sounds like there are many natural phenomena that come close to being pink noise. The sound of falling rain and the roar of the ocean are two good examples.

Strangely enough, most people find these sounds relaxing.

We make only one claim for the Chatter Jammer; if you must work in a noisy environment the Chatter Jammer will help you to concentrate by blocking out distracting outside sounds and substituting the gentle "rushing" sound of pink noise. Thousands of these units have been bought by students and businessmen. Hundreds have been sold to doctors of various disciplines (MD, DDS, PHD, etc.).

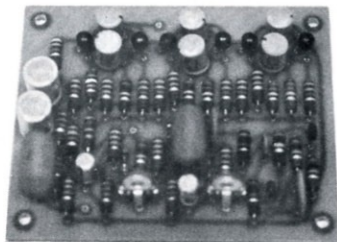
The Chatter Jammer is shirt pocket size, completely self contained and can be assembled in less than an hour. Kit includes circuit board, case, earphones, selected noise diode and instructions. Requires two 9 volt transistor batteries (not supplied).

CHATTER JAMMER kit No. 111 \$6.95 postpaid

# surf

WILL BACKGROUND SOUND REPLACE BACKGROUND MUSIC?

## synthesizer



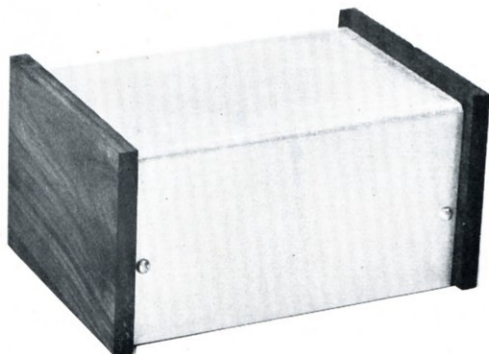
The roar of the ocean is one of the most relaxing sounds imaginable. Now you can have the sound of the surf electronically synthesized and played through your hi-fi. Complete in this low cost package is a special purpose synthesizer consisting of a pink noise source, random voltage generator, voltage controlled attenuator, and voltage controlled low pass filter. Use as a background sound generator, mood setter. An unbeatable conversation piece. Powered by two 2U5 type batteries (not supplied). Complete kit includes: circuit board, all parts, battery connectors and clips, miniature type phone output jack and plug, detailed instructions.

- ★ *LOW COST*
- ★ *BATTERY POWERED*
- ★ *USE WITH ANY HI-FI*

3711K    \$12.95 *postpaid*

Houses the Surf Synthesizer, The Wind or the Wind Chimes interchangeably. Heavy aluminum body with oiled walnut end pieces blends with contemporary audio and hi-fi equipment. Aluminum top and bottom are completely pre-punched with provision for power switch and output jack on the rear apron of the case. The case is supplied unpainted.

3711C -- CASE



<i>Stock No.</i>	<i>Price</i>	<i>Shipping wt.</i>
3711-C	\$3.50 when ordered with 3711K, 3730K or 3721K	1lb.
	\$4.50 if ordered seperately.	



# The Wind



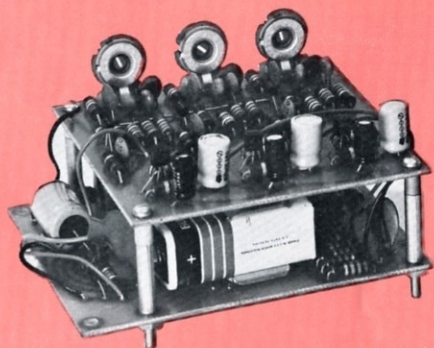
Don't be surprised if you feel like running for your coat when you hear the wind, it's so realistic that people who have heard it report they actually feel cooler. Trimmer adjustments provide a range of effects from moderate breeze to full gale. Great for background sound, special effect accessory for organs or other musical instruments, or just as a party starter. May be used with any hi-fi or musical instrument amplifier, powered by two standard transistor batteries (batteries not included). May be housed in the 3711C case shown on facing page.

Complete kit includes: circuit board, all parts, hardware and wire; battery connectors and clips, miniature type phone output jack and matching plug, detailed instructions.

No. 3730 \$12.95 postpaid



## Wind Chimes 常



You'll feel like you've been transported to the Mikado's palace for the afternoon tea ceremony as you settle back and relax to the gentle random tinkling of these electronic wind chimes. Internal trimmer adjustments allow you to select either the ring of brass chimes or the percussive resonance of bamboo rods. The wind chimes are completely self contained, battery powered (battery not supplied) and may be used with any hi-fi or musical instrument amplifier. May

be housed in the 3711C case shown on facing page.

Complete Kit includes circuit boards with parts placement designators, all parts, hardware and wire, power switch, co-ax output lead with RCA type plug, detailed instructions.

WIND CHIMES No. 3721 \$17.95 postpaid

お

# The SOLID-STATE BIRD

If you like the sweet, warbling song of a canary but don't dig that cage to be cleaned, try this electronic bird — a real solid-state singer. When turned on the bird whistles down-scale for a few seconds, breaks into a warble and shuts itself off only to start again—a few seconds later.

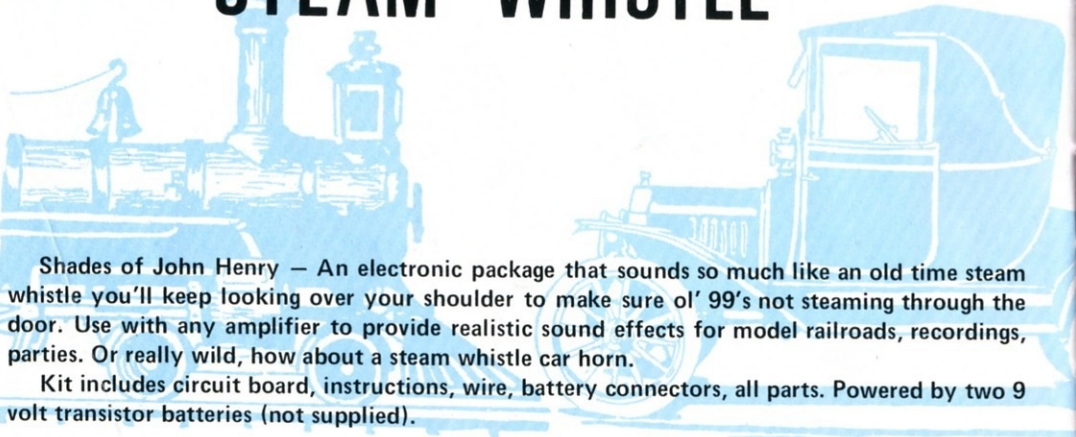
Kit includes circuit board, instructions, parts, wire, switch and speaker, Powered by four AA penceils (not included)



*Bird Kit No. 110 \$7.95 postpaid*

---

## All Electronic STEAM WHISTLE



Shades of John Henry — An electronic package that sounds so much like an old time steam whistle you'll keep looking over your shoulder to make sure ol' 99's not steaming through the door. Use with any amplifier to provide realistic sound effects for model railroads, recordings, parties. Or really wild, how about a steam whistle car horn.

Kit includes circuit board, instructions, wire, battery connectors, all parts. Powered by two 9 volt transistor batteries (not supplied).

*STEAM WHISTLE Kit No. 6710K \$8.95 postpaid*



# GNOHE

MICRO - SYNTHESIZER



If you think that you could really get into synthesizers but are having trouble justifying the heavy cash outlay on pure speculation, the PAIA Gnome is designed just for you. It's a micro-synthesizer at a mini-price; but really big on performance and ease of operation.

"Normalized" controls completely eliminate patch cords and jumpers so that even if you've never been near a synthesizer before you'll still be able to produce those far-out electronic sounds the first time you turn it on. With a little practice you'll be doing far more subtle, natural sounds like the whisper of the wind, flutes and many more. The ribbon controller is so easy to use that even non-musicians can pick out tunes in the first few minutes.

On the beach, at a party or carried out into the middle of your audience; the PAIA Gnome is an instrument that you have to hear to believe. Requires two 9v. transistor batteries (not included).

No. 3740 GNOME micro-synthesizer kit.

\$44.88

4 lbs.

Note: The Gnome is not designed to be compatible with external synthesis equipment but it can be controlled by the PAIA 4780 Sequencer.

PAIA ELECTRONICS INC.  
P.O. BOX 14359  
OKLAHOMA CITY, OK 73114

Requested through Radio-Electronics

FIRST CLASS MAIL

