

FET 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.

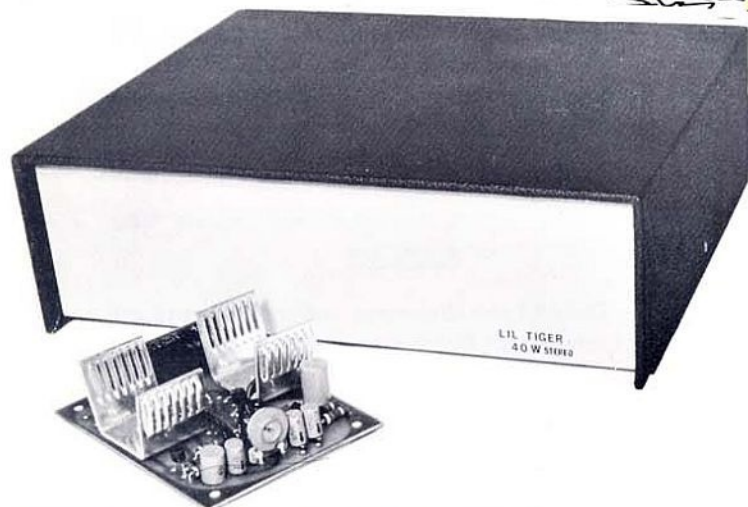
Chassis front and rear trim panels are a brushed red-gold. The top is covered with a textured black vinyl.

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

AMPLIFIERS

THE ONLY COMPLETE
LINE OF ALL SILICON,
COMPLEMENTARY OUTPUT,
POWER AMPLIFIERS AVAILABLE



LIL TIGER

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 harmonic 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

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UNIVERSAL TIGER

Southwest Technical Products is proud to announce a new amplifier with such outstanding performance and versatility that it is almost unbelievable. The amplifier uses a combination of design techniques used in operation amplifiers plus a unique new output circuit to give unmatched performance and stability.

Power output can be made anything you wish by simply using the proper supply voltages. No adjustments or circuit value changes are needed. You can build the amplifier with lower output now, and increase the power up to 125 Watts per channel when you can afford speakers that will stand the power. All by simply putting in a new power transformer.

This is an ideal amplifier for use with guitars, organs and other instruments. You will not find a less expensive source of clean power anywhere.

The response can quite easily be made DC and the distortion reduced to approximately .01% if the amplifier needs such characteristics for special instrumentation applications.

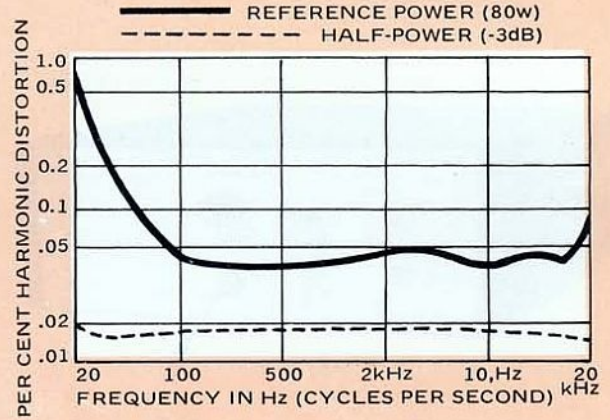
The circuit is protected from damage by any possible external operating condition, or combination of conditions. Any source impedance that will drive the amplifier may be used. Any type load impedance, including an open circuit, may be used without causing harm to the circuit. If an excessively low impedance load is used, which exceeds the power rating of the amplifier, the output fuse will open. A thermostat turns off the power if you do ever manage to overheat the amplifier by continuous high output operation.

SPECIFICATIONS

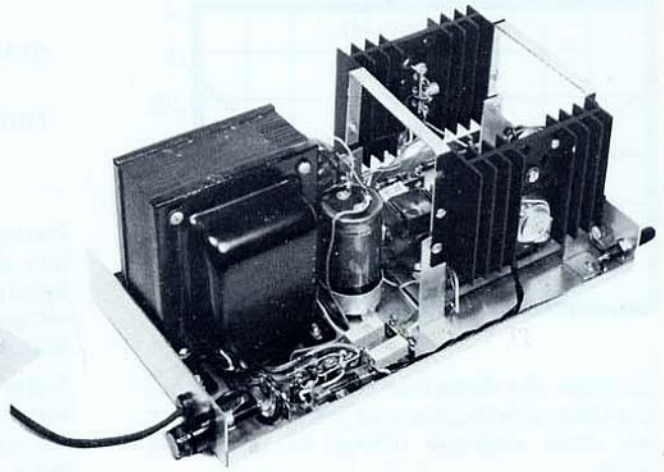
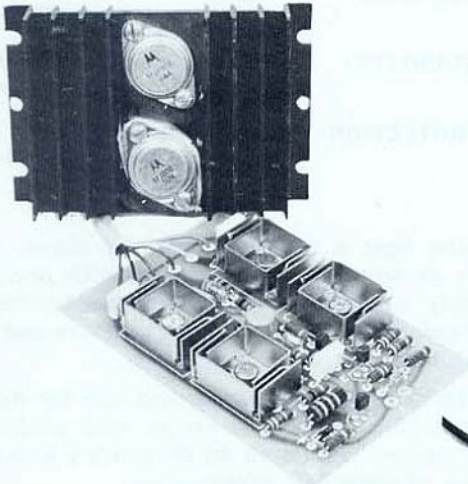
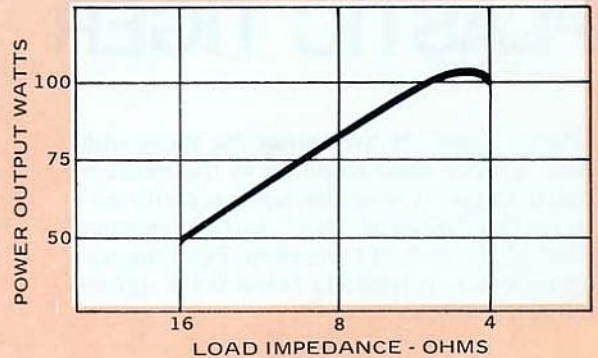
Power Output	10 to 125 Watts RMS (depends on supply voltage and load impedance)
Total Harmonic Distortion	Less than .5% -20-20,000 cycles - at rated output
Input Impedance	20,000 Ohms
Damping Factor	Over 100 with 8 Ohm load
Sensitivity	1.5 Volts RMS for full output
Hum and Noise	More than 80 Db below 10 Watts
Bandwidth	3 Db down .5 and 1 MHz.

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Distortion at rated output and 3 Db below full output shows the superior performance of this amplifier. Curves are for the standard kit. Distortion can be reduced by factor of two or more if desired, or necessary.

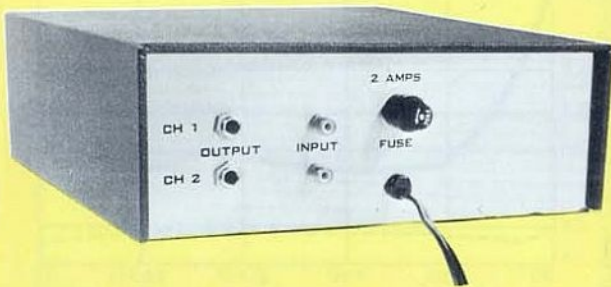


The amplifier is available in three versions. An amplifier-driver board and output transistors only kit for custom installation in your own cabinet (#UT-K). A single channel complete kit for instruments, organ, pa, etc., or "super" Hi-Fi systems using two separate power amplifiers for the ultimate in performance and power. (#UT-M). Third option is a complete kit with two channels and power supply in a single cabinet. Power output is limited to 60 Watts per channel if both channels are driven due to common supply.



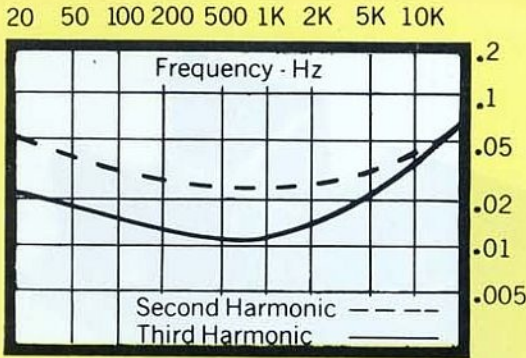
- # UT-K Kit (left picture)----- shipping weight 3.6 lbs.----- \$30.00
- # UT-M Single Channel Kit (right picture) 11x6x5-----shipping weight 14 lbs.----- \$60.00
- # UT-S Stereo Kit 11x8x5-----shipping weight 16 lbs.----- \$80.00

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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.



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

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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.

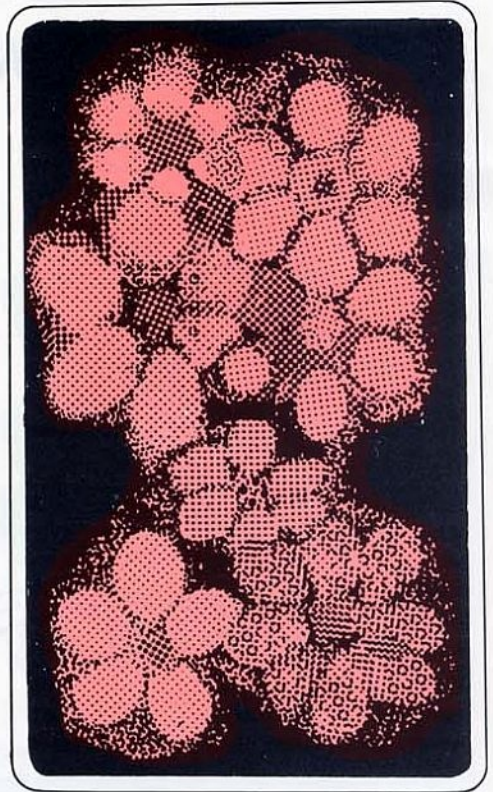
Our revised version of this instrument now has fully shielded coils and a new tuning circuit. Adjustments are fast and noncritical. The rugged vinyl covered cabinet matches our MMM Instrument amplifier.

#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

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THE ULTIMATE TRIP



- * 850 WATTS PER CHANNEL
- * FULL WAVE – TRIAC – POWER
- * OUTSTANDING CHANNEL SEPARATION
- * LARGE – BRIGHT – FLOWER PATTERN DISPLAY

"Psychodelia" is the ultimate color organ. Many of the features of the Psychodelia are unique and simply not available on any other color organ. The three channels are obtained by octave wide active filter systems that are very selective. There is almost no "color Crosstalk." The average type detector gives a light output that is much more nearly proportional to volume than a "cheap" peak detector. The beautiful large multicolor flower display is generated with standard 115 Volt lamps. The powerful Triac control system can operate loads up to 850 Watts per channel. Receptacles are provided on back of the cabinet so that external spot, or flood lamps may be connected into the system. This color organ does not use half wave SCR control, or small automotive lamps like many you have probably seen.

Send 25c for Reprint of Article (free with order)

- QX - Three Channel Filter and Power Control Kit - Shipping Weight - 4 lbs. ----- \$42.45
- QA - Complete Assembled Kit as shown above ----- 59.95
- QD - Assembled - Black plastic covered display - Seven lamp system - not wired ----- 26.50*

*Display is too large to mail - Shipped bus or express collect

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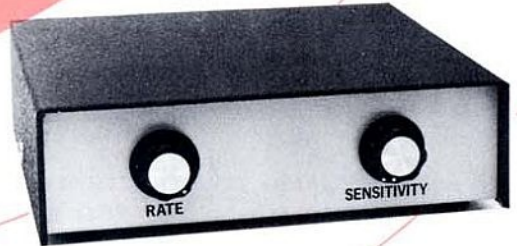
PSYCHEDELIC STROBE LIGHT

- * 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."

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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

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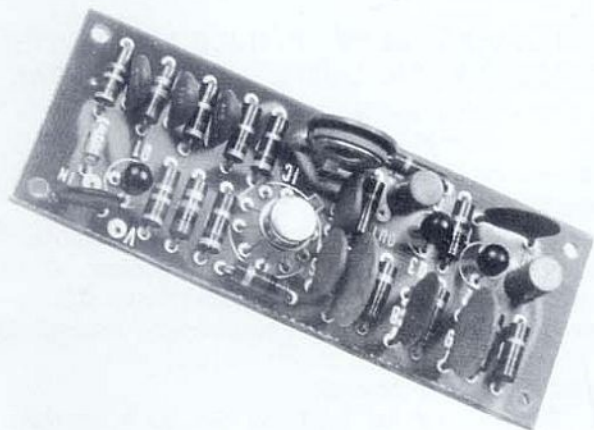
SPECIFICATIONS

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
- # IV-C Reverb springs only
 16½" long- shipping wt.- 2lbs. \$10.00



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



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 circuit. 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.)

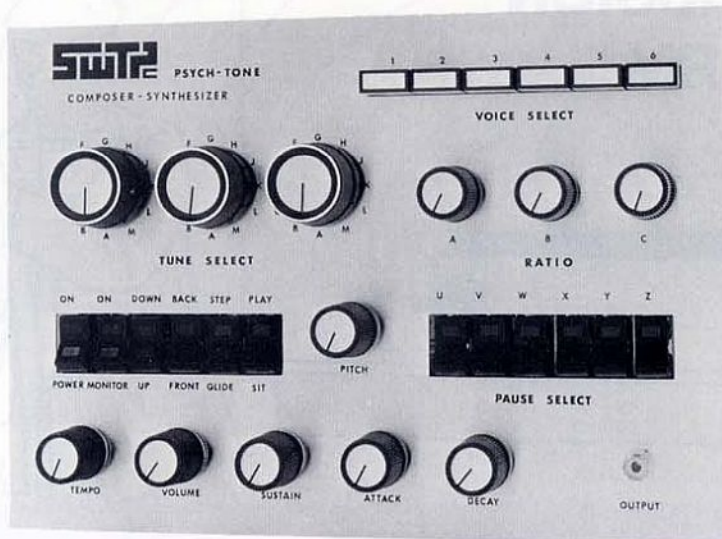
FET INPUT STAGE
 SHORT PROTECTED AMPLIFIER
 PICTORIAL ASSEMBLY INSTRUCTIONS
 BRUSHED FINISH FRONT PANEL

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

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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 "psuedo 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

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ULTRASONIC INTRUSION ALARM



- * EASY INSTALLATION
- * IMPOSSIBLE TO AVOID
- * AREA PROTECTION
UP TO 400 SQ. FEET
- * PROVEN "DOPPLER" TYPE DETECTION

SPECIFICATIONS

Size - 13 x 3 x 2 1/2	Operating Frequency - 40 KHz
Area Coverage -	Up to 400 Sq. Feet
Controls -	Sensitivity and remote reset if desired
Power Requirements -	117 Volts AC or 12 Volts DC
Outputs -	117 Volts AC or 12 Volts DC Available
1 Amp switch contacts	

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 two integrated circuits and four 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-1 Ultrasonic Alarm Kit - shipping weight 4 lbs. \$37.25

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SHORT-PROOF POWER SUPPLY

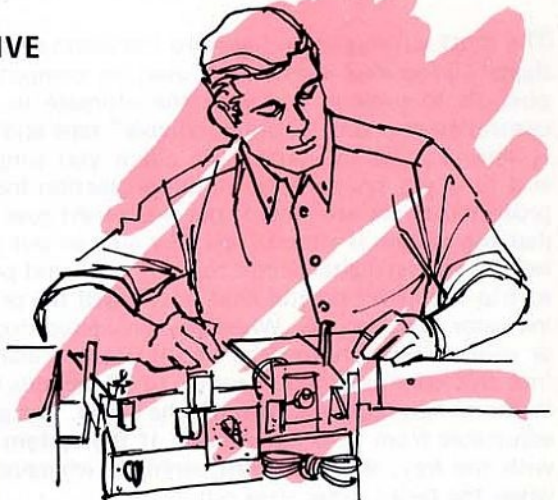
This high capacity variable voltage source not only will provide you with "rock stable" voltage for your experimental circuits, but will also provide protection against accidental shorts or circuit malfunctions. The over-current protection can be set for any amount of current that would be safe for your 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**

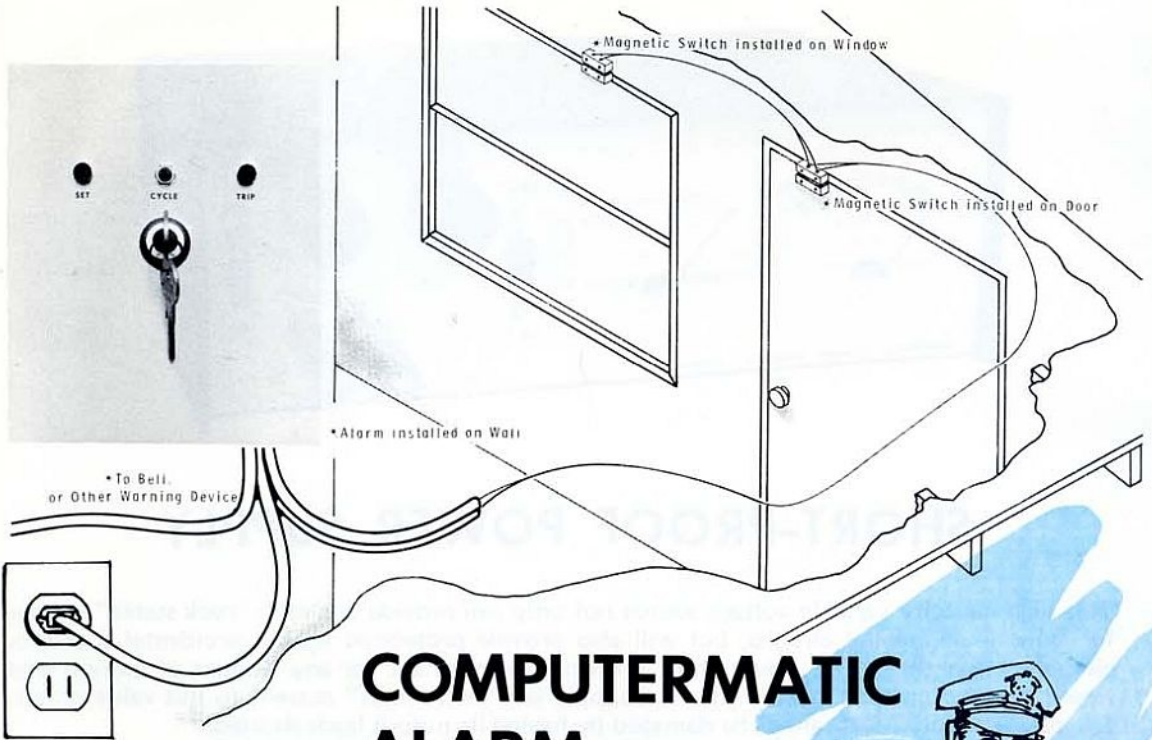
* **0 - 35 VOLTS DC AT UP TO 2.0 AMPS**



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

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COMPUTERMATIC ALARM

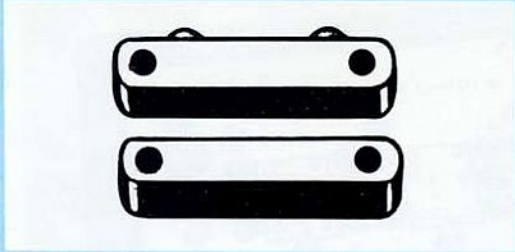
- * FULLY AUTOMATIC - JUST TURN A KEY
- * PROFESSIONAL TYPE EQUIPMENT
- * THE ULTIMATE IN SWITCH & TAPE SYSTEMS

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 2.0 lbs.----- \$19.50

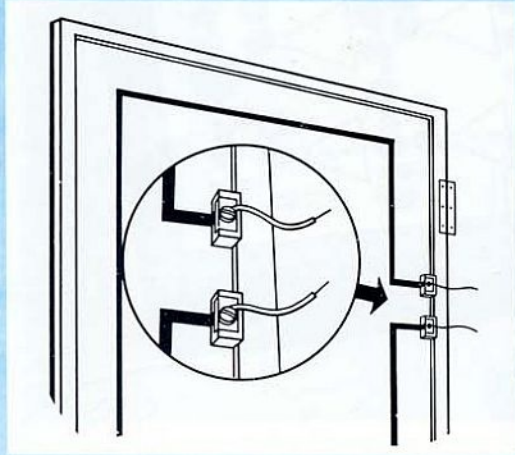


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MAGNETIC SWITCHES - for doors, or windows. Operate with up to 1/2 inch gap between switch and magnet. Potted reed type switch cannot be damaged by moisture, or corrode. Magnet will operate switch from any side. 2 3/15 x 1/2 x 1/2.

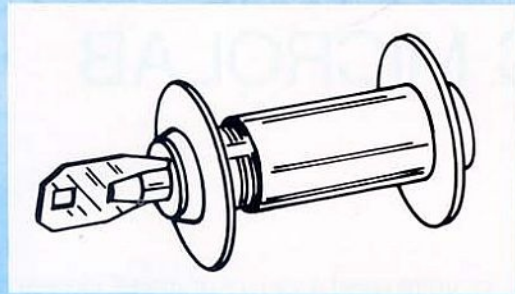
REE ----- \$ 2.35 ea.



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.

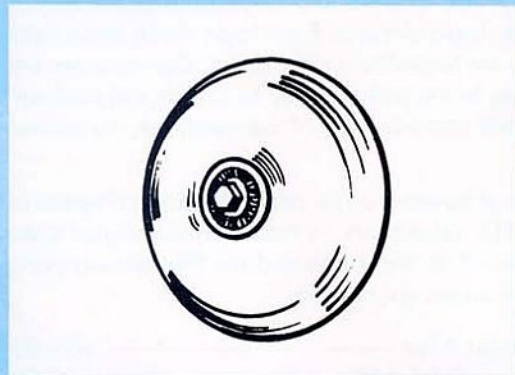
Lead Tape - 1 lb. spool ----- \$ 2.55

Take-off Blocks ----- .25



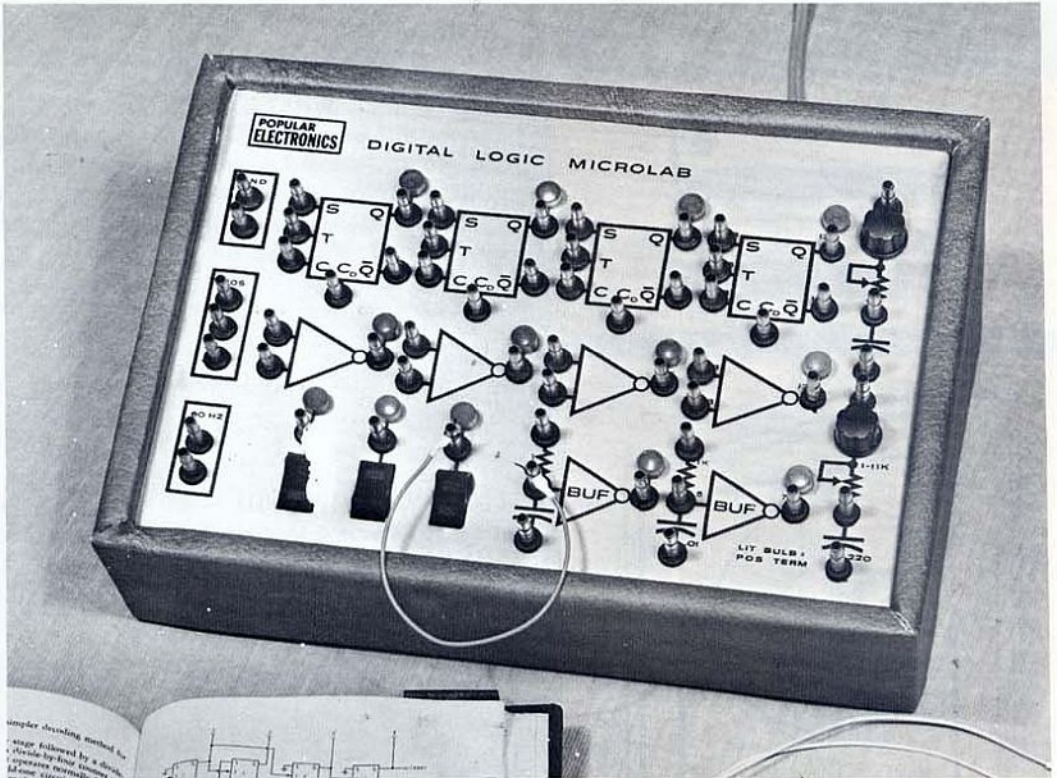
SHUNT LOCKS - with sleeve and two washers. Make it possible to enter a protected area without tripping the alarm. Furnished with two round type keys. These locks are much more difficult to pick than flat key types.

SSL ----- \$ 5.50 ea.



UNDERDOME BELL - 8 inch, 6 Volt DC bell with heavy gauge steel gong. This bell will operate directly from our #MSA, or #CA alarm systems. Will operate from standby battery if power line is cut.

UDB----- shipping weight 3.0 lbs ---- \$ 11.25



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

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BEACHCOMBER

- * VERNIER TUNING
- * MATCHING SEARCH LOOP
- * SHIELDED OSCILLATOR COIL

Treasure hunting can be enjoyed by people of all ages. Try your luck with our Beachcomber in your own back yard, at the beach, or while visiting historic sites. Our simple single-loop beat-frequency locator will detect coins buried up to 6 inches deep and larger objects at depths up to 2 feet. The Beachcomber tells you where to dig. Perhaps you will find something truly valuable: coins or rings.

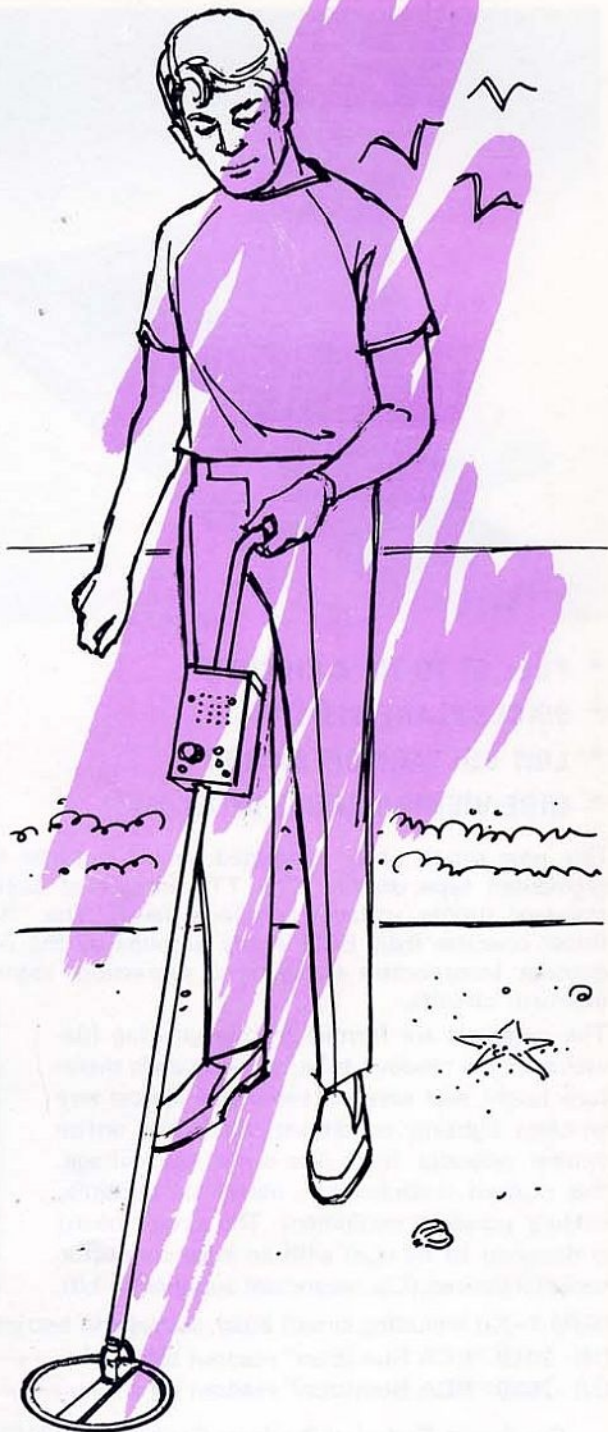
The five transistor circuit now includes a new vernier tuning system and a shielded oscillator coil. The Beachcomber operates 6 to 8 hours on a standard 9 Volt transistor radio battery. Our kit now includes a finished, ready to connect, molded six inch search loop. This rugged well insulated search loop insures maximum sensitivity and minimum drift problems with your detector. Search oscillator frequency changes that occur when the loop passes over metal, are indicated by a change in the pitch of the audio beat note from the built in speaker. The high gain audio amplifier produces a loud, easy to hear, beat note at low frequencies where detection sensitivity is greatest. The oscillator circuits are well isolated from each other and have little tendency to lock into a zero beat condition. The detector will only produce an output at the proper tuning point, so there is no chance of accidentally selecting an unstable "Harmonic" tuning point. Note the low cost for this kit.

#136-XC Metal Detector Kit - All electronic parts, punched chassis and finished search loop. Less handle and battery. Shipping weight 2 lbs. \$23.75

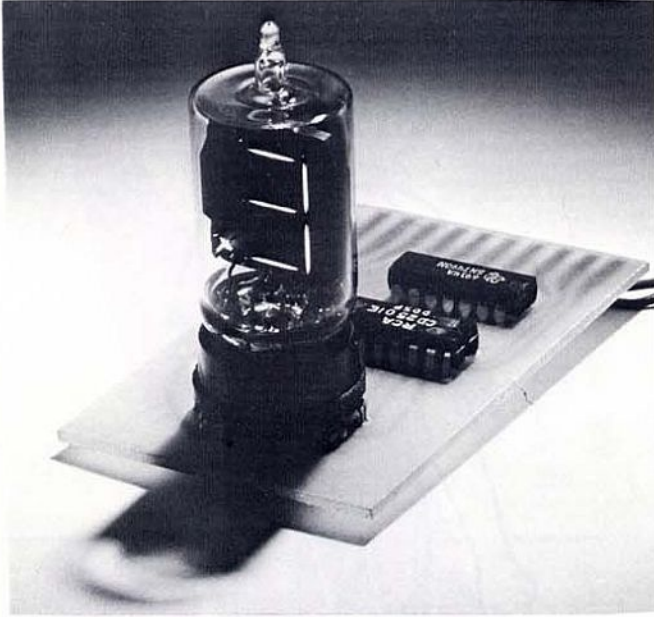
SPECIFICATIONS

Beat Frequency Detector	Single Loop
Operating Frequency	Approx. 700 KHz
Search Loop Size	6 Inch Provided
Weight	1 1/2 lbs. Complete With Search Loop

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



NUMITRON READOUT DECADE COUNTER



- * FULL 0° TO 70° C CIRCUITS
- * SINGLE-PLANE DISPLAY
- * LOW VOLTAGE OPERATION
- * WIDE VIEWING ANGLE-UP TO 150°

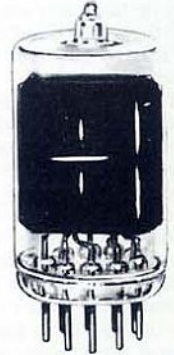
Our new simple, two integrated circuit, counter for use with the popular segmented type display. The TTL integrated circuits are compatible with standard supply voltages and logic levels. The "RCA" CD-2501E decoder driver operates from BCD inputs supplied by the 7490 decade counter. The decoder incorporates excess zero suppression, segment testing and segment intensity circuits.

The numerals are formed by the glowing filaments in the readout tube; the display is therefore bright and easy to read under almost any ambient lighting conditions. Since the entire system operates from the same low voltage, this readout is particularly useful for portable, battery powered equipment. The circuit board is designed to be used with an edge connector socket if desired. (Connector not supplied in kit).

NUM-1 - Kit including circuit board, socket and two integrated circuits. Shipping weight - 8 oz. \$13.50
 DR - 2010 "RCA Numitron" readout tube 5.95
 DR - 2020 "RCA Numitron" readout tube 3.95



DR 2010
0 through 9
with decimal point

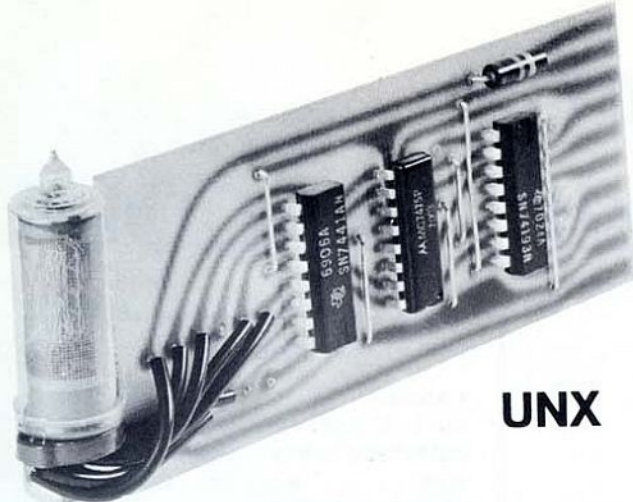


DR2020
Plus-Minus sign
and numeral 1

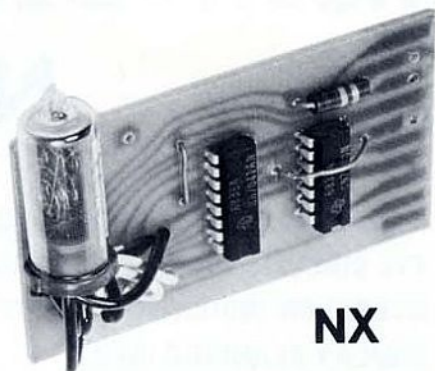
SPECIFICATIONS

Counting Speed:	Up to 20 MHz
Input Levels:	2.2 Volts for logic "1" 0.6 Volts for logic "0"
Output Levels:	2.4 Volts Min. for logic "1" .4 Volts Max. for logic "0"
Power Input: Circuits -	5.0 Volts \pm 5% @ 50 Ma.
Display -	3.5 to 5 Volts @ 120 Ma. Max.
Circuit Board:	G-10 Fiberglass 1 3/4 x 3

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



UNX



NX

NIXIE® READOUT

DECADE COUNTING UNIT

SPECIFICATIONS

Supply Voltage:	+5 Volts @ 50 Ma. +170 Volts @ 4.0 Ma .
Input to insure logic "1" at all inputs:	2.2 Volts Minimum
Input to insure logic "0" at all inputs:	.6 Volts Maximum
Typical Toggle Frequency:	18 MHz
Output logical "1" voltage:	2.4 Volts Minimum
Output logical "0" voltage:	.4 Volts Maximum
Maximum input Voltage (Signal):	5.5 Volts

NOW TWO VERSIONS - both with plug-in readout
NEW - UP Down counter with storage now available
AVAILABLE in both decade and Modulo-Six versions

UP TO 20 MHz operation on standard and
32 MHz operation up-down type
SIMPLE - MINIMUM NUMBER OF PARTS
TTL CIRCUITS REQUIRE NO SIGNAL
CONDITIONING, OR SHAPING.

Now our Nixie readout counter is available in two versions. The standard up counter without storage and our new up-down counter with storage. Both at new low prices. Both use Series 74 TTL circuits, both now use plug-in type readouts. The board may be used with an edge connector, or wired.

Use the standard series for clocks and applications where up counting only will be done and storage is not necessary. Use the new up-down counter where it is necessary to count and also to subtract counts. Also used in application where storage is desirable. This feature allows the readout to hold a reading until commanded to switch to the next. Make possible flickers free, nonblinking displays.

Nx - Decade Counter - Standard type, or Nx-6 Modulo-Six (specify type) 5 oz. \$15.00

UNx - Decade Counter - Up Down, Storage type. 7 oz. \$25.00

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

® Registered trademark Burroughs Corp.

MULTI - DECADE NIXIE[®] READOUT

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

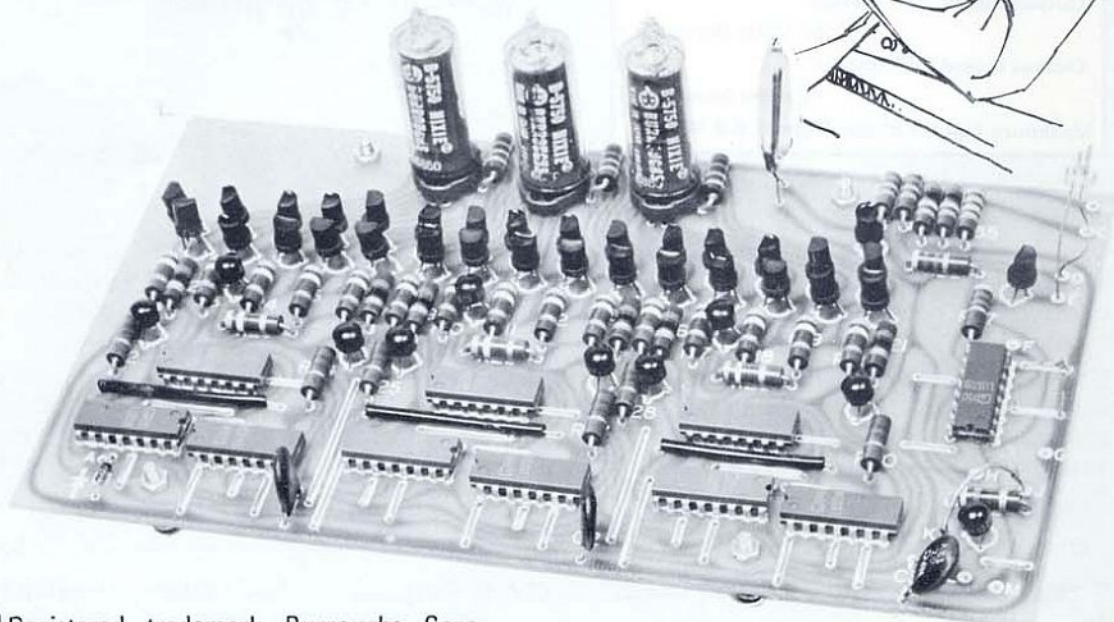
A convenient one board version of our Nixie[®] decimal counter. One board has all the circuits necessary for 3 complete decades and a "One". All that is needed for a direct digital readout system is on the board and ready to bolt into your system. In addition to the counting circuits there is provision 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. ----- \$49.50

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.

These circuits are useful building blocks for custom digital instrumentation.

Line reference time base for use with 3 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 7/8 x 3 1/2 .

TB-1 ----- \$15.50

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

TB-2 ----- \$ 17.50

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 7/8 x 2 1/4. Requires 5.0 Volts @ 200 Ma.

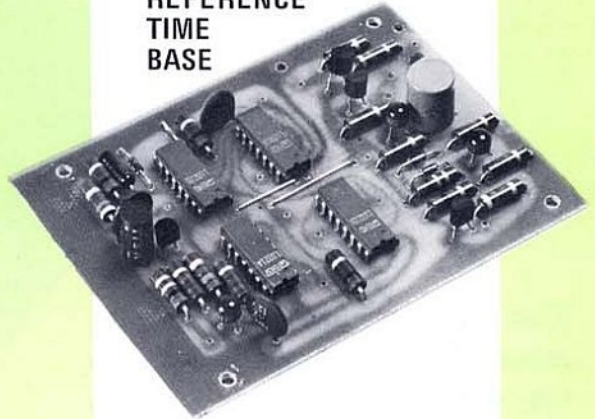
S-410 ----- \$14.95

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.

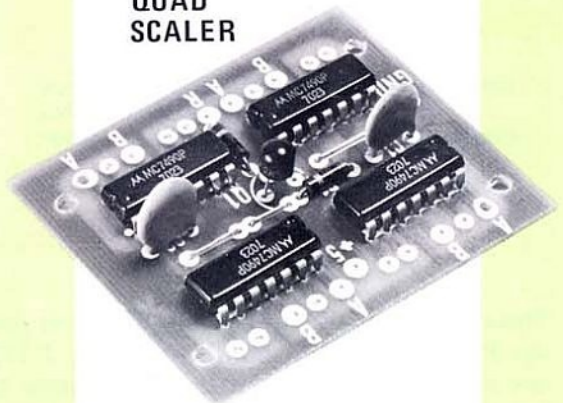
S-106 ----- \$ 14.90

TIME BASES-SCALERS

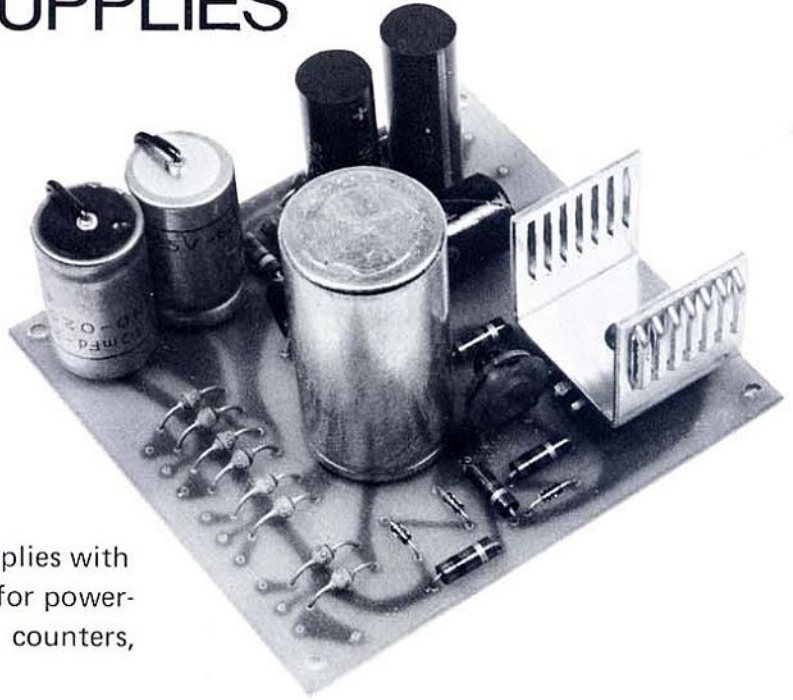
LINE REFERENCE TIME BASE



QUAD SCALER



DIGITAL EQUIPMENT POWER SUPPLIES



Two regulated, power supplies with adjustable voltage output for powering our various digital counters, time bases, etc.

SPECIFICATIONS - P 169

Voltage Output: 3.5 to 5.5 volts DC @ 1.5 Amps,
200 volts @ 30 Ma.

Regulation: $\pm 2\%$ on low voltage

P-169. Shipping weight - 4 lbs ----- \$11.55

SPECIFICATIONS - P 170

Voltage Output: 3.5 to 5.5 volts DC @ 1.0 Amp.
200 volts @ 30 Ma.

± 10 volts @ 100 Ma.

Regulation: $\pm 2\%$ on low voltage

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

These power supplies will supply the stable ripple free voltage needed for reliable operation of our #148, MNX, NX, and SEG counters. P-170 includes a ± 10 volt supply for systems such as our new digital instrument that incorporate operational amplifiers in the circuit. P-169 will power up to eight NX counters, or up to four #148 counters. These supplies may be adjusted for either 3.6, or 5.0 Volt output and may therefore be used with either our RTL, or TTL projects. Kits include circuit board, transformer and all parts needed for the supply, as shown in photo.

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---6 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. -----\$ 75.00

EC-2 Electronic Clock - Hours, Minutes & seconds-less cabinet--shipping weight 6 lbs.--\$100.00

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

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.

174 Two-Tone Alarm ----- shipping weight 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.

181 No-Bounce Pushbutton ----- shipping weight 2 lbs. ----- \$ 5.90

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.

182 Logic Demonstrator ----- shipping weight 2 lbs. ----- \$ 8.25

BINARY COUNTER -

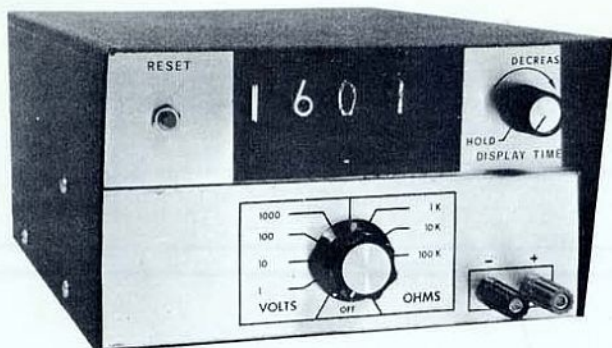
This three IC, four transistor project demonstrates the binary counting system. Each time the count button is pushed the counter advances to the next number in the "binary coded" decimal (BCD), or 8421 system. The circuit includes signal conditioning, counting and lamp driving circuits. This is another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

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 \bar{Q} states.

184 Flip Flopper ----- shipping weight 2 lbs. ----- \$ 8.50



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. ----- \$49.50

®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 ----- \$34.95

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

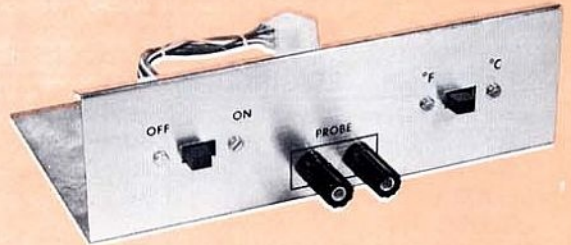


DIGITAL-THERMOMETER

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° F RANGE
- * INSTANT CHANGE FROM °C TO °F
- * 60 SECOND MAXIMUM RESPONSE TIME



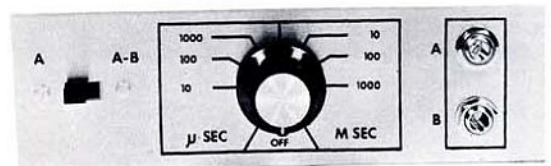
TIME PERIOD PLUG-IN

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	40487	\$.30
2N1302	.50	40488	.22
2N2430	.57	40489	.28
2N3055	2.05	40532	1.78
2N3228	1.62	40668	1.58
2N3528	1.63	C106Y2	.90
2N3611	1.15	L14B (2N5777)	1.45
2N3877	.47	MJ802	7.65
2N4400	.60	MJ4502	8.25
2N4402	.60	MJE2955	2.90
2N4870	.75	MJE3055	1.50
2N4871	.68	MPS2923	.43
2N4919	1.90	MPS3638	.45
2N4922	1.48	MPS6521	.90
2N5129	.25	MPS6523	.97
2N5139	.22	MPS6566	.57
3N139	2.89	MPV131	.79
40234	.42	MPU131	1.60
40396	.83	SS1123	1.35
40407	.81	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
MC7400	1.29
MC7402	1.48
MC7404	1.60
MC7441	7.30
MC7447	7.47
MC7475	
MC7490	4.85
MC74192	11.25
MC785P	1.25
MC789P	1.08
MC791P	2.35
MC799P	1.08
MC1303P	5.25
NE565K	11.00
N5111A	2.65
uL900	.80
uL914	.80

DIODES AND RECTIFIERS

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

MISC.

DR-2010-Numitron	5.95
B5750-Nixie	6.75
ZM-1000	5.75
Socket (AM-1000)	.60
MFT-110	3.50

SOUTHWEST TECHNICAL PRODUCTS CORPORATION

**219 W. RHAPSODY
SAN ANTONIO, TEXAS 78216**

Dear Electronic Kit Builder,

Once again we are happy to present our collection of electronic projects. In this edition there are several new and unique projects that as usual are exclusive, or were first offered by Sw.Tech. Prod. Our "Universal Tiger" amplifier has been joined by the "Plastic Tiger", a new medium power amplifier for similar design using economical plastic output transistors. All of the features and the superior performance of the larger amplifier can now be had for a little over \$50.00. We also are offering for the first time anywhere a power amplifier with the new "Signetics -540" integrated circuit - power driver. This amplifier offers excellent performance in the 20 Watt class at a price that most find hard to believe.

The Psych-Tone Music Synthesizer and the Digi-Viewer integrated circuit tester are also offered for the first time in our catalog. The Psych-Tone must be heard to be believed. This instrument could well join the Theremin in the history of electronic music. The Digi-Viewer although not as unique as some of our kits, is one of the most handy things around if you are testing digital circuits. Our price for the instrument is by far the most reasonable that we have seen. The SCA detector using a phase locked loop has now proven to be one of the best and least expensive circuits of this type around.

Sw. Tech. Products kits are supplied only with new first quality parts and fiberglas circuit boards. We will guarantee that you cannot purchase the same parts, new from any distributor for less than the cost of one of our kits. Surplus or grade out parts are never used in our kits and we do not attempt to compete with such merchandise. As always we are happy to refund your money if you are not satisfied, provided the kit is returned unassembled and complete. We maintain a complete repair department to help you with problems if they develop after construction. Most of our later kits are now supplied with pictorial assembly drawings and step-by-step instructions. We will not guarantee that your gray headed old mother who has never seen a soldering iron could assemble one of these, but anyone with an elementary knowledge of electronics should have no problems

We are continually working on new ideas and would be happy to consider any suggestions from our friends and customers.

Daniel E. Meyer, President

