

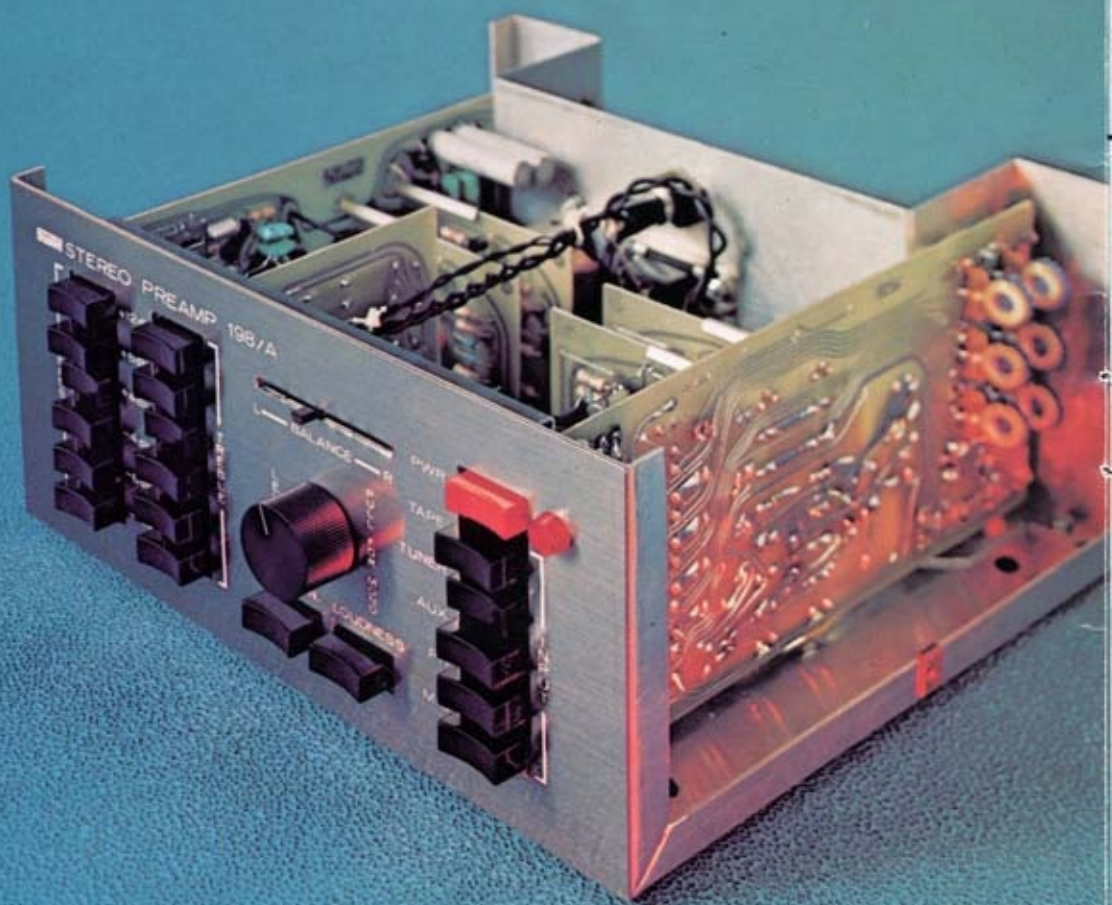
SWT



Southwest Technical Products Corp.

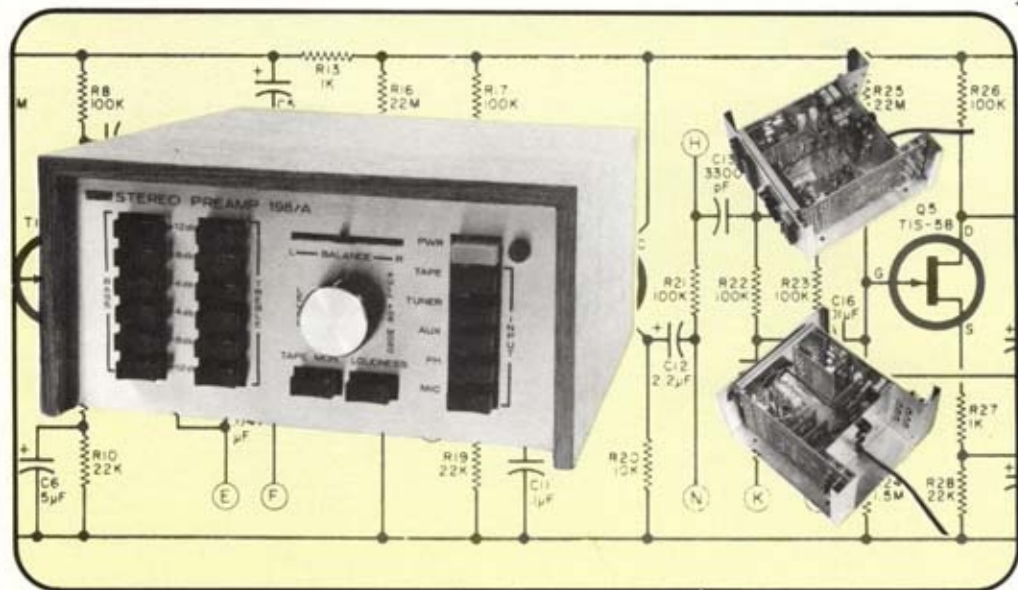
219 W. RHAPSODY

SAN ANTONIO, TEXAS 78216



STEREO PREAMP
198/A

BALANCE
L R
POWER
TAPES
TUNING
AUX
LOUDNESS
M



198/A PREAMP

PUSHBUTTON TONE CONTROLS

GAIN MODULE DESIGN

MOTHER BOARD CONSTRUCTION

**SELF POWERED—WILL
WORK WITH ANY AMPLIFIER**

We are proud to offer a preamp and control center that is equal in quality and performance to our new "Tiger .01" amplifier. Both input and tone control settings are pushbutton switch selected. This makes it possible to get the exact amount of compensation you want every time, just as in professional studio equipment. When no compensation is wanted, the amplification is absolutely flat.

All controls have been designed to make their function as obvious as possible, so that the chances of a mistake in settings will be minimized. Loudness compensation and tape monitor functions are provided.

All gain needed is provided by four of our plug-in #195 op amp circuits. These plug into two "mother boards" that contain all the switching and equalization components. The result is vastly simplified wiring and easy construction.

The kit is complete with a brushed gold finished front panel and the wood grain finished cover shown. Two switched convenience AC receptacles are provided on the back.

#198A Preamp Kit \$74.50 Ppd in U.S.

SPECIFICATIONS

Sensitivity Phono and Mic 2.0 mv for 1 Volt
Others 100 mv for 1 Volt output
Maximum Output. 5.0 Volts
Freq. Response Flat ± 1 dB 10 to 100,000 Hz
Distortion Less than .05% Harmonic or IM
Noise Phono and Mic 65 dB down
All others 70 dB down
Size 9 5/8 wide x 5 high x 10 3/8 deep
Shipping Weight. 6 lbs.



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



TIGERSAURUS 250

The most powerful amplifier we make for those who want "beastly" amounts of power. We didn't cut any corners, or skimp on any of the parts that went into the design of this animal. The power transformer is a huge 24 pound chunk of iron and copper. The output stage uses eight (8) 200 Watt transistors with a combined rating of 360 Volts @60 Amps. The heatsink for this output stage has over 550 square inches of heavy, efficient extruded aluminum fins. In most applications, if there is a free air circulation around the case, no external fans or blowers should be required.

The circuit features our unique all push-pull system and completely complementary output stage. The driver is the same cross coupled, complementary differential type as used in our famous "Tiger .01". The kit also features a large three inch lighted output level meter and a robust 25 amp rated rectifier in the power supply. The front trim panel is dusky chrome finished.

For those who are using speakers that can take this kind of power, or for those really big PA jobs this is "THE" amplifier to use.

#210 TIGERSAURUS Amplifier Kit
Shipping weight 32 lbs. . . . \$154.50 PPD in U.S.

SPECIFICATIONS

250 Watts—4 Ohms, or 200 Watts-8 Ohms minimum RMS, with less than 0.1% Total Harmonic Distortion 20-20,000 Hz.

IM Distortion less than .03%
Damping factor Over 100
Hum and noise —95 dB
Sensitivity 2.0 Volts RMS
Size 18 wide x 5 high x 11 deep
Shipping weight 32 lbs.





TIGER .01 207/B

A new standard of performance. We know of no amplifier now available that can match the performance of our new "Tiger .01". Our new completely push-pull circuit with cross coupled push-pull feedback makes possible an IM distortion rating of less than .01% up to rated output. This is easily ten to one hundred times better than many so called Hi-Fi amplifiers. Our conservative approach of using low open loop gain and only some 40 dB of negative feedback results in an amplifier with very clean overload and clipping characteristics, no evidence of transient intermodulation distortion, and overall superior sound quality.

Test reports by two of the leading audio publications confirm these facts.

The amplifier is designed to be used as either a single channel unit for sound system and instruments, or in any multiple needed for stereo or quad systems. The front panel is quarter rack size to allow relay rack mounting of up to four of these units in a standard 19 inch relay rack.

The circuit features volt-amp and fuse protection, plus an over heat thermostat. An output meter is provided on the front panel as shown. The perforated metal cover is included in the standard kit.

#207/B Complete Kit

Shipping Weight 12 lbs. . . . \$ 99.50 PPd in U.S.

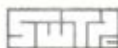
#207/A Assembled Amplifier

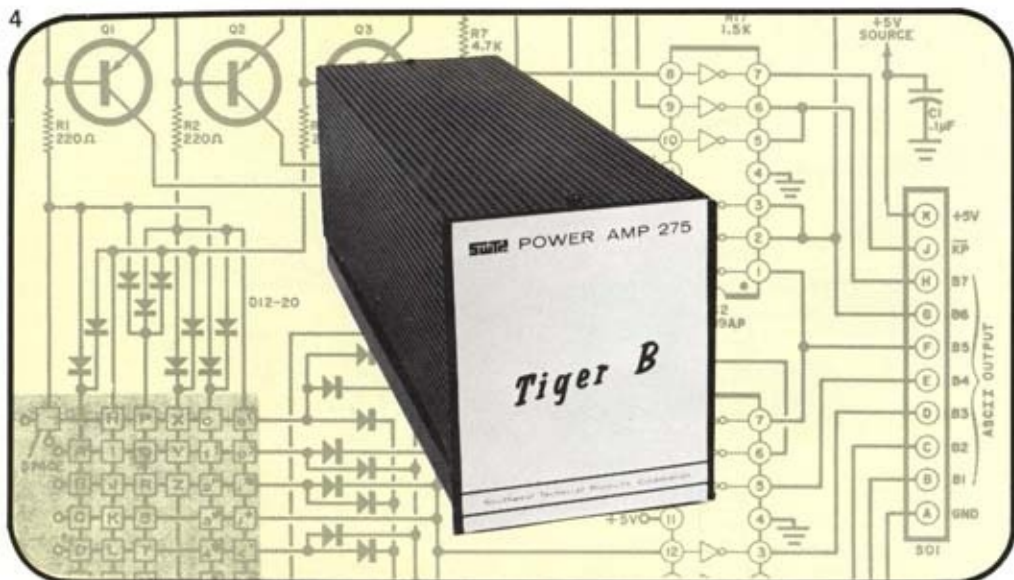
Shipping Weight 12 lbs. . . . \$125.00 PPd in U.S.

SPECIFICATIONS

60 Watts, Minimum RMS, into 4, or 8 Ohms with less than .05% Total Harmonic Distortion from 20-20,000 Hz.

IM Distortion less than .01%
 Damping factor Over 100
 Hum and noise -90 dB
 Sensitivity 1.0 Volt RMS
 Size4" wide x 5 high x 15 deep
 Shipping Weight.12 lbs.





UNIVERSAL TIGER "B"

The latest version of our famous "UT" amplifier. We have added our complementary differential input circuit to this rugged old standby and dressed it up in a pretty new box; but, otherwise, it is still the same all purpose basic amplifier. The "Universal Tiger" is cleaner than the majority of hi-fi amplifiers being offered. The cost is low enough to use it in PA, organs, background music, and sound system of all types. The package size allows mounting of four of these amplifiers side-by-side in a standard 19 inch relay rack.

The kit has step-by-step instructions, wiring charts and pictorial wiring diagrams. All parts are our usual first quality, standard number parts, made by the world's leading manufacturers. The majority of the construction is on beautiful fibreglass circuit boards.

The circuit features our outstanding complementary differential input system and current drive to fully complementary output devices. The circuit has volt-amp output

protection, speaker fuse, power supply and line fuses. Compare our state of the art circuits to anything else available.

For those who want more features, we offer an accessory kit that allows addition of a front panel switch, overheat indicator and output meter—along with a level control on the rear panel.

We think that in "Tiger B" we have one of the most versatile amplifiers made; and, the price has to be the bargain of the decade.

#275 Universal Tiger Amplifier Kit
(single channel) \$79.50 PPd in U.S.

#275A Assembled \$99.50 PPd in U.S.

#AC-275 Accessory Kit
(output meter, switch, etc.) . . \$ 7.90 PPd in U.S.

SPECIFICATIONS

90 Watts into 4 Ohms, 75 Watts into 8 Ohms Minimum RMS with less than 0.1% Total Harmonic Distortion from 20-20,000 Hz.

IM Distortion less than .03%
Damping factor Over 100
Hum and Noise -90 dB
Sensitivity 1.0 Volt RMS
Size 4 1/4 wide x 5 high x 15 deep
Shipping Weight 12 lbs.





entire circuit, except for the output transistors, is built on a plug-in fiberglass circuit board for extra easy construction. The usual pictorial wiring diagrams, wiring charts and step-by-step instructions are provided in the kit.

Compare the specification of this amplifier with any other amplifier offered in this power range. Compare the features, and then compare the prices.

#215 Stereo Amp. Kit \$79.50 Ppd in U.S.

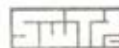
SPECIFICATIONS

25 Watts, Minimum RMS, per channel into 8 Ohms with less than 0.05% Total Harmonic Distortion from 20-20,000 Hz.

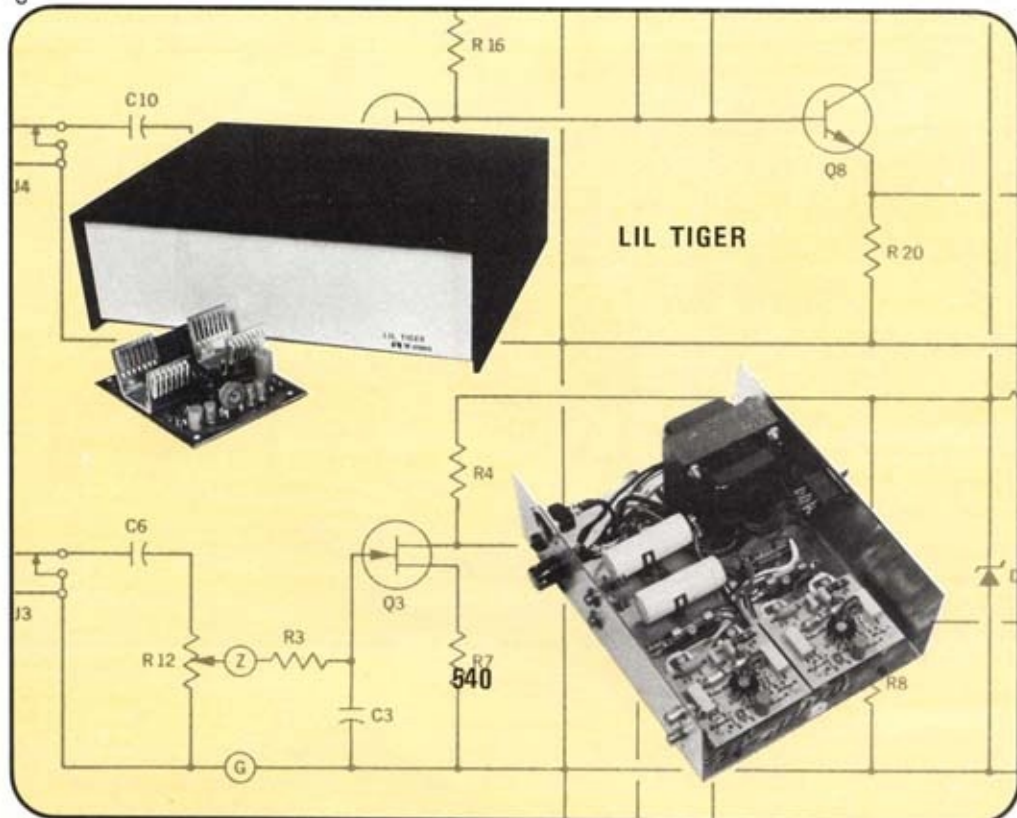
IM Distortion	less than .01%
Damping Factor	Over 100
Hum and Noise	85 dB
Sensitivity	0.75 Volt
Size	4 3/8 wide x 4 1/2 high x 13 1/2 deep
Shipping Weight	9 lbs.

215

Our #215 amplifier is for those who want the superior performance of "Tiger .01" but who do not need, or want 60 Watts per channel. The #215 has the same complementary differential, all push-pull circuit as "Tiger .01" and the same type triple in the output stage. The only difference is in the maximum power output. You get two channels of super clean power in a neat package, with output meters for each channel. The



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



LIL TIGER

15 Watts, Minimum RMS, per channel into 8 Ohms with less than 0.5% Total Harmonic Distortion from 20-20,000 Hz.

IM Distortion less than 0.5%
 Hum and Noise -80 dB
 Sensitivity 1.5 Volt
 Size 9½ wide x 3 high x 8 deep
 Shipping Weight 7 lbs.

540

15 Watts, Minimum RMS, per channel into 8 Ohms with less than 0.5% Total Harmonic Distortion from 20-20,000 Hz.

IM Distortion less than 0.5%
 Hum and Noise -80 dB
 Sensitivity0.5 Volt
 Size 9½ wide x 3 high x 8 deep
 Shipping Weight 7 lbs.

In the 20 Watt per channel class we offer you a choice of two amplifiers. For those who have a situation where only a single polarity of supply voltage is available, or who want to build a "classic"; we have Lil Tiger. For those who want the latest design, we have our "540" with IC driver system. Both amplifiers have excellent characteristics and both are packaged in the same chassis with the same power transformer, so the choice of design is yours. Both amplifiers use complementary output transistors and both are constructed on fibreglass circuit boards.

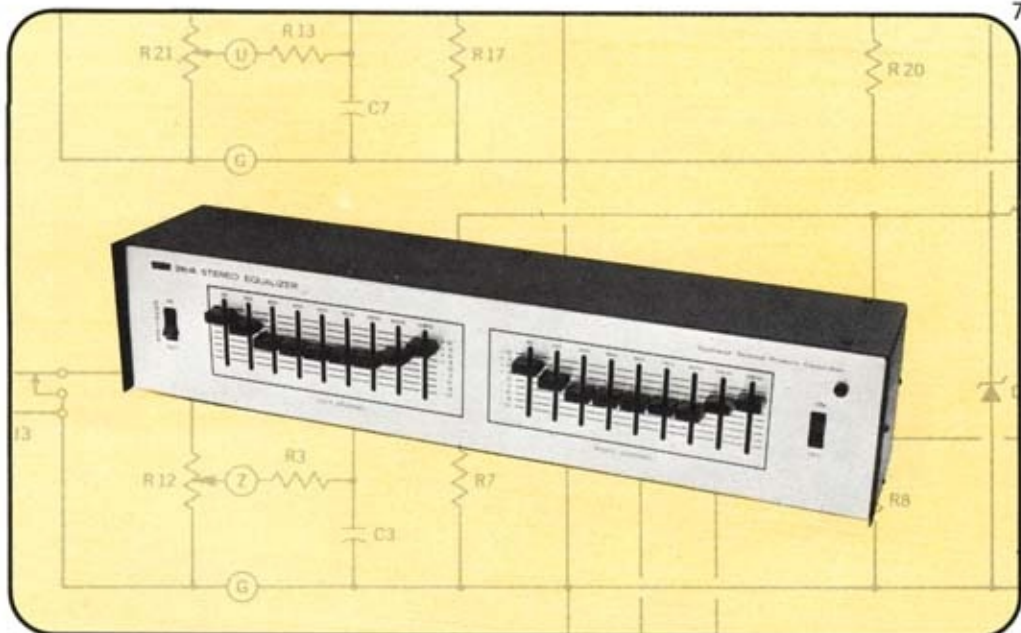
Step-by-step assembly instructions and pictorial wiring diagrams are included in the kits. Construction is open for easy access to parts being assembled.

#140 or #540 Amplifier Kit (specify) one channel
 Circuit Board and Parts only
 Shipping Weight 10 oz \$11.95 Ppd in U.S.

#140 or #540 Complete Stereo Amplifier (consisting of two of the above kits, chassis and power supply)
 Shipping Weight 7 lbs \$41.25 Ppd in U.S.



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



STEREO OCTAVE EQUALIZER

NINE INDEPENDENT CONTROLS PER CHANNEL

ONE OCTAVE RESPONSE PER CONTROL

UP TO ± 12 dB CORRECTION

The one everyone has been asking for. Our octave equalizer is finally ready. It may have taken a while; but, we wanted to be able to offer an equalizer that was not only outstanding in performance but one that was also reasonable in cost.

As shown in the photograph, our equalizer has nine (9) independent single octave controls per channel. Each control can either boost or cut frequencies in that particular octave up to ± 12 dB. Controls for each channel are separate; so the equalizer can be used to adjust each speaker exactly correct with

no compromises due to ganged controls for the two channels.

The filter circuits are operational amplifier active filters. There are no inductors to pick up hum or cause ringing problems. This equalizer can be added to your system between the preamp and amplifier, or it can be connected into the tape monitor system of your preamp.

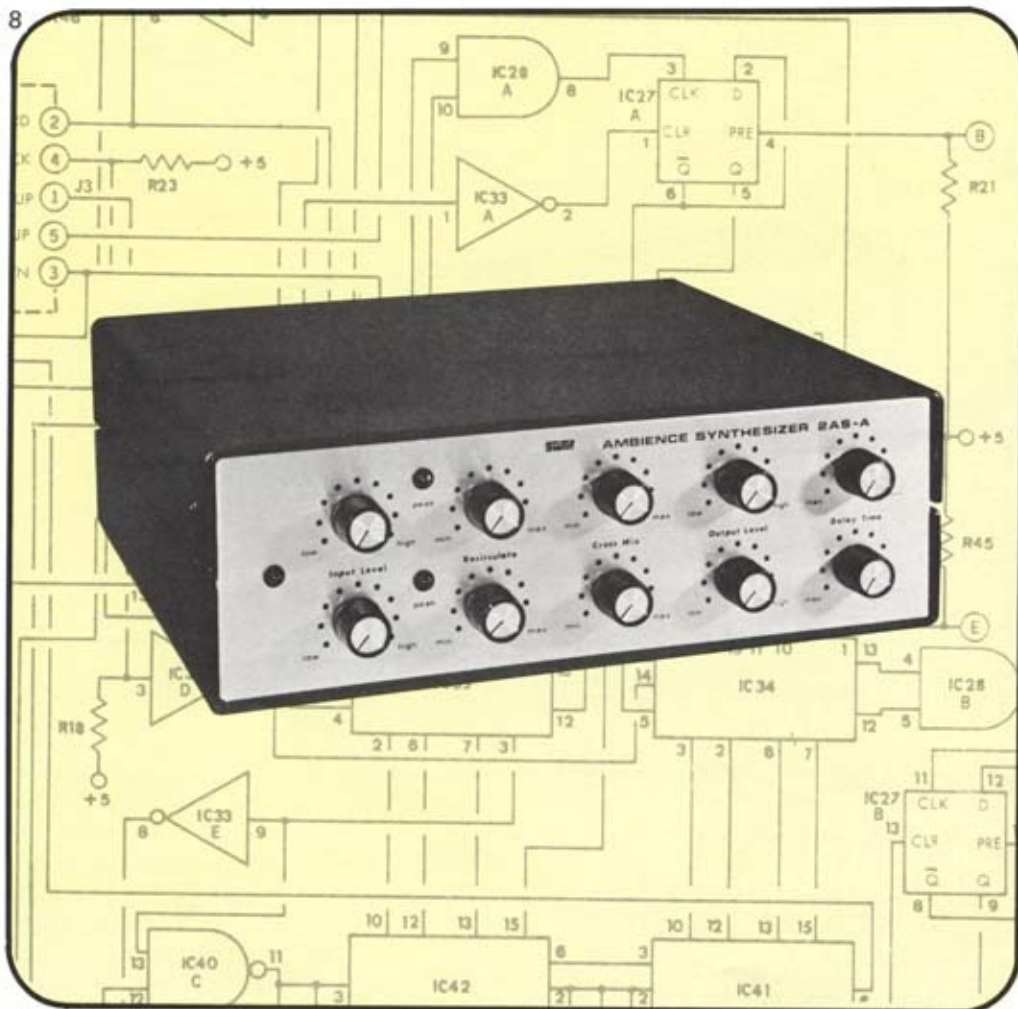
In the flat position, the frequency response is ± 1.0 dB from 5 Hz to 50 KHz. Distortion is typically less than 0.1%. An octave equalizer is the ideal way of compensating for room response. It also makes it possible to compensate for small recording problems that only a narrow band filter could correct. You can bring up weak mid bass, eliminate presence peaks, etc. without affecting the rest of the music.

Our equalizer comes in an all metal enclosure with a black vinyl covered top. The front panel is satin red-gold finished. The circuit is self-powered from its own internal power supply. 110-120 Volts AC 50-60 Cycles. Size: 21 $\frac{1}{2}$ wide x 4 7/8 high x 5 deep.

EQ-1 Octave Equalizer Kit. . . \$99.50 PPD in U.S.
Shipping Weight. 7 lbs.



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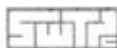
2AS-A AMBIENCE SYNTHESIZER

The 2AS-A Ambience Synthesizer recreates the feeling of space, or ambience that is present in a large hall due to echos from the sides and back of the room being delayed long enough in time to be distinguished from the direct sound from the stage. These delayed sounds give the feeling of size and space that is completely missing when a

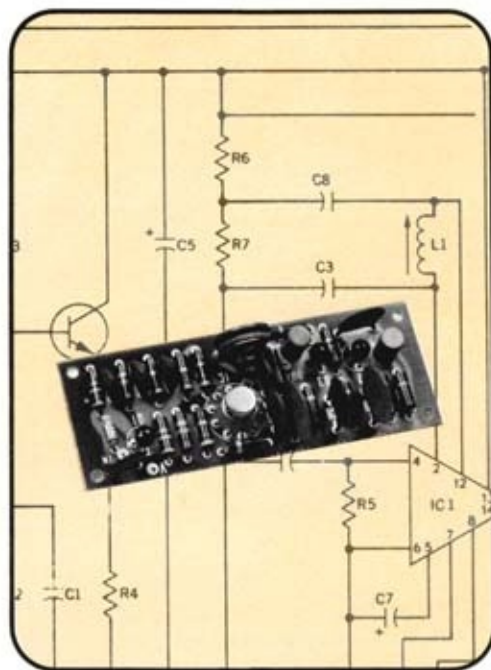
stereo system is used in a small room. The missing ambience sounds can be recreated by new low distortion semiconductor delay devices. By simply adding the 2AS-A and two small speakers and power amplifiers to your system you can restore much of the sense of spaciousness that music normally has when performed in a large hall.

The ambience synthesizer has controls to set the amount of delay, the amount of mixing of the two channels and level control. The kit is housed in a heavy aluminum chassis with a 120/240 Volt self-contained power supply. Size is 11½ x 10 x 4.

2AS-A Ambience Synthesizer
Kit \$250.00 PPD in U.S.
Shipping Weight. 9 lbs.



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



SCA MULTIPLEX ADAPTOR

Now get "Music Only" FM Programs

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 @ 100 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.

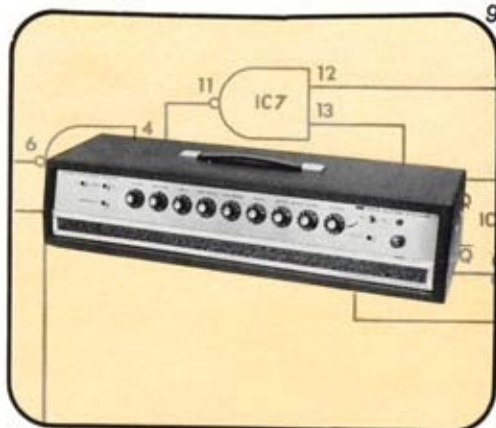
Note—Commercial use of this circuit for background music systems is illegal.

#PLLAS - Assembled

Shipping weight, 2 lbs \$29.95 PPd in U.S.

SPECIFICATIONS

Input Impedance 5 Meg. Ohms
 Output Level 1.0 Volt
 Detection Range 50-80 KHz



GUITAR and INSTRUMENT PREAMP

NEW "NOTCH" TYPE TONE SYSTEM
 THE ULTIMATE IN FLEXIBILITY

The #211 instrument preamp combines the latest in tone controls "the notch system" with active filters to give the ultimate in tone flexibility. The rejection notch makes it possible to greatly reduce the range of fundamental sound from your instrument and allow only the harmonics and overtones to be amplified. In addition, the active filter system allows you to completely eliminate bass, or treble frequencies; or to mix them together in any proportion. Here at last is a front end that can be used for almost any instrument. It is ideal for bass, but also has all the flexibility and features you need for lead instruments.

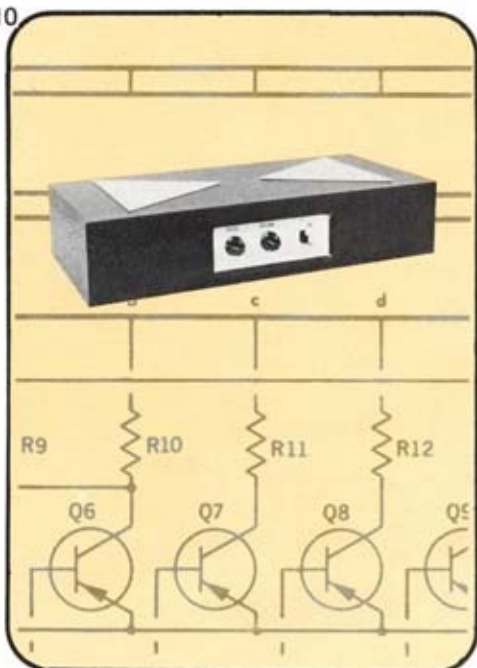
The #211 is powered by an internal supply requiring only 110-120 Volts AC. The preamp will drive almost any power amplifier, PA, or sound system. Maximum output is over 5.0 Volts RMS in a 10K load. The preamp is housed in a black vinyl cabinet with silver trim. The cabinet is finished and ready for the electronic portion of the kit. Cabinet is 25 x 6½ x 7½.

#211 Guitar and Instrument Preamp Kit

Shipping weight, 7 lbs. \$96.50 PPd in U.S.



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



THEREMIN ELECTRONIC MUSICAL INSTRUMENT

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—with cabinet & Antenna \$22.75 PPd in U.S.

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
Shipping Weight. 4 lbs.

**LESS THAN .01% DISTORTION
NOISE - 75 db BELOW FULL OUTPUT
± 1 db from 1 to 500,000 Hz
FOR PHONO CARTRIDGES, TAPE
HEADS, OR MICROPHONES**

195 PREAMP

We are happy to be able to offer a really outstanding preamp module for those who enjoy building up their own systems. The #195 preamp is designed using integrated circuit techniques; but, by using discrete components, much better characteristics are obtained. It is impossible to get really superior noise figures in an IC preamplifier due to the processing steps that are required, each of which tends to add noise. It is also impossible to get precise resistor values and difficult to make both NPN and PNP transistors on the same chip. Our seven transistor circuit is a basic op amp type system. You add the equalization needed for your application, just as you would with an IC' op amp module. The 2 x 2 fibreglass circuit board is designed so that it may be wired, or plugged into PC edge connectors. Distortion is less than .01% at any audio frequency. Suggested power supply is ±15 Volts DC @ 10 Ma, which may be obtained from any of our power amplifiers except #140.

#195 Preamp Kit
Shipping Weight 8 oz. \$ 8.75 PPd in U.S.



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

PSYCHEDELIA 11

III

"CLASSICAL" FILTER SYSTEM

4 - 800 WATT CHANNELS

WORKS WITH ANY SOUND SYSTEM

The best of its type. Psychedelia III is the only color organ available using a ramp triggering system. This unique system, pioneered by SwTPC, produces a light output that is closely proportional to the sound level in each channel. There are no circuits that produce a lag in light response, other than the lamps in the display itself. Lamp power is changed at a 60 per second rate.

The four channels are generated by op amp driving active filters. These filters have 12 dB per octave slopes to minimize crosstalk and bleed through from one channel to another. The input is transformer isolated and may be connected to any speaker terminals with safety. Due to the sensitivity of this circuit, only a fraction of a Watt is needed to drive the system and, as a result, the connection cannot possibly affect your sound system in any way.

Psychedelia III corrects automatically for variations in sound level. A compressor circuit with 40 dB range allows you to operate your system at any level from 5 Milliwatts to 50 Watts without readjusting the color organ controls. This completely eliminates the need to reset sensitivity every time you change the volume.

QX III - Four Channel Kit . . . \$44.95 Ppd in U.S.

QX III A - Assembled Kit . . . \$60.00 Ppd in U.S.

SPECIFICATIONS

Dimensions (circuit board w/parts) 8¼ x 5½ x 2½

Input Impedance: Stereo 100 Ohms

Monaural 50 Ohms

Bands: Low approximately 60 Hz - 240 Hz

Med. Low 240 Hz - 960 Hz

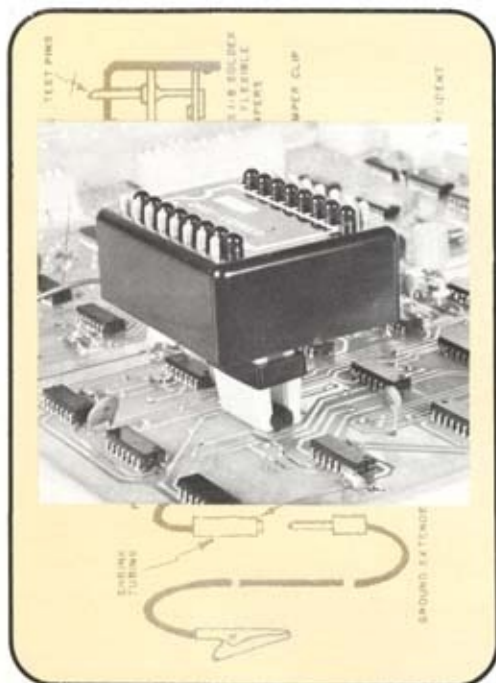
Med. High 960 Hz - 3840 Hz

High 3840 Hz - 15,360 Hz

Power Handling Capability . .800 watts of 117 Volt
lamps per channel

Circuitry Power Requirements 117 Volts 100 Watts

Shipping Weight 4 lbs



DIGI-VIEWER II

IN-CIRCUIT IC TESTER

CHECKS STATIC AND DYNAMIC OPERATION

COMPACT-CIRCUIT POWERED

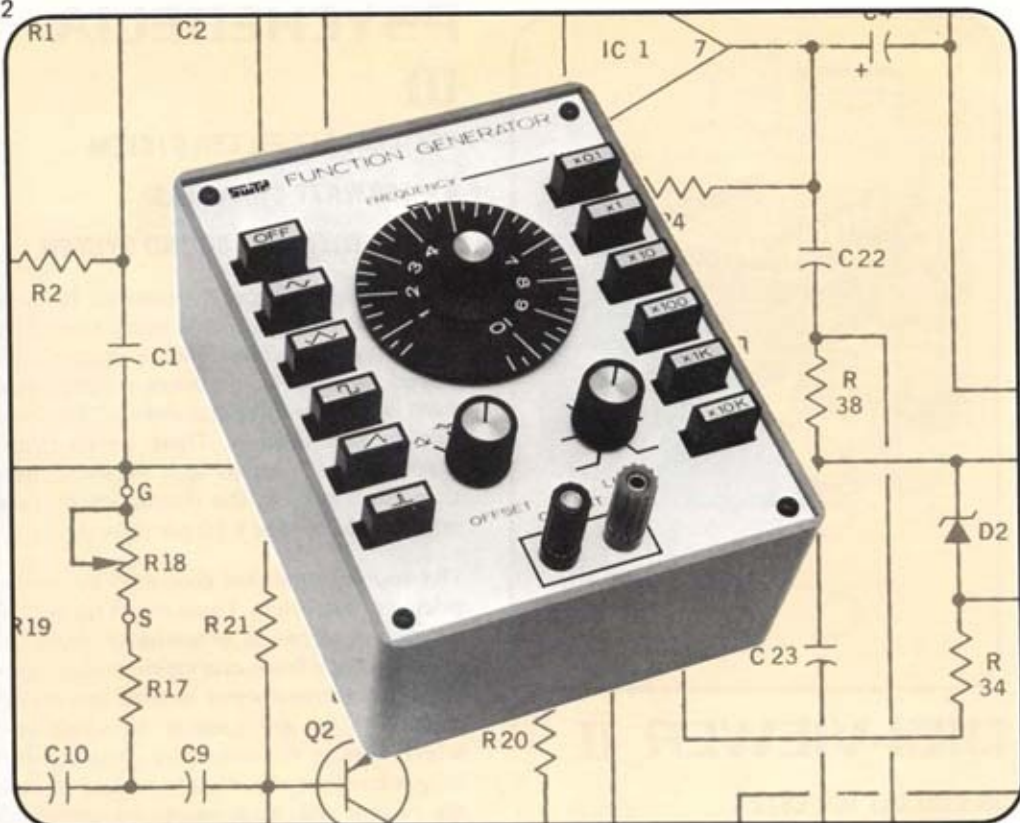
FAST LONG LIFE LED INDICATORS

In-circuit testing of digital IC's is now easier than ever with our new VU-II. This neat compact little instrument features LED indicators, automatic power connection, test points for each pin and a positive locking clip. No where else can you get a tester of this type with all of these features. The LED lamps show at a glance the logic state of each pin on the circuit being checked. The fast response of the LED indicator lamps makes it possible to also check high frequency dynamic response. The special locking type test clip insures safe-no slip-testing of the pack. Convenient test pins on the top of the case make simultaneous scope testing easy and safe.

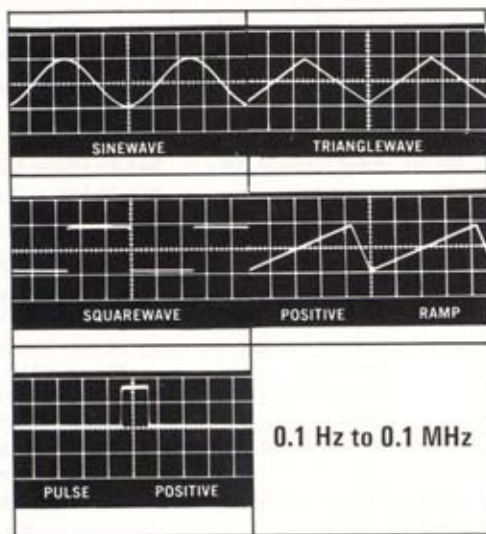
#VU-II Kit—as illustrated . . . \$19.50 Ppd in U.S.



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



FUNCTION GENERATOR



Now, thanks to IC technology, everyone can afford one of these versatile waveform generators. This is the ideal general purpose signal generator. Use it for checking audio equipment, digital circuits, sweep circuits, or anywhere you need a variety of waveforms.

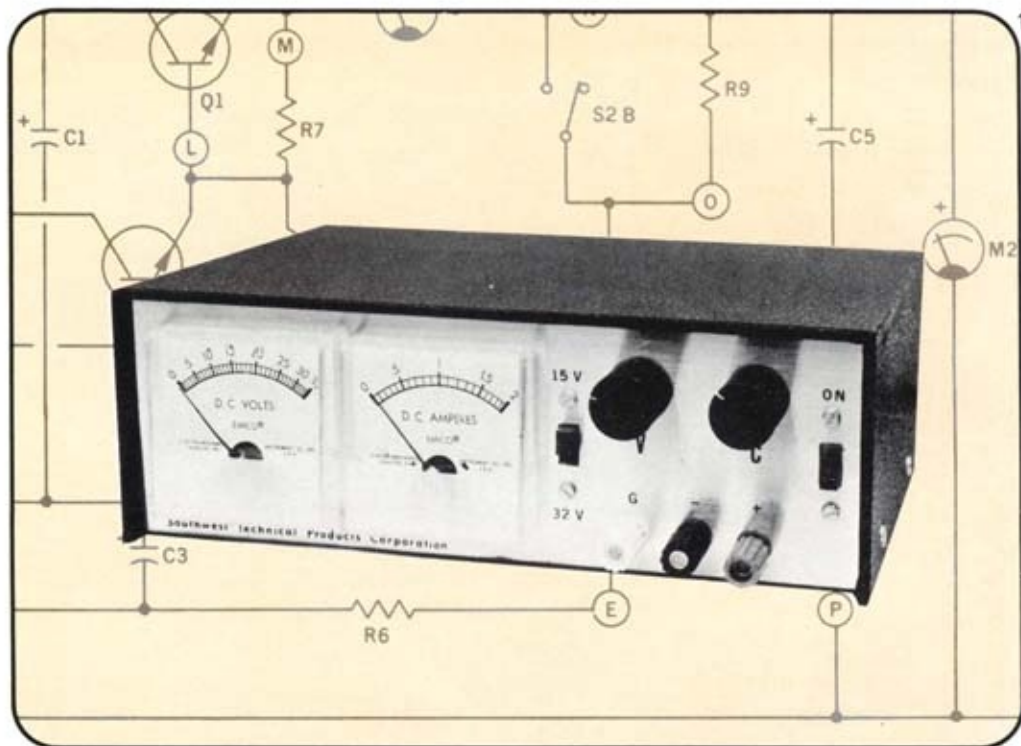
Construction is very simple due to extensive use of circuit boards. Only the offset, level and frequency controls are wired. Our kit features switch selection of waveform, frequency range and type of offset. Output amplitude is constant to less than ± 1 dB on any range and with any waveform. Sine wave distortion is less than 1% from 20 to 20,000 cycles. Square wave and pulse rise times are less than 0.25 microseconds. Accuracy is 1% on the range calibrated and better than 5% on all other ranges.

The instrument is housed in an impact plastic case for maximum drop protection. Case size $5\frac{1}{4} \times 6\frac{1}{4} \times 2\frac{1}{2}$. Power required 115 Volts AC.

#FG-2 Function Generator Kit \$39.95 Ppd in U.S.
Shipping Weight. 3 lbs.



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



SHORT PROOF POWER SUPPLIES

SINGLE POLARITY

0 to +35 VOLTS DC 0-2 AMPS

High capacity 0-2 Amp Power supply for use where only a single polarity power supply is needed. May be used for either positive, or negative ground circuits. Voltage is adjustable from 0 to 15 and from 15 to 35 Volts. Current limiting is adjustable from 10 Ma. to 2.0 Amps.

Cabinet is all metal with vinyl covered top, and a brushed gold front panel.

#143 Power Supply Kit \$41.75 Ppd in U.S.
Shipping Weight. 8.0 lbs.

SPECIFICATIONS

Regulation 1% or 0.1 Volt for
100% load change
Ripple 0.3% or 10 Mv. Maximum
Voltage Range. 0-15 and 15-35 Volts DC
Input 110 to 125 Volts AC

DUAL POLARITY

0 TO \pm 20 VOLTS DC 0-1 AMP

The ideal power supply for operational amplifier circuits and any others requiring a split polarity power supply voltage. The voltage control changes both the positive and negative output voltage by equal amounts when adjusted. Current limiting range is 50 Ma. to 1.0 Amp.

Cabinet is same as single polarity type.

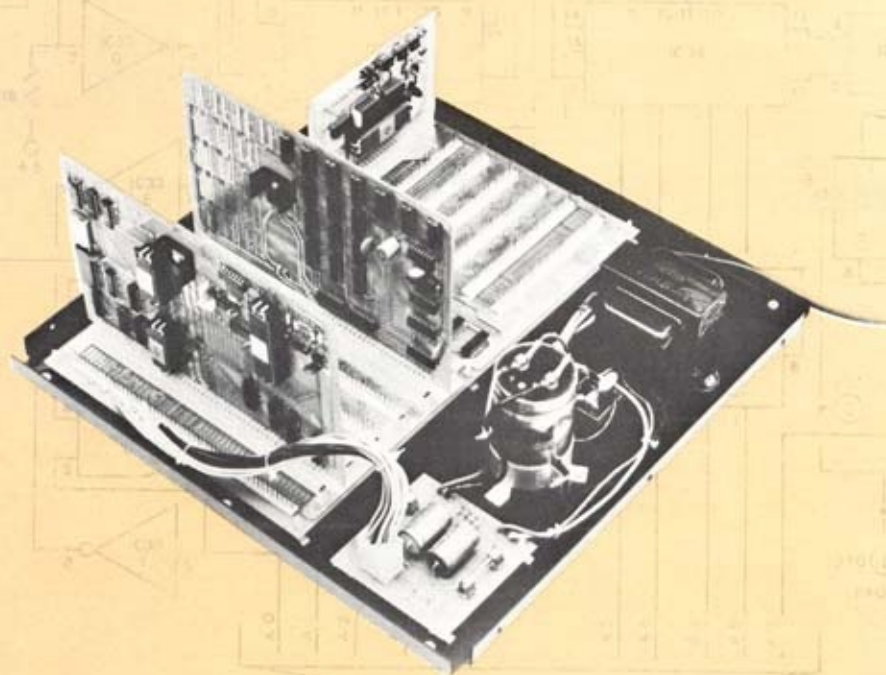
#243 Power Supply Kit \$41.75 Ppd in U.S.
Shipping Weight. 8.0 lbs

SPECIFICATIONS

Regulation05% or 0.1 Volt for
100% load change
Ripple02% or 5 Mv. Maximum
Voltage Range. 0 to \pm 20 Volts DC
Input 110 to 125 Volts AC



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



6800 COMPUTER SYSTEM



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

6800 COMPUTER SYSTEM

The SWTPC 6800 is an eight-bit general purpose mainframe with a total memory capacity of up to 48K bytes of RAM, ROM, EPROM or a combination of the three. The system is based upon the Motorola 6800 microprocessor and features an 8-bit bidirectional data bus and a 16-bit memory/peripheral address bus. The system includes a chassis, power supply, mother board, processor board, memory board and interface board. The mother board has slots for processor and memory type boards and eight I/O boards. The processor board has sockets for up to 8K of ROM or EPROM. The interface board provides an RS-232 type serial interface.

The system is supplied with a monitor ROM to provide automatic start up and reset. The monitor also has programs to allow memory examine and change, single level breakpoints, vectored software interrupts and tape load/dump. If used with a floppy disk system, the monitor also provides automatic disk start up, or booting.

Information is entered into the SWTPC 6800 by an external terminal, or any other input device that can be connected to an 8-bit ASCII interface. The system has provisions for up to eight interface, or I/O ports. These may be either serial or parallel inputs. All address decoding for these inputs is provided on the main board of the system. The interfaces may be operated at any baud rate from

110 to 9600. These rates may be independently selected for each interface. All are crystal controlled and require no adjustments of any kind.

The system is powered by a 110/220 Volt 50-60 Hz power supply that provides the 5.0 Volts @ 10 Amps and ± 12 Volts @ 250 Ma. needed by the system. The system is housed in a 15 x 7 x 15 $\frac{1}{4}$ aluminum chassis. It has been designed with plug together construction to make assembly (in the kit version) and service as simple as possible. The various plug-in boards in the system are all fully buffered and have on-board regulators for maximum noise immunity and reliable operation under all conditions.

The 6800 system is available in kit, or assembled form. The assembled systems are available with 4K, 8K or 40K memory.

68/2 Computer Kit	
w/4K of Memory	\$ 439.00 PPd in U.S.
Shipping Weight.25 lbs.
68/4A Assembled Computer	
w/4K of Memory	\$ 495.00 PPd in U.S.
Shipping Weight.27 lbs.
68/8A Assembled Computer	
w/8K of Memory	\$ 595.00 PPd in U.S.
Shipping Weight.27 lbs.
68/40 Assembled Computer	
w/40K of Memory	\$1,195.00 PPd in U.S.
Shipping Weight.31 lbs.





CT-64 TERMINAL SYSTEM



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

CT-64

The CT-64 is a stand alone terminal system for use with resident, or remote computer applications. Its output is a standard eight-bit ASCII code in serial format. The interface is RS-232. The display format is sixty-four characters per line, sixteen lines per page. Provisions are made for two pages of display (memory provided for only one). The display may be used either in page mode, or scrolling mode.

The full 128 ASCII character set is available. Both upper and lower case characters can be displayed plus control character printing if desired. Characters are formed by a 7 x 12 dot matrix to provide well formed letters and extender tails on lower case letters "g,j,p,q & y.

Full 32 character control decoding is provided. The function of each control character is individually programmed with a jumper on the circuit board, with the exception of ASCII standard backspace, horizontal tab, line feed, vertical tab and carriage return which are prewired. All cursor functions and other special features can be controlled through software by the use of control characters

The video signal generated by the CT-64 is available as either composite video, or separate video and sync. The video signal is phase locked to the local line frequency for flicker free display. The circuit is jumper programmed for either 110 Volt 60 Hz. or 220 Volt 50 Hz. line frequency.

The serial output of the terminal may be at 110, 150, 300, 600, or 1200 baud, switch selectable. Data may be transmitted full duplex, or half duplex. This is controlled by a "Echo Off" keyswitch on the keyboard. The output is RS-232 compatible and will connect directly to most computers and modems. A 16X clock signal is available for operation with cassette interfaces such as our AC-30.

The CT-64 is supplied complete with cover, chassis, keyboard and power supply as shown (less monitor). Power supply is 110/220 Volt 50-60 cycle. The size is 13 x 21 x 5.
 CT-64 Terminal Kit \$325.00 PPD in U.S.
 Shipping Weight 23 lbs.

CT-VM

The CT-VM is a data terminal monitor with a nine-inch diagonal measurement screen and a P-31 green phosphor. Video response is 3db from 10 Hz to 12 MHz. Scan linearity is $\pm 5\%$ both horizontal and vertical. Resolution is 800 lines in the center of the screen and 600 lines at the corners. Power requirement is 12.0 Volts DC at 1.25 Amps maximum. Although the CT-64 may be used with any video monitor, or modified TV set having a video input connection we recommend use of the CT-VM. It will provide a much sharper, crisper and easy to read display.

CT-VM Assembled \$175.00 PPD in U.S.
 Shipping weight 14 lbs.

MULTI-USER

The SwTPC multi-user system converts our standard 6800 single user computer into a multi-user time share system that may be operated with up to four terminals. The four terminals operate independently and may be running four different programs.

No modifications to the computer are necessary, you simply plug in the multi-user board and add an interface for each additional terminal.

The multi-user system is ideal for program training, multi-station business applications and for computer aided instruction (CAI). Speed reduction from a single user system is negligible because all switching is done in hardware.

Multi-user BASIC, suitable for program instruction and simple business applications, is included with the multi-user board.

For computer aided instruction applications, a full feature version of PILOT is available. It includes math operators, misspelling match features and all other proposed for the ANSI standard version. The 6800 multi-user system is just as economical, but far more flexible and powerful than multiple small machines for CAI applications.

MUB-68 Multi-User Board and BASIC software
 Assembled and tested. \$150.00 PPD in U.S.
 Kit \$129.95 PPD in U.S.



6800 SOFTWARE



4K and 8K BASIC (c)

Southwest Technical Products Corporation offers both 4K and 8K Basic (c) software for the SWTPC 6800 Computer System. Both feature fixed and floating point math with a full 1.0E-99 to 9.99999999E+99 number range. In addition to the line number mode, a direct (no line number) mode of execution is provided on most statements to create a calculator-like mode of entry for short programs. Provisions have been made in both packages for saving and loading BASIC programs to and from either cassette or paper tape. A USER function is even provided for jumping to machine language subroutines.

COMMANDS	REM	STATEMENTS		FUNCTIONS
LIST	DIM	END	φOPEN	
RUN	DATA	GOTO*	STOP	ABS †VAL †SIN
NEW	READ	ON...GOTO*	GOSUB*	INT †EXT\$ †COS
SAVE	RESTORE	ON...GOSUB*	PATCH*	RND †LENS †TAN
LOAD	LET*	IF...THEN*	RETURN	SGN †LEFT\$ †EXP
PATCH	FOR	INPUT	†DEF	CHR †MIDS †LOG
		PRINT*	†PEEK	USER †RIGHTS †SQR
		NEXT	†POKE	TAB
		φCLOSE	φRESTORE	
		φWRITE	φREAD	

* Direct mode statements

† 8K Version only

φ 8K Disk Version only

MATH OPERATORS

-	(unary) Negate
*	Multiplication
-	(unary) Negate
*	Multiplication
/	Division
+	Addition
-	Substraction
††	Exponent

RELATIONAL OPERATORS

=	Equal
()	Not E
=	Equal
()	Not Equal
(Less Than
)	Greater Than
(=	Less Than or Equal
)=	Greater Than or Equal



The following programs are available from SWTPC on AC-30 (Kansas City) formatted audio cassette tape:

- 4KBA 4K BASIC Ver. 2.2 (c) with manual. Requires minimum of 6K, 8K preferred Floating point math, but no string or trig. \$4.95 Ppd in U.S.
- 8KBA 8K BASIC VER. 2.2 (c) with manual. Requires 8K, 12K preferred. Includes strings, trig, and optional interface driver routines \$9.95 Ppd in U.S.
- GAMI TIC-TAC-TOE and BLACKJACK as listed in notebook and newsletter. Requires 6K of memory \$4.95 Ppd in U.S.
- ANIM Animals program A children's learning game. Requires 2K of memory. \$4.95 Ppd in U.S.
- RACE Designed for use with a GT-6144 graphics terminal and PPG-J joystick. Object of the game is to maneuver a space ship from the bottom of the screen to the top without being crunched by asteroids. Requires 4K of memory. . \$4.95 Ppd in U.S.
- GAM2 GOMOKO/TTT3D—This game tape contains five-in-a-row tic-tac-toe on a 10 by 10 grid for the SWTPC GT-6144 graphics terminal. Also included is three dimensional tic-tac-toe for GT-6144 use. Requires 4K of memory. . . \$4.95 Ppd in U.S.
- GAM3 MASTERMIND/BIORHYTHM—Mastermind a game of deduction in which the player must decide what four colored pegs the computer has chosen and in what order. Biorhythm is the popular program that will plot a person's biorhythm for any desired amount of time. Biorhythm is inteded to be used with a 80-column hard copy terminal, but will run on others. Requires 8K of memory. \$4.95 Ppd in U.S.
- DISSEM Disassembler Ver. 1.0 Allows object programs to be "disassembled" back to their mnemonic representation. This disassembler will disassemble a program anywhere in memory since it is relocatable and comes with a built-in automatic move routine. Also contains a byte search function. Will work with the control interface and serial or parallel printers on any port \$4.95 Ppd in U.S.

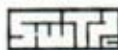
Southwest Technical Products Corporation disk systems are supplied with our "FLEX[®]" disk operating and file management system and disk BASIC.

SWTPC MF-68 Disk Program Library

- Disk 1 This diskette contains the latest version of the "FLEX[®]" operating system, disk 8K BASIC, and the above described TIC-TAC-TOE, BLACKJACK, ANIMALS, RACE, MASTERMIND, BIORHYTHM, GOMOKO, TTT3D, and Disassembler programs plus special disk versions of the memory diagnostics ROBIT, MEMCON, CDAT and SUMTEST. A must for serious disk users. Does not contain the manual for "FLEX[®]" and BASIC as supplied with the orginial disk system. \$25.00 Ppd in U.S.
- FD-5 Blank diskettes for 5½ inch drive \$5.50 Ppd in U.S.
- FD-8 Blank diskettes for 8 inch double sided drives \$9.95 Ppd in U.S.

Notice to SWTPC Software Users

Because of the prices being charged for software, and/or agreements made with authors of the various programs, SWTPC is unable to supply source listings. Also, we are unable to modify the available software to run on computers made by other manufacturers.



MEMORY BOARDS

Additional RAM memory for the SWTPC Computer System is available in two forms. The MP-8M is an 8K byte static memory board using 4K static RAM's. The use of this type memory results in approximately one-half the power consumption of a similar amount of memory made up of 2102 or similar types RAMs. The MP-8M has full buffering on all data, address and control lines for reliable, noise immune operation. A write protect switch is provided.

MP-8A Static Memory 8K — Assembled \$225.00
 MP-8M Static Memory 8K — Kit \$200.00

The second type of memory expansion is our MP-16 dynamic memory board. This memory is available as a 16K byte board that is expandable to 32K bytes by simply plugging in additional memory circuit. The use of dynamic memory makes possible extremely low power consumption. The fully expanded 32K byte memory board actually draws less power than a typical 4K memory made up of 2102 type RAMs. The MP-16 uses hidden refresh. As a result there is no loss of computing speed due to refresh cycles. This memory is available only in assembled form.

MP-16 Dynamic Memory 16K. \$400.00 PPd in U.S.
 M16-X Expansion Set \$250.00 PPd in U.S.

ACCESSORY BOARDS

Interrupt Timer Interface—

The MP-T programmable interrupt time provides software selectable interrupts of 1 usec, 10 usec, 100 usec, 1 msec, 10 msec, 20 msec, 100 msec, 1 sec, 100 sec, 1 min, 10 min or 1 hour. This provides a highly flexible clock system for a variety of computer applications. The MP-T can be used to set sampling rates, to provide interrupts for special applications, or simply to keep the computer updated in real time. The interface is completely software programmable by the user with interrupt control as well as polarity control of the input port handshake lines. Power is provided by the I/O connector on the SWTPC 6800 computer.

MP-T Interrupt Timer option (Kit). \$39.95 PPd in U.S.

MP-N Calculator Interface—

The MP-N is a calculator interface board for the SWTPC 6800 Computer System. This board makes it easy to do arithmetic functions within machine language programs while simultaneously conserving program memory. All necessary interface subroutine listings are supplied with the kit for maximum simplicity and ease of use. The interface uses the National Semiconductor MM57109 Number Oriented Processor and features Reverse Polish Notation, floating point or scientific operation, up to an eight digit mantissa and two digit exponent, four register stack, memory register, trig functions, base ten and natural logarithms and overflow indicator. The board plugs onto one of the seven interface card positions and is powered by the computer system's power supply.

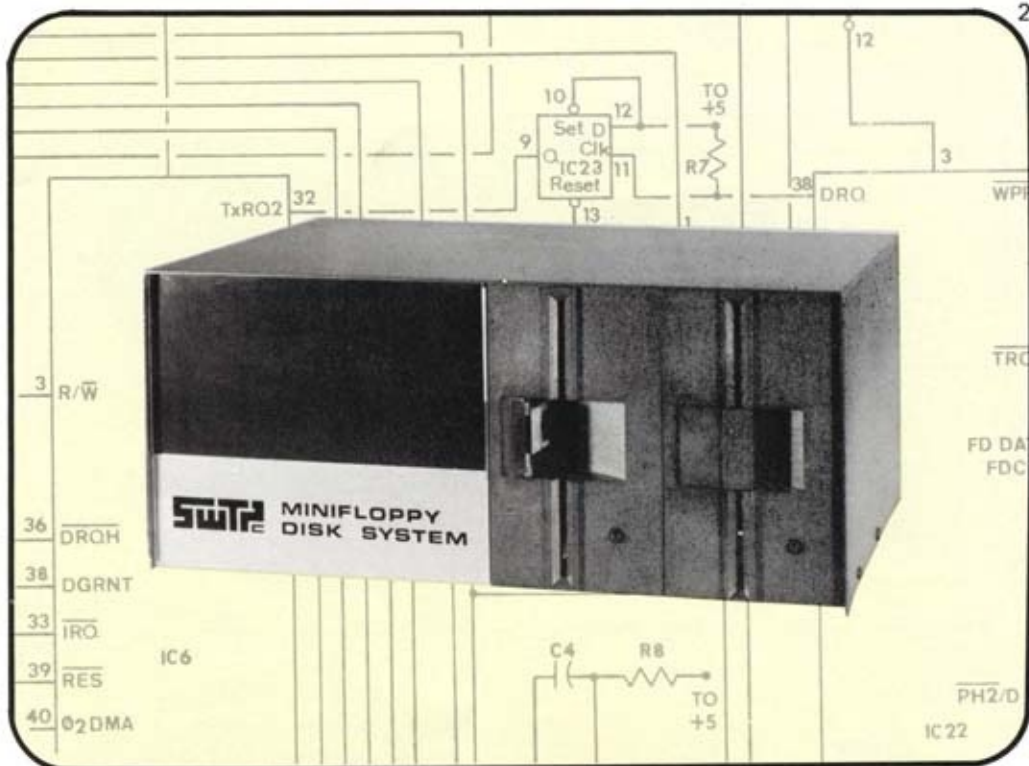
MP-N Calculator Interface option. (Kit) \$46.50 PPd in U.S.

MP-R 2716 EPROM Programmer—

The MP-R EPROM Programmer programs and verifies ultraviolet light erasable 5-Volt 2716 EPROM's. The EPROM to be programmed is plugged into a socket near the top edge of the board. All software necessary to operate the board is supplied with the kit and includes provisions for testing, verifying, and copying 2716 EPROM's. The high voltage supply necessary in the programming process is supplied by an on-board DC to DC inverter so that no external AC supplies are required. Power Consumption for the board is approximately 0.4 A during programming and 0.15 A while idle.

MP-R EPROM Programmer option (Kit). \$44.95 PPd in U.S.





MF-68 FLOPPY DISK

The MF-68 is a dual drive floppy disk system using 5¼ inch flexible diskettes. Each diskette is capable of storing up to 100,000 bytes of information (unformatted). The drives have dual index hole detectors to allow recording on both sides of a diskette, and thus reduce media cost. The disk controller circuit plugs into I/O slot #6 in the SWTPC 6800 computer, and is capable of controlling up to four drives. A thirty-four conductor ribbon cable connects the drives to the computer system. The disk system requires a minimum of 16K of memory in the computer in order to operate.

The MF-68 is supplied with a Mini-Flex® disk operating system (DOS) and disk BASIC with file handling capabilities. Flex®

is composed of three parts, the File Management System (FMS), the disk operating system and the utility command set; which provide the user with a powerful set of system commands to control all disk operations in a very versatile and flexible manner. Disk BASIC is a complete interpreter and features nine digit accuracy, trigonometric functions, string operations and data files.

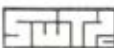
The system includes the cabinet, power supply, controller, connecting cable, diskette with software, instruction manual and two drives. The cabinet is 14 x 6 x 10. The MF-6X drive expansion includes all of the above except the controller.

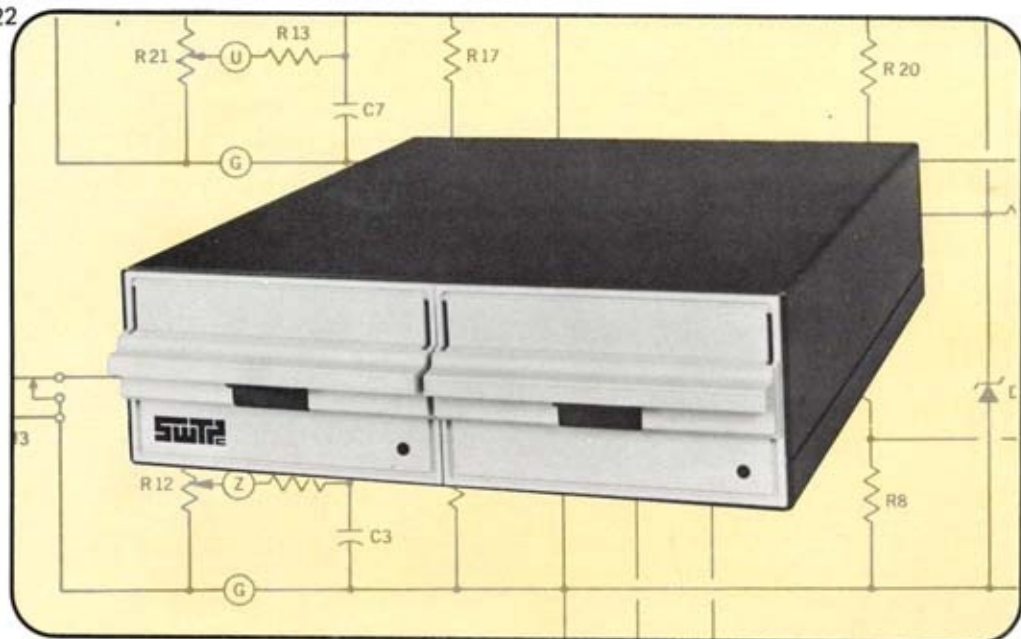
MF-68A Floppy Disk System

Assembled \$995.00 Ppd in U.S.
MF-68 Floppy Disk System Kit \$895.00 Ppd in U.S.
Shipping Weight. 20 lbs.

MF-6XA Drive Expansion

Assembled \$850.00 Ppd in U.S.
MF-6X Drive Expansion Kit. . \$750.00 Ppd in U.S.
Shipping Weight. 20 lbs.





DMF1

The DMF-1 is a dual drive floppy disk system using double sided 8 inch diskettes. Both drives have dual heads to allow access to both sides of the diskette without removing the diskette and turning it over. Each diskette is capable of storing up to 600,000 bytes of formatted data, giving a total "on line" storage capacity of 1.2 million bytes. The drives are controlled by a direct memory access (DMA) controller system. The controller plugs into one of the unused memory slots in the SWTPC 6800 computer. A fifty conductor ribbon cable connects the controller to the drives. The controller will operate up to four drives.

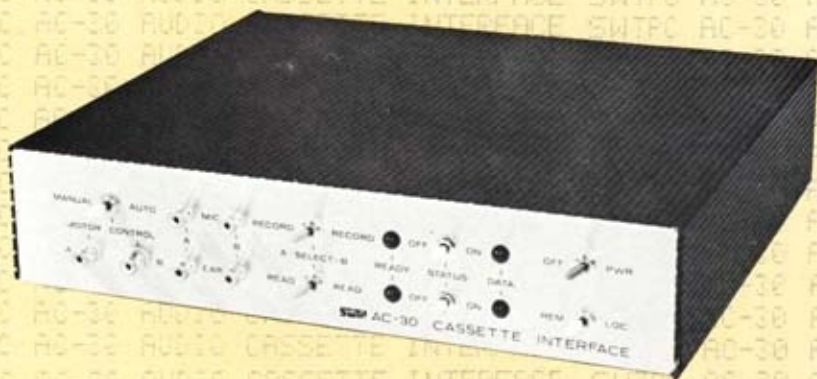
The DMF-1 disk system requires a minimum of 24K of memory to operate. The DOS requires 8K of memory located at an address beginning at A000 hex. We recommend use of the 68/40 computer with this system. This provides 32K of user memory and the 8K for the DOS in the correct address location.

The DMF-1 system is supplied with Flex[®], a powerful and flexible but easy to use operating system. Programs and data files are accessed and manipulated using file names and extensions. The operator need not specify, or even be aware of tracks, sectors, file numbers, etc. as is necessary in less elegant systems. A full feature disk BASIC with both sequential and random file handling is also included. Both BASIC and Flex[®] incorporate access to a spool file system that allows printer operation to occur independently of computer use and at any desired time.

The system includes the cabinet, power supply, DMA controller, connecting cable, diskette with software, instruction manual and two drives. Size is 17 x 5 3/8 x 20 1/2, and shipping weight is 53 lbs. The drive expansion system includes all of the above except the controller.

DMF1A DMA Dual Disk System	
Assembled	\$.2,095.00 PPd in U.S.
DMF1 DMA Dual Disk System	
Kit	\$.2,000.00 PPd in U.S.
DMFXA Drive Expansion	
Assembled	\$.1,850.00 PPd in U.S.
DMFXA Drive Expansion	
Kit	\$.1,800.00 PPd in U.S.





AC-30 CASSETTE INTERFACE

Been looking for a practical way to input and dump programs to your computer? Well your search is over.

With our new AC-30 Cassette Interface you will be able to store and input program data to any computer system having RS-232 serial interfaces and a UART circuit having an accessible 16X clock frequency. Data format is the "Kansas City" standard which was selected for its tolerance of speed variations in the recording device. The AC-30 may be used with any cassette recorder of reasonable quality.

If **both** your computer and terminal have accessible 16X UART clocks and will operate at 300 baud—as do our 6800 computer and terminal system—the AC-30 may be used between the terminal's serial interface and the computer's control inter-

face. This eliminates the need for a separate interface to drive the cassette unit. It also allows you to use the computer system's tape load and dump routines built into SWTBUG® or similar ROM software.

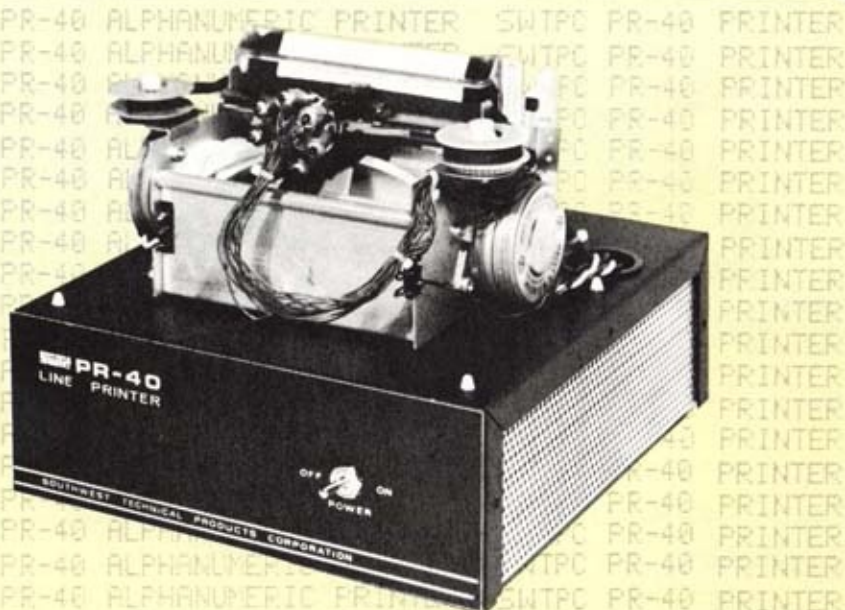
Independent control circuits are provided for **two** audio cassette recorders (not included in the kit). One recorder's tape may be read while the second is recording a new updated tape; making it possible to generate new program tapes, data tapes and to create program object tapes while reading and assembling program source tapes. The operating mode for each recorder is selected by switches on the front panel and LED indicators show the mode that is selected at any particular time. Computer controller record, play and motor controlled commands may be used with this system if they are available from the terminal being used. This feature is available on our SWTPC terminals.

The AC-30 is housed in a 12¼" x 3" x 1½" aluminum chassis. It is powered by a self contained 115/230 Volt AC 50-60 Hz power supply. Data is FSK format using 1200 Hz and 2400 Hz at a 300 baud data rate. Recorder speed tolerance need be only ±20%.

AC-30 Cassette Interface Kit . \$79.50 Ppd in U.S.
Shipping Weight. 6 lbs.



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



PR-40 ALPHANUMERIC PRINTER

Been looking for a reasonably priced printer? The SwTPC PR-40 may be just what you have been wanting. It is a 5 x 7 dot matrix impact printer similar in operation to the well known Centronics printers. It prints the 64 character upper case ASCII set with 40 characters/line at a rate of 75 lines/minute on standard 3 7/8" wide rolls of adding machine paper. One complete line is printed at a time from an internal forty character line buffer memory. Printing takes place either on receipt of a carriage return or automatically whenever the line buffer memory is filled.

The printer can accept character data as fast as one character per micro-second or as slow

as you wish to send it. The printer's seven parallel data lines are TTL compatible and may be enabled by a single "data ready" control line or by separate "data ready" and "data accepted" handshake control lines. This universal approach makes the printer compatible with all computer and terminal systems having an eight bit parallel interface; including of course the SWTPC 6800 computer and most "8080" based designs.

The printer mechanism is mounted on a black anodized aluminum chassis which houses the electronic circuits and the 115/230 Volt AC 50-60 Hz power supply for the unit. This makes the printer's overall dimensions 9 5/8" wide x 10 1/2" deep x 8 3/4" high.

Each unit is shipped with one ribbon and one roll of paper. Extra ribbons are available from us while the standard adding machine paper may be purchased in office supply stores.

#PR-40 Alphanumeric
Printer Kit \$250.00 Ppd in U.S.
Shipping Weight15 lbs.

