

FET STEREO PREAMP



IMPROVED

SPECIFICATIONS

SENSITIVITY ----- for 1 Volt RMS output 2.0 Mv.-Phono and Mic. 100 Mv.-High Level Inputs.

FREQUENCY RESPONSE ----- Flat with +1 Db 20-20,000 Hz.

DISTORTION ----- at 1 Volt RMS output .05% or less any input

NOISE ----- All channels 65 Db below 1 Volt RMS output

MAXIMUM INPUT-----100 Mv.-Phono and Mic. 10 Volts-High Level Inputs.

POWER REQUIRED ----- 40 Volts DC (or more) 12 Ma.

The FET Preamp is designed to be used with any of our power amplifiers. The circuit is powered from the main amplifier supply, or any other supply of 40 Volts DC. This preamp matches our power amplifiers in quality and performance.

Controls include Bass, Treble, Loudness, high and low frequency filters, and balance. Front

- * SILICON FET TRANSISTORS
- * LOW NOISE - HIGH SENSITIVITY
- * COMPATIBLE WITH ANY AMPLIFIER
- * PUSHBUTTON INPUT SELECTOR
- * HIGH AND LOW FILTERS
- * SWITCHED LOUDNESS COMPENSATION

panel microphone input and recorder output jacks, and a pushbutton input selector are additional features.

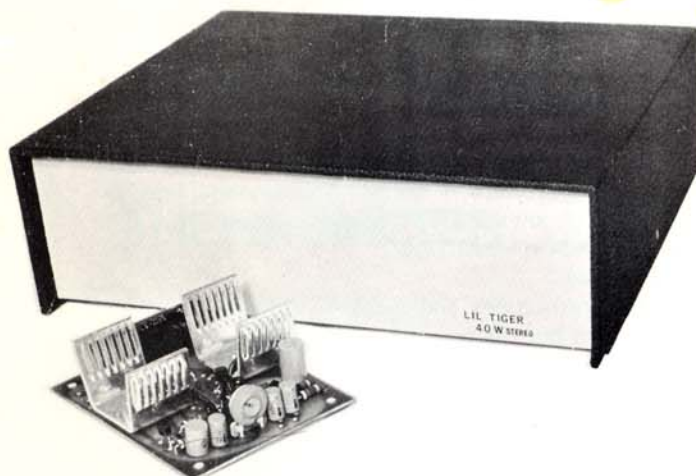
Chassis front and rear trim panels are a brushed red-gold. The top is covered with a textured black vinyl.

Circuit boards are our usual superior quality G-10 fiberglass type. A preamp with this tremendous combination of features and performance would cost at least three times this much anywhere else. Kit not recommended for beginners due to complex switch and control wiring required.

156 Complete kit - less power Supply ----- Shipping weight 4 lbs. ----- \$44.50 + postage
Southwest Technical Products Corporation 219 W. Rhapsody, San Antonio, Texas 78216

Lil Tiger

The "Classic" amplifier in our line of kits.
Still "Great" five years after it was introduced.
Still unmatched in value for small systems.



SPECIFICATIONS

POWER OUTPUT	18 watts RMS ,22 watts IHFM per channel into an 8.0-Ohm load with 45 -volt power supply
DISTORTION	Less than 1% total har- monic up to full rated output
FREQUENCY RESPONSE	3dB down at 20 and 100,000 Hz
INPUT IMPEDANCE	Approximately 5000 Ohms
OUTPUT IMPEDANCE	Approximately 0.1 Ohm (damping factor of 80 with 8- Ohm load)
HUM AND NOISE	More than 80 db below one watt
SENSITIVITY	1.5-volt input for 20- watt output
SUPPLY VOLTAGE	12 to 45 volts d.c.

- * ALL SILICON TRANSISTOR CIRCUIT
- * OUTPUT SHORT PROTECTION
- * COMPLEMENTARY OUTPUT STAGE
- * FIBREGLASS CIRCUIT BOARD

This fantastic little amplifier has been built by thousands of people since it was introduced over three years ago. There is still nothing that can compare with this amplifier in its price range. Quality parts and circuit boards, plus the new brushed gold front panel make this amplifier a real "best buy".

# 140-CX Lil Tiger Amplifier	Shipping weight 6 oz.	\$11.10
# P-140 Power Supply and Chassis	Shipping weight 6 lbs.	\$15.00 + postage
Complete Stereo Amplifier kit (consisting of 2 #140-CX and P-140)		\$37.00 + postage

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

UNIVERSAL TIGER Mk II

Southwest Technical Products is proud to offer the latest model of the amplifier that not only has been "wiping out" all other amplifiers at test clinics across the country, but which is also better than the test equipment. At anything less than full rated power output the amplifier distortion plus noise is typically less than .02% (see graph next page). There are few instruments that will accurately measure distortion this low. If the oscillator used does not have distortion considerably less than .01% it cannot possibly give an accurate test result.

On this latest version, we have added an idle current adjustment on the board as standard equipment and added a volt-amp limiting circuit. This in addition to the output current limiting that is inherent in our circuit provides the amplifier with triple protection against damage in audio applications.

This is an ideal amplifier for use with guitars and other amplified instruments. Combined with one of our instrument preamps it makes an outstanding bass, or standard amplifier system. Organs, or anything else requiring a powerful, but clean amplifier can make good use of the Universal Tiger.

This kit has step-by-step assembly instructions and pictorial drawings to make assembly as easy as possible. Nothing but the best parts and our usual fiberglass circuit board go into this kit.

SPECIFICATIONS

Power Output	Up to 100 Watts RMS (see graph)
Total Harmonic Distortion plus hum and noise	(see graph)
Input Impedance	20,000 Ohms
Damping Factor	Over 100 with 8 Ohm load
Sensitivity	1.5 Volts RMS for full output
Hum and Noise	More than 80 db below 10 Watts
Bandwidth	3.0 db down at 0.5 and 250 KHz

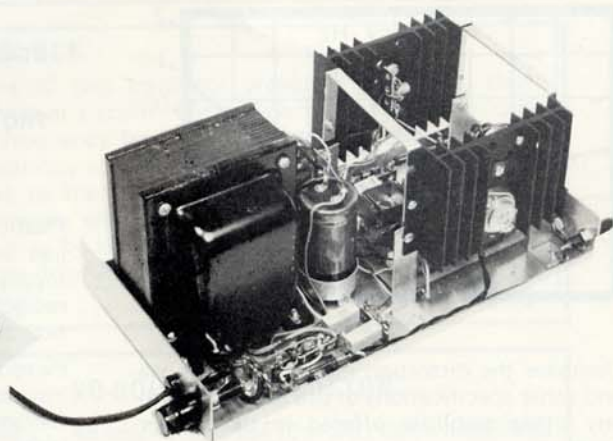
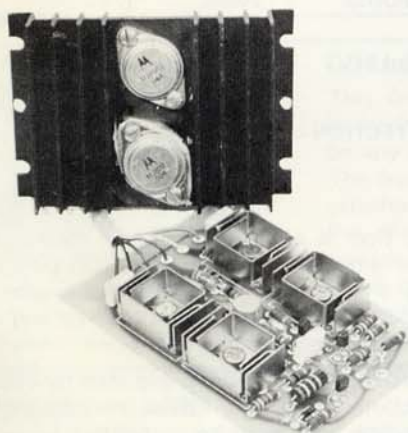
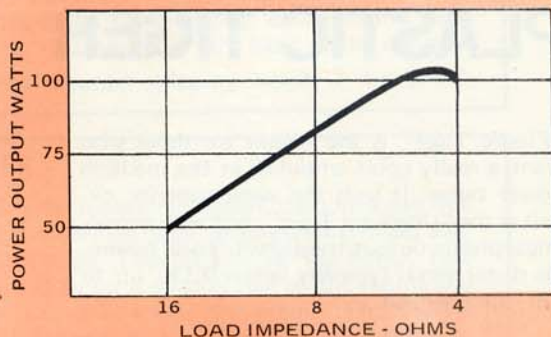
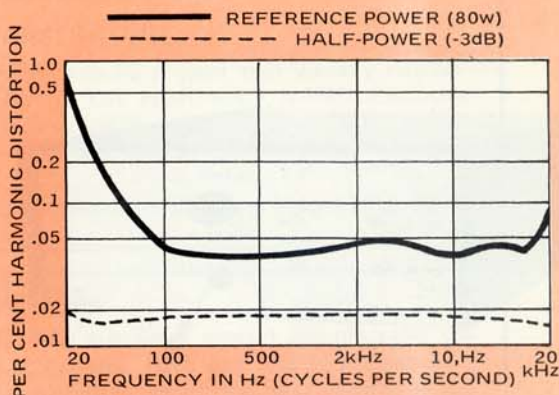
Distortion at rated output and 3 db below full output. The superior performance of the amplifier is obvious. The increase in low frequency distortion at full rated output is due to the large amount of supply ripple that occurs at these power levels. This will cause a higher reading on the distortion meter, but does not represent an actual distortion of the input signal.

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

The complete single channel kit (UT-M) is available for use in instruments systems, organs and PA systems. It may be used with any multispeaker installation having a total impedance at the amplifier output terminals of 4 Ohms or more. Matches any 25 Volt line installation directly.

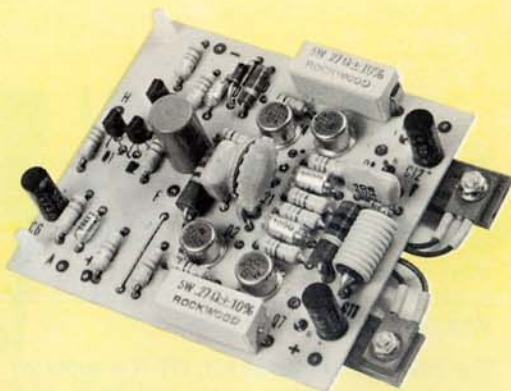
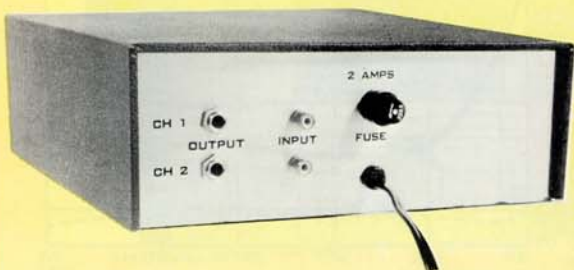
The custom installation kit, UT-K is supplied with only the driver board and parts, plus the heat sink (1) and output transistors. This kit may be used for custom designs and in cases where the proper supply voltage is already available.

For the "Hi Fi Freaks" who want the ultimate stereo system we are making a special offer of two complete kits at less than twice the price. Any amplifier system using a common power supply will have more crosstalk and less peak power than two independent amplifiers. Since Universal Tiger is for those who want the best, we only offer the kit in single channel form.



UT-K Kit (left picture)	shipping weight 3.6 lbs.	\$30.00
UT-M Single Channel Kit (right picture)	11x6x5 shipping weight 14 lbs.	\$60.00
2UT-M Two Channels	shipping weight 28 lbs.	\$115.00
UT-MA Assembled and tested	Shipping weight 14 lbs.	\$90.00
2UT-MA Two Channels Assembled and Tested	weight 28 lbs.	\$175.00

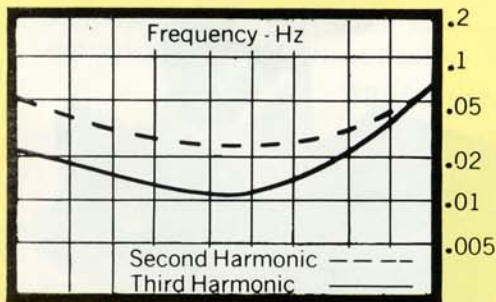
Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216



PLASTIC TIGER

"Plastic Tiger" is the answer for those who want a really good amplifier in the medium power range. It uses the same superior circuit as the "Universal Tiger", but with economical plastic output transistors. Total harmonic distortion is typically below 0.1% up to full rated output.

20 50 100 200 500 1K 2K 5K 10K



Compare the distortion curves shown above and other specifications of this amplifier with any other amplifier offered in this power range.

POWER OUTPUT-	Either Channel Singly: 36 Watts RMS-8 Ohm load 40 Watt IHFM-8 Ohm load Both Channels Driven: 30 Watts RMS-8 Ohm load
TOTAL HARMONIC DISTORTION-	Less than 0.1% up to rated output
INPUT-IMPEDANCE-	22 K Ohms
OUTPUT IMPEDANCE-	Less than .25 Ohms 20-20,000 Hz
SENSITIVITY-	1.25 Volts RMS input for 30 Watts output
HUM & NOISE-	More than 80 Db below 10 Watts - less than 1.0 Mv at output
FREQUENCY RESPONSE	1.0 db down at 5 and 100,000 cycles. 3 db down at 2 and 150,000 cycles
STABILITY -	Unconditionally stable with any type load impedance, or input impedance.
PROTECTION -	Current into shorted load limited by inherent characteristics of circuit.

Plastic tiger is available, as shown above, as just an amplifier, or complete with power supply and chassis. The chassis has brushed red-gold trim panels on front and rear and a textured black vinyl covered top.

Pictorial assembly drawing and step by step instructions make this kit an easy project for anyone with even an elementary knowledge of electronic construction.

- # 185 "Plastic Tiger" kit - circuit board and parts for one channel only----- 6 oz.----- \$18.50
- # 185-C Complete Stereo Amplifier - consists of two 185 kits as above
plus chassis and power supply as shown----- 8 lbs.----- \$55.00
- # 185-CA Assembled Stereo Amplifier----- 8 lb. ----- \$75.00

Southwest Technical Products Corporation 219 W. Rhapsody, San Antonio, Texas 78216



540

- * NEW - POWER DRIVER IC DESIGN
- * VOLT-AMP PROTECTION CIRCUIT
- * COMPLEMENTARY OUTPUT TRANSISTORS

"540" is a new direction in power amplifier design. The entire circuit consists of the new 540 Power Driver integrated circuit and two big husky 10 Amp complementary power transistors.

This produces an outstanding amplifier value. Total harmonic distortion is typically around 0.1% at levels below 1 Watt and reaches 1% just before clipping level. The 31 transistor circuit in the IC driver features differential amplifier input and volt-amp protection of the output circuit. Only with an integrated circuit could all these features be included at this price.

The chassis trim panels are brushed Red-Gold and the top is covered with textured black vinyl. As always the circuit boards are of fiberglass and only quality parts are supplied in the kit. "540" is supplied with pictorial and step by step instructions. Can easily be assembled by anyone who has learned how to solder.

SPECIFICATIONS

- POWER OUTPUT**----- 20 Watts IHFM
 18 Watts RMS-one channel
 15 Watts RMS-both driven
- DISTORTION**----- Less than 1% total harmonic at full output. Less than .2% at levels below 1 Watt.
- FREQUENCY**----- 1 db down at 5 and 100,000 Hz
RESPONSE
- HUM AND NOISE**-- More than 80 db below 10 Watt
- SENSITIVITY**----- .4 Volt RMS for full output

"540" Amplifier kit - one channel - board and parts only ----- 6 oz. ----- \$10.50

"540-C" Complete Stereo Amplifier - consists of two "540" kits as above and chassis with power supply shown ----- 6.0 lbs. ----- \$37.50

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

PSYCHEDELIA II

" A DIGITAL ELECTRONIC COLOR ORGAN "

- * **4 Channels — 800 Watts per Channel**
- * **Unaffected by Audio Level Variations**
- * **Fantastic Sensitivity — Absolute Separation**
- * **Works with your Stereo or Instrument Amplifier**

Specifications

Dimensions (circuit board w/ parts) 8¼"x5½"x2½" Input Impedance: stereo 100 ohms monaural 50 ohms Sensitivity 10 millivolts RMS Bands: Low approximately 60 Hz – 240 Hz	Med Low 240 Hz – 960 Hz Med High 960 Hz – 3840 Hz High 3840 Hz – 15,360 Hz Power Handling capability – 800 watts of 117 volt lamps per channel Circuitry Power Requirements – 117 volts 100 watts
--	--

The Psychedelia II is a unique innovation into the category of color organs. Rather than using conventional inductor-capacitor tuned circuits or active filters which usually leave a lot to be desired when considering response time, selectivity, and sensitivity; this unit's filter is entirely digital.

At a rate determined by an internal oscillator (adjustable from 5 to 50 cycles per second) the unit measures the amount of time between two positive going zero crossings of the music information and then digitally converts this time period into a binary representation of the frequency of that particular cycle. The unit then decodes this binary information and determines which one of the four channels this frequency is allocated to and turns on the bank of lights connected to that particular channel. This bank of lights is then locked on until the next piece of music information is analysed.

The time delay between the second zero crossing and the turning on of circuitry controlling the appropriate bank of lights is well under 10 microseconds which means the delay lies almost entirely in the lamps themselves thus yielding an extremely fast response time.

Since the frequency of the music information is measured digitally the selectivity is excellent, and since this unit is frequency sensitive rather than amplitude sensitive the display is not affected by changes in the volume level of the music. This means there is no channel bleedover at high volume intervals and no loss of color action at low

volume intervals. The unit's sensitivity is such that it can respond to signal amplitude levels of less than 10 millivolts RMS (12.5 milliwatts into an 8 ohm load).

Power-wise each of the unit's four channels is capable of handling up to 800 watts RMS, of 117 volt lights. Although large spot or flood lamps may be used, a parallel arrangement of small multi-colored lights is recommended because of their faster response time.

The unit may be used with either a mono or stereo sound system assuming there is a common ground between the left and right channels. In the case of a stereo system, the unit analyses the music information from both the left and right channels so that only one unit is needed for a two channel system. Connections for both the mono and stereo modes are made to your existing sound system at the speaker terminals.


The optional display cabinet consists of a 23 1/2" x 13 1/4" x 14" black vinyl covered enclosure, diffuser plastic, and lamp mounts and sockets. The cabinet itself is assembled but it is necessary to mount the front plastic sheet, attach the lamp mounts and sockets, and wire the sockets to complete the assembly.

When the unit is operating and the display is viewed from the front, each of the lamps behind the sheet of diffuser plastic has the appearance of a six petal flower whose size is dependent upon the lamp size and the lamp's distance from the plastic sheet.

QX-II	Four Channel Color Organ Kit - less display - Shipping Weight 4 lbs.	\$44.95
QA-II	Assembled color organ kit - less display - Shipping Weight 4 lbs.	\$60.00
QD	Display semi-kit. Screw lamp mounts in and wire to finish.	\$26.50

* too large to mail - Shipped bus or express collect

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216



PSYCHEDELIC STROBE LIGHT

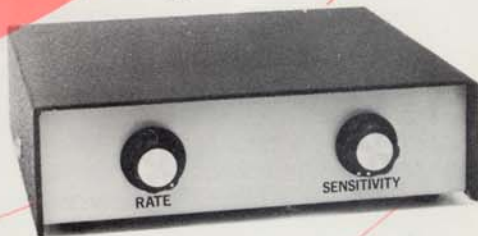
- * WIDE RANGE OF FLASH RATES
- * FLASH HEAD REMOTE FROM CONTROL BOX
- * INPUT PROVIDED TO SYNCHRONIZE FLASHES WITH YOUR MUSIC



One of our most popular electronic kits, the Strobe Light, will delight adults as well as the "teen-scene". Aside from practical uses in photography and general purpose stop-motion observation, this psychedelic strobe light can create the most unusual effects seen with musical groups or "at home" parties. The strobe flashing at a proper rate synchronized with the music in a semi-darkened room produces an illusory and bizarre scene. It reminds one of the old time "flicks" and "The Keystone Kops". Musical groups need not limit their purchase to just one strobe. Experiment with several — The effect is incredible.

The punched cabinet is chrome plated. Top covering is textured black vinyl. Cabinet matches Sonolite Color organ. Polished 5 1/2" reflector.

X-149C Psychedelic Strobe Kit shipping weight 2 lbs. ----- \$17.50 + postage
 X-149A Assembled Psychedelic Strobe shipping wt. 2 lbs. --- \$29.95 + postage



"Medical opinion concerning the use of strobe lighting in darkened rooms is 'cautionary'. Prolonged use may induce hallucinations or trigger undesired side-effects. It should not be used in the presence of anyone subject to epilepsy."

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216



SONOLITE-COLOR ORGAN

LAMP DIMMER or SPEED CONTROL

Although inexpensive, the Sonolite features a full wave "Triac" control system. The input system is completely isolated from the power control section by a lamp-Photocell assembly. No danger of blown fuses, or shocks. This versatile circuit can also be used as a motor speed control, lamp dimmer, or remote power control system. Use a "Sonolite" with each amplifier in your musical group to produce a light show with the music. The high power control rating of the Sonolite makes it possible to operate several floodlamps from each unit.



NEW SIMPLIFIED CONSTRUCTION — WITH PICTORIAL WIRING DIAGRAMS
HIGHER POWER — NOW 8 AMPS RMS

- * USE WITH ANY MUSIC SYSTEM
- * CONTROLS UP TO 800 WATTS
- * EASY TO INSTALL

SPECIFICATIONS

CONTROLLED POWER - 800 WATTS
INPUT POWER - (FULL OUTPUT) .5 WATT
INPUT IMPEDANCE - 8 or 16 OHMS
CONTROLS - BACKGROUND SENSITIVITY
SIZE - 5 x 5 x 1 1/4

X147C - Kit - Sonolite Color Organ ----- shipping weight 2 lbs.----- \$11.00
147 - Assembled - Sonolite Color Organ ----- shipping weight 2 lbs.----- \$16.50

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216



SPECIFICATIONS

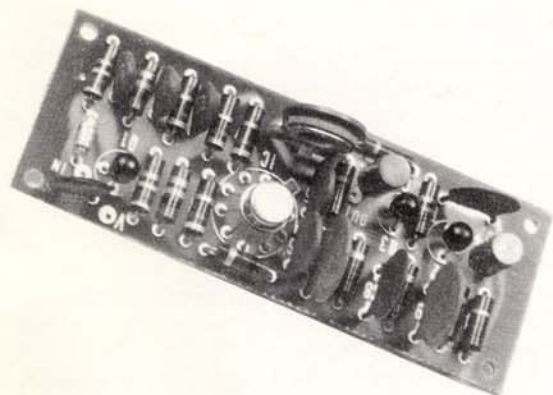
NOMINAL DELAY: 37 Milliseconds
 REVERBERATION: 0-50%-Control on panel
 POWER: 40 Volts Minimum @ 25 Ma.

REVERB ADAPTOR

Use this add-on unit to put reverberation into music system. The Hammond Organ reverb unit used in this system adds the "concert hall" reverberation time to the music electronically. Makes your listening room have the same sound acoustics as a large hall. The four transistor driver-amplifier unit plugs in between your present preamp and amplifier. Power for the adaptor can be obtained from any of our amplifiers. The circuit may be used with either vacuum tube or transistor systems.

- # 139-C Complete kit including board, springs & chassis ----- \$ 18.75
- # 139 Board only ----- \$ 2.00
- No. Z-1C Reverb Springs only
 11" long shipping wgt. 2 lbs \$10.00

NOW GET "MUSIC ONLY" FM PROGRAMS



SPECIFICATIONS

INPUT IMPEDANCE .5 Meg. Ohms
 OUTPUT LEVEL 1.0 Volt
 DETECTION RANGE 50-80 KHz

SCA MULTIPLEX ADAPTOR

Sensational new approach to detection of the multiplexed subcarrier used by many FM stations. This adaptor may be used with any FM radio, or tuner. New "phase locked loop" integrated circuit provides both the filtering and FM detector needed to receive these broadcasts. Our kit is complete with instructions for installing the adaptor in your tuner. Power required is 12.0 Volts DC @ 6 Ma.

Use of the "phase locked loop" system results in a circuit with superior rejection of unwanted interfering signals, better fidelity and requires no inductors, or tuned circuits.

Note - Commercial use of this circuit for background music systems is illegal.

- # PLL-1 ----- shipping weight 2 lbs. --- \$ 14.50

Now available with built in squelch circuit to eliminates noise if your station drops it's SCA carrier.

- No. PLLS-Shipping wgt. 2 lbs. \$19.50

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216



M/M/M INSTRUMENT AMPLIFIER

* TREMOLO' REVERB AND FUZZ * FOOT SWITCH CONTROL OF TREMOLO AND REVERB
 *FET INPUT STAGE FOR QUIET OPERATION *60 WATT RMS OUTPUT - 150 WATTS PEAK

Time tested by professional combo groups, this instrument amplifier can't be touched by any similar professional unit as far as price, quality and versatility are concerned. A complete custom sound system can be purchased for your electric guitar or other type stringed instrument. If you already have some type of system for your instrument, then special sections can be added for desired effects. Custom fit your instrument as to your needs. This versatile system includes controllable fuzz, tremolo, and reverb; also, a clean 60-Watt booster. A straight preamplifier for vocal or voice announcements can also be added. Now being supplied with short proof output cuicuit. No more blown transistors from accidentally shorted speaker leads.

MMM Complete Amplifier, less cabinet, with reverb and both preamps -
 Amplifier cabinet size: 24 1/2 x 9 x 7 1/2". Shipping weight - 13 lbs. \$90.00 + postage.
 (Prices of amplifier, preamp and reverb sections as separate items available on request.)

FET INPUT STAGE

SHORT PROTECTED AMPLIFIER

PICTORIAL ASSEMBLY INSTRUCTIONS

BRUSHED FINISH FRONT PANEL

NEW!

SPECIFICATIONS

POWER OUTPUT: 60 Watts RMS
 150 Watts Peak Power
 FREQUENCY RESPONSE: 20 Hz
 to 50 KHz
 DYNAMIC RANGE: 60 Db
 without overloading

COMPLETE CONTROL OF FUZZ,
 TREMOLO AND REVERB

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

for CUSTOM Instrument Systems

Dual Channel Preamp "558"



One straight preamp with only tone controls, one pre-amp with tremolo and reverb. All on one $3\frac{1}{4} \times 4\frac{1}{2}$ circuit board. New op-amp circuit provides all these features and less than 0.1% distortion at 1.0 Volt output. Combine with one of our "Tiger" series, or 540 amplifiers for a complete system.

The circuit features the "558" dual op-amp integrated circuit, for constant stable operation. Tremolo is controlled by a FET transistor for the cleanest smoothest modulation you have ever heard.

Kit is complete with all controls (9) but less the reverb spring. — Gibbs type IV or "O.C." Z-1B

"558" Preamp Kit	3 lbs	\$27.85
Reverb Spring	2 lbs	\$10.00

MIXER — 6 INPUT

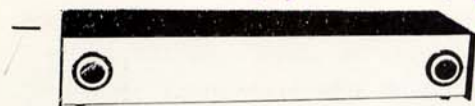
For those custom PA designs — Two channels with three inputs on each channel, or six inputs to one channel as needed. An Individual FET high impedance input stage is used with individual volume controls for each input. The mixer cannot cause loading, or add noise to your system. Inputs of up to 0.5 Volts RMS may be used without overloading. Circuit gain of 3 in two channel, or unity if used on one channel allows addition of the mixer at almost any point in your system from the microphone to the power amplifier. Requires 12 to 24 Volts DC at 5 Ma. Complete with controls.

Ixr-6 Kit	2 lbs	\$13.75
-----------------	-------------	---------



IMPROVED

ULTRASONIC INTRUSION ALARM



- * EASY INSTALLATION
- * IMPOSSIBLE TO AVOID
- * AREA PROTECTION
UP TO 400 SQ. FEET
- * PROVEN "DOPPLER" TYPE DETECTION
- * NEW FET INPUT STAGE
- * FET - TRIAC DRIVER

SPECIFICATIONS

Size - 13 x 3 x 2 1/2

Area Coverage -

Controls -

Power Requirements -

Outputs -

Operating Frequency - 40 KHz

Up to 400 Sq. Feet

Sensitivity and remote reset if desired

117 Volts AC or 12 Volts DC

117 Volts AC or 12 Volts DC Available

Now you can equip your home with the same type intruder alarm system used by industrial plants, banks, and the IRS. The protected area is flooded with ultrasonic sound waves. Anything moving in the sound wave field causes a change in the amount of sound reflected back to the receiver and trips the alarm. This is the same "Doppler" principle used in Highway radar.

Easy installation — simply "aim" the unit at the area to be protected, and set the sensitivity. The integrated circuit and nine transistors operate on 12 Volts, so the alarm can be used in cars and boats too. The internal AC power supply will supply up to 1 Amp to any 12 Volt alarm device that is connected to the system.

UA-2 Ultrasonic Alarm Kit - shipping weight 4 lbs. \$37.25

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216



SHORT-PROOF POWER SUPPLY

This high capacity variable voltage source not only will provide you with "rock stable" voltage for your experimental circuits, but will also provide protection against accidental shorts or circuit malfunctions. The over-current protection can be set for any amount of current that would be safe for your experiment. The supply will then "limit" current to this value or less. The power supply itself cannot be damaged by having its output leads shorted.

Cabinet is chrome finished on the inside. Front panel is our new brushed gold finish. This combined with the black vinyl covered top gives you a handsome instrument that looks far more expensive than it's actual modest cost.

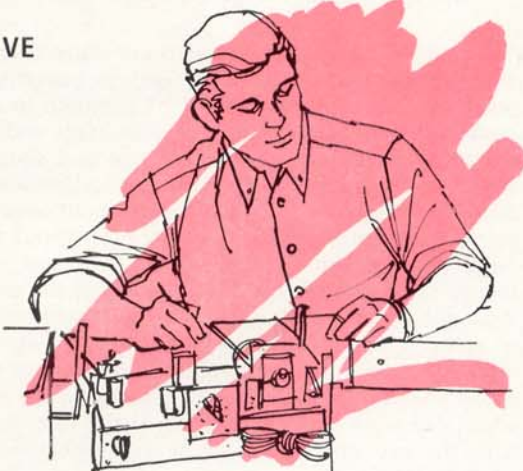
143C Short-Proof Power Supply ----- shipping weight 8 lbs.----- \$ 39.50

*** SAFE - ADJUSTABLE CURRENT LIMITING
CIRCUITS PROTECT YOUR CIRCUIT AND
THE SUPPLY FROM DAMAGE BY EXCESSIVE
CURRENT DRAIN**

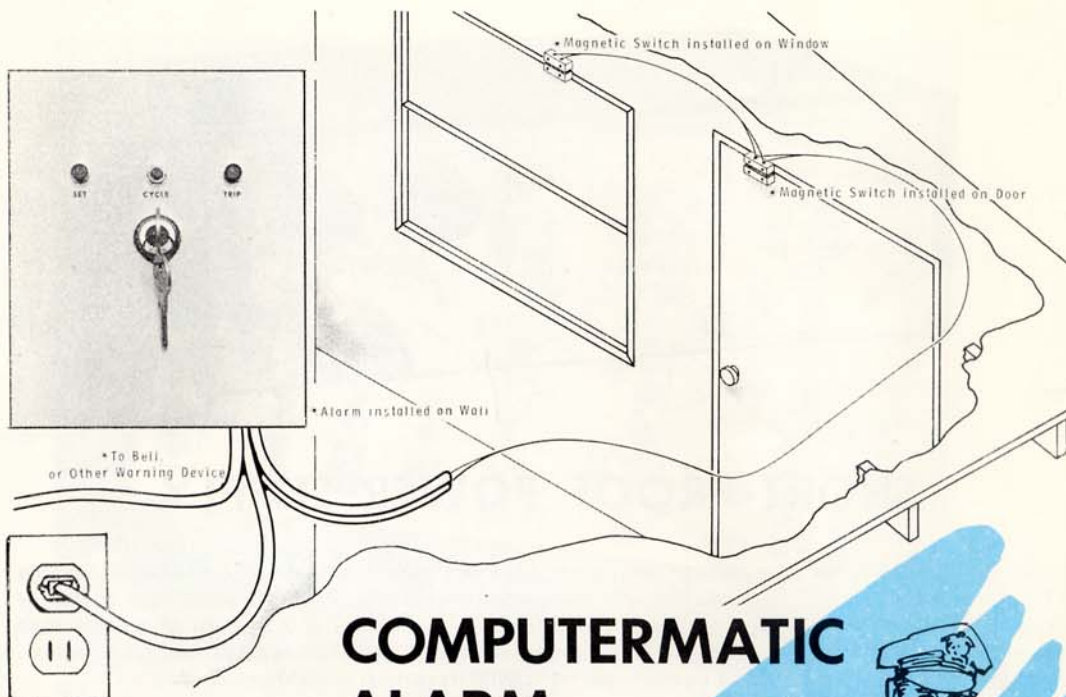
*** 0 - 35 VOLTS DC AT UP TO 2.0 AMPS**

SPECIFICATIONS

Regulation	1% or 0.1 volt, whichever is greater for 0-100% load
Voltage Range	0-32 volts, 10 mA to 2 amperes, continuously adjustable
Stability	Less than 20-MV drift (constant ambient temperature with fixed load) over a 6-hour period
Input	105-125 volts a.c.
Ripple	0.003%, or 10 mV r.m.s. maximum



Southwest Technical Products Corporation 219 W. Rhapsody, San Antonio, Texas 78216



COMPUTERMATIC ALARM

- * FULLY AUTOMATIC - JUST TURN A KEY
- * PROFESSIONAL TYPE EQUIPMENT
- * THE ULTIMATE IN SWITCH & TAPE SYSTEMS

The most automatic and easy to use alarm system yet built. New digital integrated circuits as used in computers now make it possible to provide you with the ultimate in convenience. The control system uses a "solid, reliable" tape and switch protection system. To use this automatic alarm you simply insert the key and turn the system ON. If the protection loop is okay and all protected doors are closed, the green light goes on and you know that the system is armed. You may now go out any of the protected doors. The digital circuit counts "two" and prepares the circuit to trip the alarm on the next opening of the protection loop, -all indicator lights go off. When any protected door is next opened, or window tape broken, the circuit trips the alarm and locks itself into this condition. You have up to 60 seconds to insert your key in the switch-lock and turn off the alarm. The amount of delay is adjustable from 5 to 60 seconds. If the system is not turned off with the key, the bell, light, siren, or whatever is used; goes on when the delay timer runs out.



CA - Alarm kit ----- shipping weight 5.0 lbs. ----- \$19.50

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

SIREN

115 Volt AC motor driven. Suitable for outdoor installation. Very high sound output level.

#SEE 3 lbs \$15.95

MAGNETIC SWITCHES - for doors, or windows. Operate with up to 1/2 inch gap between switch and magnet. Potted reed type switch cannot be damaged by moisture, or corrode. Magnet will operate switch from any side. 2 3/15 x 1/2 x 1/2.

REE ----- \$ 2.35 ea.

LEAD WINDOW FOIL - 3/8 wide - .0008 thick. Protects windows from being used to gain entrance. Lead foil will break and trip your alarm if the glass cracks. Blocks simplify connecting to the window tape.

Lead Tape - 1 lb. spool ----- \$ 2.55
Take-off Blocks ----- .25

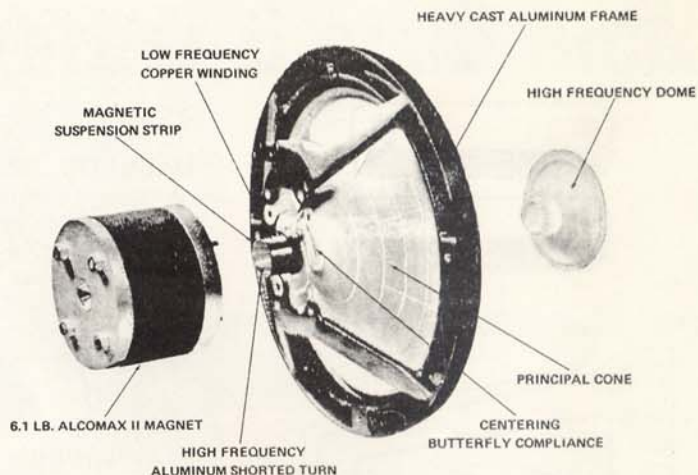
SHUNT LOCKS - with sleeve and two washers. Make it possible to enter a protected area without tripping the alarm. Furnished with two round type keys. These locks are much more difficult to pick than flat key types.

SSL ----- \$ 5.50 ea.

UNDERDOME BELL - 8 inch, 6 Volt DC bell with heavy gauge steel gong. This bell will operate directly from our No. CA or No. UA-2 alarm systems. Will operate from standby battery if power line is cut.

UDB ----- shipping weight 6.0 lbs ----- \$ 11.25

The Hartley-Luth Loudspeaker



* MAGNETIC SUSPENSION

The patented magnetic suspension principle, used exclusively in Hartley speakers, utilizes a magnetic field to restore the speaker cone to a neutral position in place of conventional mechanical springs or acoustic suspension. Magnetic suspension produces the fastest restoring force ever developed in a loudspeaker, providing a quality of transient response that is equalled only by the live performance.

* ALL-POLYMER SPEAKER CONE

The patented all-polymer cone outmodes all paper cone speakers. Employing materials never before available, the polymer cone will not flex or break up as do conventional paper cones, and its performance will not be affected by changes in humidity.

Adding to the natural strength of the polymer cone are built-in concentric rings and radial ribs which ensure true piston action under all conditions.

* DUAL VOICE COIL

The dual voice coil and cone arrangement provides a true coaxial structure. The voice coil consists of an aluminum shorted turn, located axially within the main copper winding. The two coils are physically isolated by a specially prepared compliance, only 4 mils thick, which permits the inner aluminum coil to move independently at high frequencies. The dual voice coil directs respective high and low frequency sounds to separate cone sections of the speaker.

MAGNET STRUCTURES

The Model 224MSG and 218MSG speakers are driven by a mammoth 14 pound magnet of Alcomax III, produced to Hartley's exacting specifications, to assure virtually unlimited power-handling capacity. The Model 220MSG and 207MSG loudspeakers utilize a heavy 6.1 pound magnet structure of Alcomax II metal.

*Patent Nos. 3,003,191 and 3,160,716

The Hartley Loudspeaker Line

MODEL 220 MSG 10-INCH FULL RANGE TRUE COAXIAL SPEAKER

The most advanced and versatile 10-inch speaker today, this unique speaker employs a two-section all-polymer cone and a dual voice coil which directs high frequencies to the tweeter section and lows to the woofer portion. Patented magnetic suspension principle precisely controls cone excursions. Supported by a satin-finished cast aluminum frame and 6.1 pound Alcomax II magnet. Frequency response 20 to 25,000 Hz. Impedance 5 to 8 ohms.

\$ 145.00

MODEL 218MSG 18-INCH BASS SPEAKER

This workhorse is capable of reproducing a 16-cycle pedal tone fundamental of the organ, easily and without coloration. Magnetic suspension capably handles the wide excursions produced by such low frequencies. The all-polymer cone delivers a tight, clean bass instead of the flabby-sounding lows heard on speakers with conventional paper cones. Satin-finished cast aluminum frame. Mammoth 14 pound magnet structure. Frequency response 16 to 4,000 Hz. Impedance 12 to 16 ohms.

\$ 225.00

MODEL 224 MSG 24-INCH SUPER BASS SPEAKER

This two-foot woofer will handle the deepest sounds at volumes up to a thunder clap with remarkable clarity and distinction. This is the ultimate in bass reproduction. Novice or audiophile, the difference is clear to the ear. Magnetic suspension. Satin-finished cast aluminum frame. Mammoth 14 pound magnet structure. Frequency response 16 to 4,000 Hz. Impedance 12 to 16 ohms.

\$ 275.00

MODEL 207MSG 7-INCH MIDRANGE/TWEETER

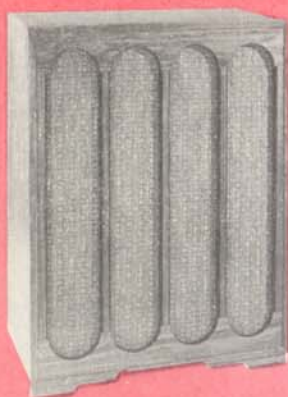
Provides the desired clean, smooth sound of a wide-dispersion direct-radiating speaker. Can be used to complement the Hartley 220MSG, 218MSG or 224MSG speakers. With magnetic suspension. All-polymer cone. Satin-finished cast aluminum frame. 6.1 pound Alcomax II magnet. Frequency response 1,000 to 25,000 Hz. Impedance 5 to 8 ohms.

\$ 110.00

Southwest Technical Products Corporation 219 W. Rhapsody, San Antonio, Texas 78216

Concertmasters by Hartley

The hand crafting of the Hartley-Luth speakers guarantees the quality of their sound. Unlike mass-produced speakers designed to appeal to the greatest number of people, the Hartley-Luth speakers have been designed for those who are seeking an approach to "live" performance in their music systems. To maintain such quality in our speakers means very tight control in every phase of construction. Only hand crafting can give us this control. Every speaker meets the high standards we have set.



Model V

Magnificent floor-standing, three-speaker system in attractive modern decor for discriminating audiophiles.

SPEAKERS:

Model 224MSG 24-inch woofer,
Model 220MSG 10-inch midrange,
Model 207MSG 7-inch tweeter.
Frequency response 16 to 25,000 Hz.
Impedance 12 to 16 ohms.

CABINET:

Hand-rubbed oiled walnut
40½" high x 29" wide x 18" deep.
Grillecloth burnt almond and gold.
Interior acoustically treated with
80 square feet of Soundsorber.

\$775.00

Model VI

Mediterranean-styled, three-speaker system with same specifications as above. Hand-rubbed oiled walnut cabinet enhanced by cathedral gold grillecloth.

\$795.00

Holton A

Moderate-size, floor-standing system for contemporary taste with choice of a one or two-speaker array.

SPEAKERS:

Model 220MSG 10-inch in full-range array, Frequency response 20 to 25,000 Hz. Impedance 5 to 8 ohms.

CABINET:

Hand-rubbed oiled walnut
34" high x 24" wide x 14" deep.
Grillecloth burnt almond and gold.
Interior acoustically treated with
50 square feet of Soundsorber.

\$275.00

Concertmaster Junior

Medium-size Mediterranean styling with choice of a one or two-speaker system for those who demand the very best in sound at a moderate price.

SPEAKERS:

Model 220MSG 10-inch woofer/midrange
Model 207MSG 7-inch midrange/tweeter.
Frequency response 16 to 25,000 Hz.
Impedance 12 to 16 ohms.

CABINET:

Hand-rubbed oiled walnut
38" high x 29" wide x 16" deep.
Grillecloth woven mocha.
Interior acoustically treated with
70 square feet of Soundsorber.

\$425.00

Ask for quotation on speaker systems and amplifier kits. we can save you money.



Zodiac II

For the first time from Hartley a full range speaker system in beautiful cabinets at under \$100...

Your choice of either Teak or Rosewood finish at the same low price. This two speaker system in a fully enclosed cabinet will give excellence of response from 40-18,000 hz.

Cabinet dimensions are: 18" x 11½" X 8½" and can be used in the vertical or horizontal position. Weight 16 lbs. The nominal impedance of 5 ohms makes this an ideal unit for solid state application.

Available 16 lbs \$90.00

Zodiac III

For the person who wants just a little bit more, same beautiful cabinets in choice of Teak or Rosewood finish \$135...

This three speaker system in similar styling but in slightly larger cabinets than the Model II has a range from 38-20,000 hz.

Cabinet dimensions are 20" x 12" x 8½" and can be used in the vertical or horizontal position. Weight 23 lbs. Nominal 5 ohm impedance assures maximum output on solid state units.

Available 23 lbs \$135.00

Southwest Technical Products Corporation 219 W. Rhapsody, San Antonio, Texas 78216

Battery Charger 6 or 10 Amp



- * Keeps auto, boat, or motorcycle batteries at peak power
- * Automatic reset circuit breaker *6 or 12 volt
- * All wires ready to use—no soldering required in kit

This high output battery charger is ideal for keeping those boat, cycle, snowmobile, truck and car batteries up to full charge. Both models feature all steel vented cases, 6 foot power and charging cables, insulated copper battery clamps, automatic circuit breakers, rivited in place vinyl handles, large easy to read meter, high output transformers and full-wave selenium rectifiers. The kit may be assembled in less than an hour with only a screwdriver. All wires in the kits are supplied with push-on terminals and clips already attached at the factory. Easy step-by-step instructions supplied for assembly. Both models, 6 or 10 amp, will supply up to 50% more than rated output on initial charging surge; tapers to 2 to 3 amps as the battery comes up to full charge. Case is red with black crackle end plates.

6 Amp Battery Charger Kit No. B-6 10 lbs shipping weight.	\$14.95
Assembled 6 Amp Charger No. B-6A 10 lbs shipping weight.	\$17.50
10 Amp Battery Charger Kit No. B-10 12 lbs shipping weight.	\$19.95
Assembled 10 Amp Charger No. B-10A 12 lbs shipping weight.	\$23.50

Southwest Technical Products Corporation 219 Rhapsody, San Antonio, Texas 78216

New 175 MHz Frequency Scaler... only 33.75 (cheap)

÷ 10 Scaling 2 to 175 MHz
Up to 10 Volts RMS input
ECL circuits-TTL output
Use with any counter



Extend the range of your FC-2 or any other counter to 175 MHz. This prescaler uses emitter coupled logic circuits that will count directly to 175 MHz. Used in combination with any frequency counter, this will allow you to measure CB, Ham and 2-way frequencies into the VHF ranges.

Prescaler and it's power supply are in a 6 x 5½ x 2 metal case with vinyl covered top. Input sensitivity is 0.25 Volts RMS at 2 MHz decreasing to 0.5 Volts at 175 MHz. Output is 3.5 Volts for matching to TTL logic. This kit does the same job as similar equipment costing three times our price.

Prescaler Kit No. 177 — 3 lbs. \$33.75

COMING SOON-

Available
April 72

No. 195 Preamp

We have a really great new preamp system that was designed using integrated circuit techniques. The only difference is that this circuit has better characteristics than an IC version possibly could. It is impossible to get really superior noise figures in an IC amplifier due to the number of processing steps necessary, each of which tends to add noise. It is also impossible to get precise resistor values and difficult to make NPN and PNP transistors on the same chip. Our seven transistor circuit is a basic op-amp type circuit. You add equalization, or drive tone controls with it the same as you would with an IC op-amp module. The difference is the performance. Would you believe less than .01% distortion at full output at any audio frequency?

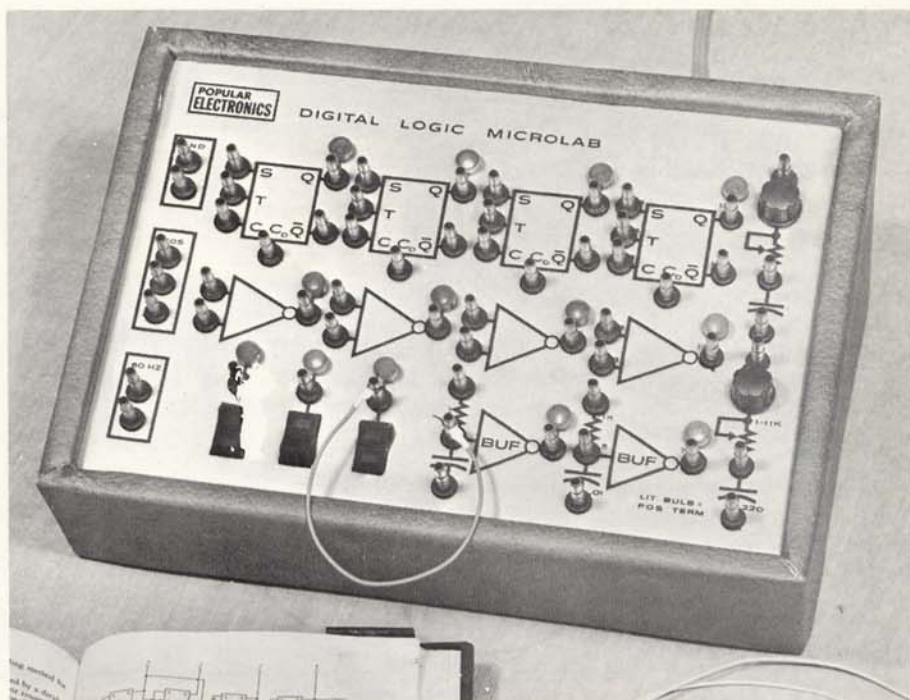
No. 195 on 3 x 3 plug in card. \$9.75

LED Readout

Our new light emitting diode counters are almost ready. These will feature all TTL logic with counter (decade or modulo 6), storage, and the segmented decoder. The readout will be the large MAN-1A. The counter to be used in this system has provision for parallel input so the readout may be used with systems, or instruments requiring a preloaded number in the counter. These include digital frequency readout system for radios, and WWV clocks. Counting decades will be plug-in type and we will have various mother boards available. This compact design makes possible a readout of four digits in a package 4 x 5 x 2. Operation is entirely from +5 volts, so mobile, or portable uses are a natural for this readout system.

No. 5LED 1.0 lb. \$14.95

Southwest Technical Products Corporation 219 Rhapsody, San Antonio, Texas 78216



DIGITAL LOGIC MICROLAB

- * LEARN HOW DIGITAL CIRCUITS WORK
- * VERIFY DESIGNS QUICKLY
- * EXCELLENT TEACHING AID

The Microlab makes it possible to quickly check, or understand a variety of digital circuits. The Microlab includes four flip-flops, four gates, two buffers and three bounceless switch circuits that can be used to make hundreds of basic logic circuits. Each logic block has a light to indicate it's state. Three types of input signals are available on the panel. Connections are made with simple clip-on leads that require no soldering and are easy to attach and remove. The entire instrument is "goof proof". No possible combination of connections, no matter how wrong, can damage the circuits.

The kit is complete with AC power supply and vinyl covered outer case. An ideal companion for the Microlab is available. Don Lancaster's "RTL Handbook" presents basic digital logic in an easy to understand, nonmathematical manner. With this book and the Microlab anyone can have a good understanding of digital circuits in a very short time.

# DLM - Complete kit as shown -----	shipping weight 4 lbs -----	\$29.95
"RTL Cookbook" by Don Lancaster -----	shipping weight 1 lb -----	5.50

Southwest Technical Products Corporation 219 W. Rhapsody, San Antonio, Texas 78216

THEREMIN

ELECTRONIC MUSICAL INSTRUMENT



- * FET VOLUME CONTROL
- * USE WITH ANY INSTRUMENT
- * VINYL COVERED CABINET - MATCHES INSTRUMENT AMPLIFIER
- * POWERED BY 9 VOLT BATTERY

SPECIFICATIONS

Controls:	Pitch - Zero set - Volume
Approximate Sound Range:	30 to 15,000 Cycles
Volume Range:	50 to 60 DB Change
Power:	Internal 9 Volt Battery

A modern, solid state version of the Theremin all electronic musical instrument. Two antenna plates, operated by hand capacity, control the pitch and volume of the sound. Add this to your combo for a really unique and different sound.

Our revised version of this instrument now has fully shielded coils and a new tuning circuit. Adjustments are fast and noncritical. The rugged vinyl covered cabinet matches our MMM Instrument amplifier.

- #142 Complete kit for Theremin ----- shipping weight 4.0 lbs. ----- \$ 22.50
with cabinet & antenna
- # TE Theremin-electronics kit only (no case) ----- shipping weight 9.0 oz. ----- \$ 16.50

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

COUNTERS

The most complete line of counter kits available. Now you can build your own custom digital instruments with any features and any type readout you prefer. Check the new lower prices on these all TTL Series 74 circuits.

NIXIE type—Our most economical counter. Counts 0 to 9 and resets. Complete with circuit board 7490, 7441 readout tube, wire, solder, etc.

Standard TTL logic levels—counting speeds typically 20 MHz. Requires +200 Volts DC @ 4 Ma. and +5 Volts DC @ 50 Ma.

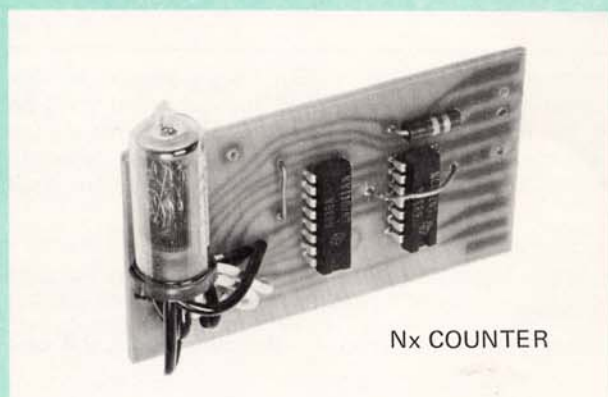
DECADE Counter Kit⁷⁴Nx 5 Oz. \$9.95

NIXIE type—Modulo 6—Same features as above counter, but counts 0 to 5 and resets. Complete with circuit board 7492, 7441, readout tube, wire, solder, etc. Needed to build timers, clocks, etc. Logic levels and power requirements same as Nx.

MODULO 6 Counter Kit⁷⁴Nx-6 5 oz. \$9.95

NIXIE type with storage. Addition of storage circuit to our standard counter makes the readout more pleasant to use. The counter will display the previous count until a "strobe" pulse is applied to change to the next reading. This results in a continuous nonblinking display. Complete with 7490, 7475, 7441, circuit board, readout, wire, solder, etc. Counts 0 to 9 and resets. Standard TTL logic levels. Requires +200 Volts DC @ 4 Ma. and +5 Volts DC @ 70 Ma.

DECADE Counter with Storage Kit⁷⁴SNx 6 oz. \$12.95



Nx COUNTER

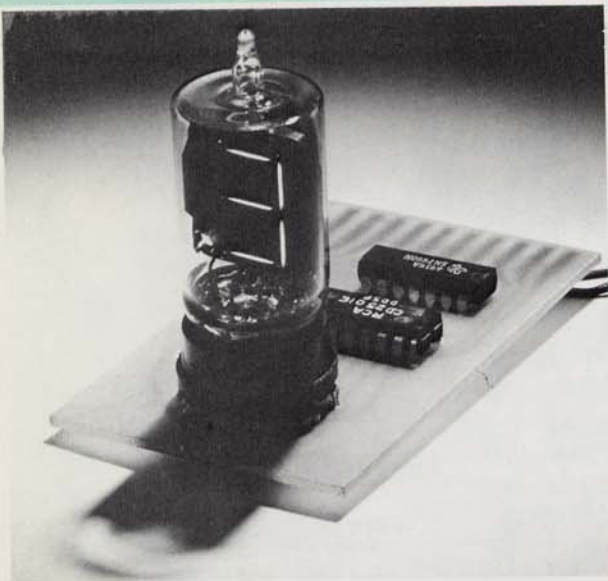
Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216



UNX COUNTER

NIXIE type Up-down counter. Counting speeds of up to 32 MHz in either direction—Storage—Counts any modulo from 2 to 10—Present inputs. This counter has every feature that you might need for sophisticated instruments. The counter can either add, or subtract counts. The display changes only on command for nonblinking readout. The counter may be wired to count any modulo desired and any number may be entered in the counter before counting is begun. Complete with 74192, 7475, 7441, circuit board, readout tube, wire solder, etc. Standard TTL logic levels. Requires +200 Volts DC @4 Ma. and +5 Volts DC @80 Ma.

UP-DOWN DECADE Counter Kit Unx 8 oz. \$17.60



SEGMENTED Type—For seven segment type displays. This counter may be used with "Numitron" type filament readouts, LED readouts having a common anode (MAN-1) or even with large score board readouts. A nine pin socket on the board may be used directly with the "Numitron" type readout, or a matching plug may be used for other readouts. Complete with 7490, 7447, circuit board, solder, etc. but less readout device. Standard TTL logic levels. Requires +5 Volts DC @50 Ma.

DECADE Counter Kit

Num 7 oz. \$8.90

MULTI - DECADE NIXIE[®] READOUT

- * 3 1/2 DECADES - ONE CIRCUIT BOARD
- * TTL CIRCUITS 10 MHz TOGGLE RATE
- * OVERFLOW INDICATOR CIRCUIT
- * DISPLAY BLANKING INPUT

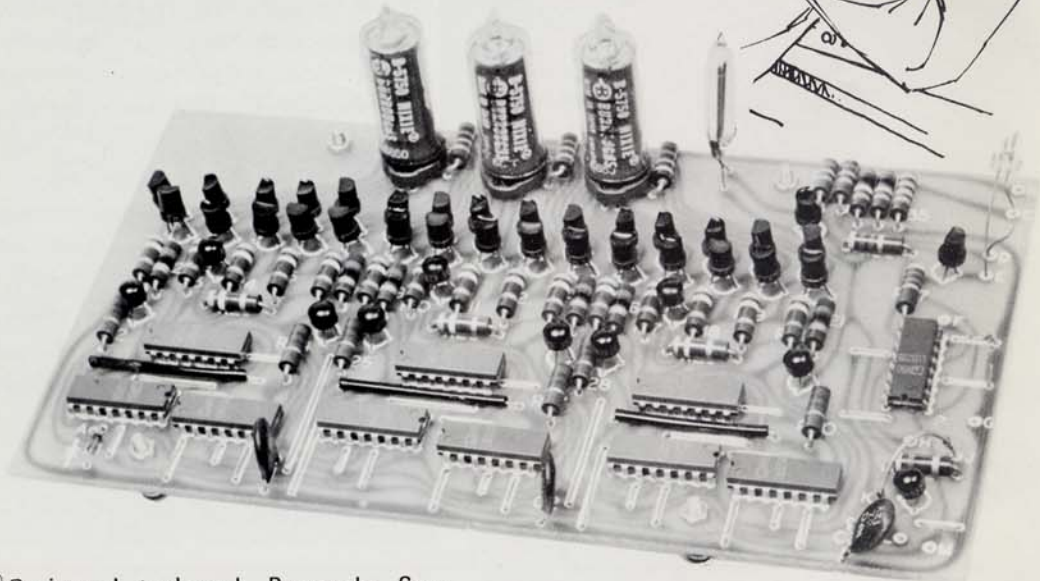
A convenient one board version of our Nixie[®] decimal counter. One board has all the circuits necessary for 3 complete decades and a "One". All that is needed for a direct digital readout system is on the board and ready to bolt into your system. In addition to the counting circuits there is provision for display blanking and an overrange indicator. Circuits used are TTL types which are compatible with our TTL time base and scaler circuit.

MNX-1 Multi-Decade Nixie[®] Readout
shipping weight 1/2 lb. ----- \$39.50

Southwest Technical Products Corporation,
219 W. Rhapsody, San Antonio, Texas 78216

SPECIFICATIONS

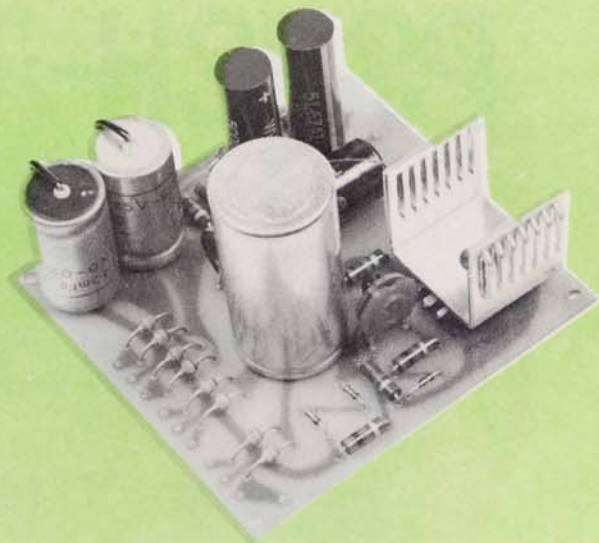
RANGE: 0 to 1999
FULL SCALE ACCURACY: .05%
COUNTING RATE: 10MHz (Typical)
SIZE 4 x 7 3/8 - 1 3/4 High
POWER REQUIRED:
5.0 Volts @ 350 Ma. DC
180 Volts (Min.) @ 7 Ma. DC



[®] Registered trademark Burroughs Corp.

DIGITAL EQUIPMENT POWER SUPPLY

Regulated power supply with adjustable voltage output for powering our various digital counters, time bases, etc.



SPECIFICATIONS - P 170

Voltage Output:

3.5 to 5.5 volts DC @ 1.5 Amp.

200 volts @ 30 Ma.

± 10 volts @ 100 Ma.

Regulation:

$\pm 2\%$ on low voltage

P-170 Shipping wt. 5 lbs. \$14.55

This power supply will supply the stable ripple free voltage needed for reliable operation of our UNX, NX, MNX and NUM counters. P-170 includes a ± 10 volt supply for systems such as our new digital instrument that incorporate operational amplifiers in the circuit. This supply may be adjusted for either 3.6 or 5.0 Volt output and may therefore be used with either our RTL or TTL projects. Kit includes circuit board, transformer and all parts needed for the supply, as shown in photo.

TIME BASES - SCALERS

These circuits are useful building blocks for custom digital instrumentation.

Line reference time base for use with $3\frac{1}{2}$ decade readout systems. Counting speed of up to 10 MHz. Operates from any signal of 250 Mv. level or greater. High impedance FET input. Complete with display time control. Requires 5.0 Volt DC 300 Ma. Board $2\frac{7}{8} \times 3\frac{1}{2}$.

TB-1 \$10.50

Line reference time base. Similar to above but counts up to 20 MHz. Requires +10 Volts at 5 Ma. and 5 Volts at 300 Ma.

TB-2 \$15.50

Quad scaler - Four independent X 10 circuits on one board. May be used in various parts of a circuit, or cascaded to divide by 10,000. BCD outputs available from each scaler. Inverter circuit on board allows reset to be either positive or negative going signal as required by other circuits in system.

Board only $1\frac{7}{8} \times 2\frac{1}{4}$. Requires 5.0 Volts at 200 Ma.

S-410 \$11.95

Quad scaler - Two divide by ten and two divide by six scaler circuits on one board. Useful in building timers and clock circuits. Other features and details as above.

S-106 \$11.90

PSYCH-TONE



WARNING: Operation of this device in the presence of anyone over thirty may be hazardous to your health.

- * A PROGRAMMABLE MELODY SYNTHESIZER
- * WITH 28 CONTROLS AND A 63 NOTE MEMORY

A new and unusual approach to music synthesis. The sounds produced by the Psych-Tone are modern - to say the very least - and operation is simple.

Basically a "pseudo random" sequence generator which operates as a tune computer, the Psych-Tone allows variation of the tempo, voicing, selection of pauses and tone shaping. The internal digital computer may be set for 1728 different 63 note sequences. These may be selected and combined with any of 63 pause combinations to produce 108,864 different melodic lines. These may be played at almost any tempo, pitch, or volume; back-

ward, or forward. Six different voices are provided and the user has full control of the attack, sustain and decay functions.

The wide flexibility of the controls makes possible sounds like a piano, violin, bagpipe, or something never heard before. On occasion, the music may sound familiar, but it is more likely to have science-fiction flavor with many wild tonal sequences.

The Psych-Tone has an internal monitor speaker, but preferably, it should be used with an external amplifier having reverb and tremolo to get the most exotic sounds.

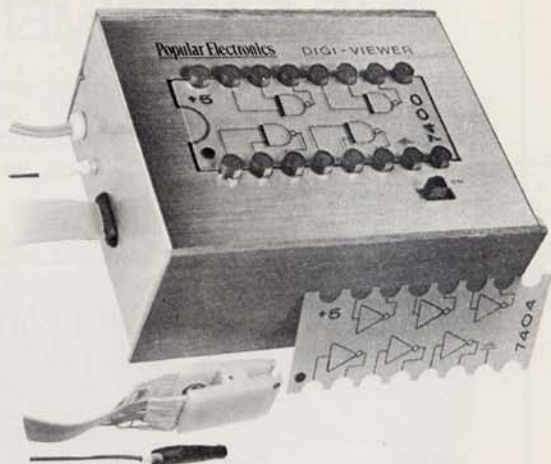
PSY Psych-Tone kit complete with black vinyl covered case----- 6 lbs.-----\$53.15
7" x 10" x 5" High - Not for beginners - Complex wiring involved
Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

DIGI-VIEWER

* AUTOMATIC - IN OPERATION TESTING OF DIGITAL INTEGRATED CIRCUITS

In-circuit dynamic testing of integrated circuits is now simple and inexpensive with the Digi-Viewer. The instrument consists of 16 lamps and a special clip which allows quick and easy connection to the pins. The lamps visually show whether the voltage at each pin is over, or under 1.4 Volts. Overlays are provided for all popular circuits, making it possible to see at a glance what is happening at the various pins of the entire package simultaneously.

VU Kit of all parts including case, clip and sheet of most used overlays-- 4 lbs ---- \$19.86



ELECTRIC CLOCK

This project is a beautiful example of the type of systems that may be built from our basic digital modules. The electronic clock shown is built from decade and modulo six counters, a digital power supply and a scaler. The only unique circuit in the project is the board containing the circuits for the "1" hours numeral. We are providing a semi-kit on this project consisting of the various modules needed to build the clock, but no case. This allows the builder complete freedom to build the clock in any form that might be desired.

The circuit may be built to produce a clock showing minutes and hours, or minutes, hours and seconds. The clock showing seconds requires two additional counters and as a result costs more than the simpler clock. This circuit has a lamp indicator for AM and PM which makes the addition of an alarm circuit quite simple. If you need an alarm function, or wish to make a timer that has an output after a set length of time, you need only add a five, or seven input gate to the basic clock circuit.



- * THE MOST MODERN
CLOCK AROUND
- * CIRCUITS TO INDICATE
AM AND PM
- * FULLY ELECTRONIC SYSTEM
NOTHING MECHANICAL
- * ALL SERIES 74 TTL CIRCUITS

EC-1 Electronic Clock - Hours & Minutes - less cabinet ----shipping weight 6 lbs. ----- \$55.00

EC-2 Electronic Clock - Hours, Minutes & seconds-less cabinet--shipping weight 6 lbs. · \$70.00

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

IC EXPERIMENTERS SERIES

We are proud to offer this excellent series of simple, inexpensive integrated circuit projects. All of these projects make use of integrated circuits and printed circuit type construction. The finished projects are useful as demonstrators of digital circuit operation, or test equipment. All are packaged in a combination of brushed gold and wood grain cabinets.



SIGNAL INJECTOR -

A simple one IC circuit that produces a wideband signal that can be used from audio to several megacycles. The signal injection technique is a fast way to check radios and audio equipment. The entire circuit can be quickly tested with only one hookup. The Signal Injector has AF and RF output jacks and a level control to set the amount of output signal. Enough power is available to drive a speaker directly. Less batteries.

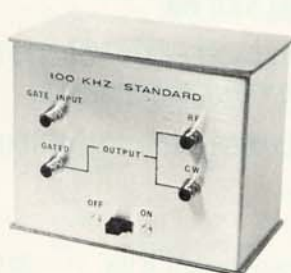
171 Signal Injector ---- shipping weight 2 lbs ---- \$ 7.30



SHIFT REGISTER -

A four transistor, three IC project that demonstrates shift register operation of the type used in digital computers. This demonstrator will store information and feed it back in the same way as the memory in a large computer. This project requires .3 Amps for operation and must be used with a power supply as listed for these projects (SIP) or an equivalent power supply.

172 Shift Register --- shipping weight 2 lbs ----- \$ 9.75



100 KHz FREQUENCY STANDARD -

This simple one IC project will provide you with an accurate stable source of 100 KHz square waves. This is an ideal instrument for calibrating radio receivers, scopes and signal generators. It can also be used as a high frequency clock source for involving digital IC circuits. A trimmer adjustment is provided so that the output can be beat against WWV, or any other primary standard for optimum accuracy.

173 100 KHz ----- shipping weight 2 lbs. ---- \$ 10.85



LOGIC DEMONSTRATOR -

A one transistor, one IC project that visually demonstrates the action of OR, NOR, AND, NAND, Exclusive OR, and Exclusive NOR digital gates. This project teaches the most basic action used in digital systems.

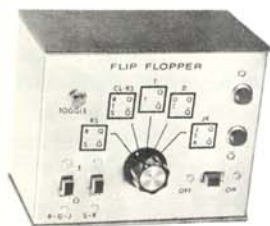
No. 182 Logic Demonstrator Shipping weight 2 lbs. \$8.25



BINARY COUNTER -

This three IC, four transistor project demonstrates the binary counting system. Each time the count button is pushed the counter advances to the next number in the "binary coded" decimal (BCD), or 8421 system. The circuit includes signal conditioning, counting and lamp driving circuits. This is another very basic digital concept.

No. 183 Binary Counter shipping weight 2 lbs. \$8.90



FLIP-FLOPPER -

This two IC one transistor circuit demonstrates the action of all the various type of digital-flip-flops; RS, Colocked RS, Toggle, Type D and JK flip-flops. Two switches are used to set a zero, or one on the inputs and a pushbutton is used to toggle the circuit. The result is displayed on two lamps that indicate the Q and Q states.

No. 184 Flip Flopper shipping weight 2 lbs. \$8.50



DUAL CLOCK -

This one IC two transistor project is actually a dual multivibrator circuit. The two output square waves can be any frequency from approximately 1. Hz to 30 MHz. The frequency is determined by the size of the capacitor attached to the external posts. Output is 3.0 Volts P-P minimum with an external 5 Volt supply. Supply voltage may be anything from 3 to 5 volts, so the Dual Clock can drive RTL, Dtl or TTL loads.

No. 176C. \$8.40

TWO-TONE ALARM -

A one IC one transistor circuit that produces a distinctive sound that cannot be missed anywhere. Useful as an alarm, signaling device, etc. Output switches from 500 to 1000 Hz five times a second. Less batteries.

No. 174 Two-Tone Alarm Ship Wgt. 2 lbs. \$6.90

NO-BOUNCE PUSHBUTTON -

An easy to build one IC project that is most useful for checking digital circuits. The integrated circuit is connected as a Set-Reset type flip-flop. This conditions the pushbutton signal and eliminates any bounce, or arcing that could result in multiple triggering of digital circuits being checked.

No. 181 No-Bounce Pushbutton S. W. 2 lbs. \$5.90



UNIVERSAL DIGITAL INSTRUMENTS

MAIN FRAME

Our new universal digital instruments main frame contains a 3 1/2 digit readout with over range indicator and a power supply. The readout provides a bright "Nixie" type display. The power supply provides all voltages needed by the various plug-in modules we have available. All voltages for the instrument plug-ins are regulated, or zener stabilized. Display time control and manual reset controls are provided with the main frame kit.

This system makes a complete digital instrument series available at a very low cost. Since the readout system is the most costly portion of a digital system and this part is only purchased once, you make a large savings over the cost if these were all individual self contained instruments. All digital circuits are the latest type TTL logic. The counter response is typically 20 MHz. Cabinet is finished with gold front panel and vinyl covered steel top.

#170 Power Supply and Cabinet shipping weight 8 lbs. \$ 19.55
 #MNX-1 Multi-Decade® Nixie Readout shipping weight 1 lb. \$ 39.50

® Registered trademark Burroughs Corp.

DIGITAL VOLT-OHMMETER

(See Picture, Above)

SPECIFICATIONS

Ranges - 0-1, 0-10, 0-100, 0-1000 DC Volts
 100% over range on all scales.
 Input Impedance - Not less than 10 Meg
 Ohms on any scale.
 Accuracy - Better than .5% of reading ± 1
 count.
 Measuring Period - .1 Sec. Up to one reading
 a second can be made.
 Misc.- Automatic overrange indicator, auto-
 matic decimal point, protected input.

- * MEASURES UP TO 2000 VOLTS
- * 10 MEG OHM INPUT IMPEDANCE
- * BETTER THAN .5% ACCURACY
- * DUAL-SLOPE CONVERSION

Now you can build a digital voltmeter with accuracy far better than any "meter readout" instrument. Not only do you get direct readout, but also a faster, more accurate, unambiguous reading with better resolution. Now thanks to new low cost integrated circuit you can own a superior instrument of this type for almost the same cost as an old fashioned meter job.

VM-1 Voltmeter Plug-In
 shipping weight 2 lbs. \$ 29.95

Southwest Technical Products Corporation, 219 W. Rhapsody, San Antonio, Texas 78216

FREQUENCY COUNTER

Now everyone can afford to own a frequency counter. A counter is the ideal instrument for checking signal generator frequency, transmitter frequency, etc. Since the circuit actually counts each cycle of input signal the accuracy is within + 1 count or better. The circuit features a FET input of 1 Meg, or higher impedance, a synchronized switch gate system and variable display timing generator. Brushed gold panel to match main fram.

FC-2 Frequency Counter Plug-in Kit
shipping weight 2 1/2 lbs ----- \$ 29.95

- * MEASURES FREQUENCY DIRECTLY
- * 1,000 Hz TO 20 MHz FULL SCALE RANGES
- * .01% ACCURACY-LINE TIME BASE

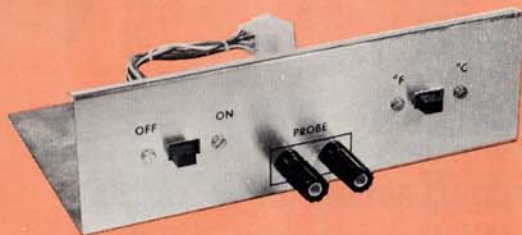


DIGITAL-THERMOMETER

Now temperature can be measured quickly and easily with a digital readout system. This plug-in makes it possible to measure, or monitor temperature over an 70 to 80° F range with an accuracy of 1% or better. This is an ideal instrument for use in photography or chemical applications where temperatures must be constantly monitored. The electronic circuit makes sixty measurements every second and displays the result on the large bright main frame readout tubes.

THR-1C Complete kit with probe and chassis
1.5 lbs. ----- \$16.80 plus postage

- * 0-100° C OR 0-212° RANGE
- * INSTANT CHANGE FROM °C TO °F
- * 60 SECOND MAXIMUM RESPONSE TIME



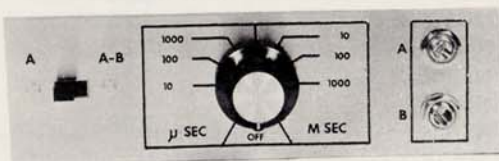
TIME PERIOD PLUG-IN

This instrument consists of a precision oscillator, divider circuits and a controlled gate. This instrument has six ranges and can be used to measure accurately the time interval over which an event occurs, or between two events; to as close as 10 Microseconds. Full scale ranges are .01, .1, 1, 10, 100 and -1000 seconds.

The counter may be started and stopped with a microphone, photocell, or switch. When the start signal occurs the gate routes the pulses from the oscillator into the counter. When the stop signal occurs the counter is stopped. The number of

counts is directly proportional to the time between the two events. This instrument can be used to check camera shutter timing, bullet velocity and similar applications.

TM-2 Time Period Plug-In
shipping weight 2 1/2 lbs ----- \$38.75



Southwest Technical Products Corporation 219 W. Rhapsody, San Antonio, Texas 78216

TRANSISTORS

2N404	\$.45	40668	\$ 1.58
2N1302	.50	C106Y2	.90
2N2430	.57	L14B (2N5777)	1.45
2N3055	2.05	MJ802	4.86
2N3228	1.62	MJ4502	5.26
2N3528	1.63	MJE2955	2.90
2N3611	1.15	MJE3055	1.50
2N3877	.47	MPS2923	.43
2N4400	.60	MPS3638	.45
2N4402	.60	MPS6521	.90
2N4870	.75	MPS6523	.97
2N4871	.68	MPS6566	.57
2N4919	1.90	MPU131	.79
2N4922	1.48	SS1122	1.60
2N5129	.25	SS1123	1.35
2N5139	.22	TIS43	1.02
40409	1.14	TIS58	.62
40410	1.32		

INTEGRATED CIRCUITS

CA3020	\$2.80
LU321A	2.48
LU380A	1.34
LU322B	2.75
MC717P	1.08
MC723P	1.35
MC724P	1.08
MC785P	1.25
MC789P	1.08
MC791P	2.35
MC799P	1.08
MC7400	.77
MC7402	.77
MC7404	.96
MC7441	4.36
MC7447	5.30
MC7473	1.68
MC7475	2.75
MC7476	1.86
MC7490	3.07
MC7492	3.07
MC74192	10.00
MC1303P	3.65
NE565K	10.25
NE540K	5.50
N5111A	2.65
N5558	2.98

DIODES AND RECTIFIERS

Germanium diodes	\$.15
VS-148	1.00
3.3 V zener (IN4728)	.50
3.9 V zener (IN4730)	.50
4.7 V zener (IN4732)	.50
5.6 V zener (IN4734)	.50
10 V zener (IN4740)	.50
24 V zener (IN4749)	.50
27 V zener (IN4750)	.50
36 V zener (IN4753)	.50
IN914	.35
IN3754	.32
IN5060	.56
IN5624(CA-15)	.68
40583	.61

MISC.

B5750-Nixie	6.75
ZM-1000	5.75
Socket (AM-1000)	.60
MFT-110 Flash Tube	3.50

SOUTHWEST TECHNICAL PRODUCTS CORPORATION

219 W. RHAPSODY

SAN ANTONIO, TEXAS 78216

REST IN PEACE

Popular Electronics 1954 – 1971

Dear Electronics Kit Builder:

It is with great sadness that we must report the passing of a good friend. Popular Electronics will be missed by everyone who had an interest in electronics. The departed was taken seriously ill in May 1971 and never recovered despite the efforts of its many friends.

The name remains in the form of a combination of Popular Electronics and Electronics World (PEEW). The survivor is obviously not Popular Electronics. A glance at the contents and the names of the people on the staff make this obvious. Thus passes from the scene one more source of information and projects for the serious electronic experimenter.

In the hope that this same fate will not befall any more publications of this type may I recommend your support of the following: Radio—Electronics 200 Park Ave. South, New, York, N.Y. This old timer is once again printing more of the type of information that should interest you. Read an issue or two, let them know what you think and give it your support with a subscription if you like what you see. The Audio Amateur, 307 Dickinson Ave. Swarthmore, Pa. 19081. This is a small new publication for the serious "Hi Fi Freaks" among us. The material is good and should be interesting and useful to all of you who enjoy and use audio circuits of all types. Wireless World, 40 Bowling Green Lane, London, England. The leading British publication in the electronics field, has now been published for 61 years. Although not widely known in this country, Wireless World is possibly the best general audience electronics publication in the world. There is a great variety of material in each issue ranging from quite advanced to basic electronics. Anyone having a serious interest in things electronic should be reading this magazine.

Daniel E. Meyer, President