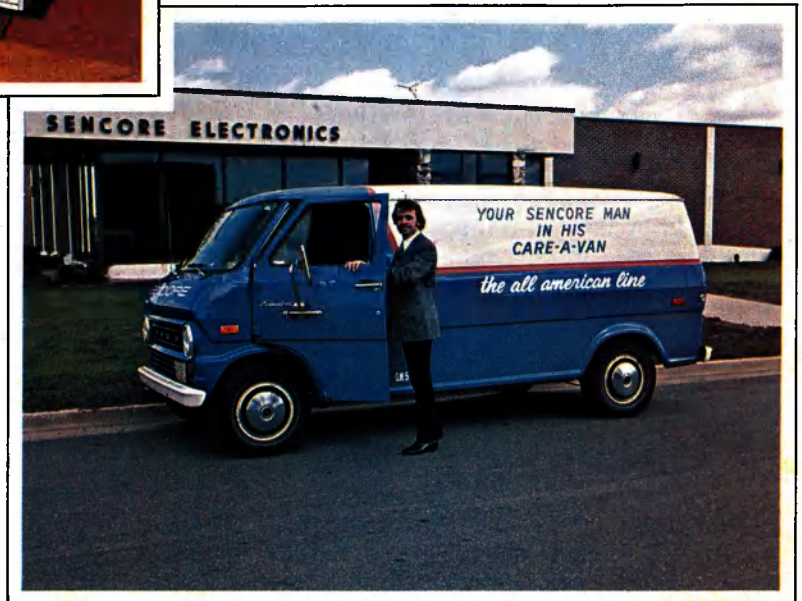


# SENCORE ELECTRONICS



The all American line of innovative high quality test equipment . . . . .

. . . . backed nationwide with scheduled monthly calls by Sencore factory trained tech-reps



**Sold Through Sencore \*FLPD's**

**\*Full Line Promotional Distributors**

PRINTED NOVEMBER 1975

The following units have had price changes since that time.

FE160 Senior Field Effect Meter . . . . .	\$240	MU150 Mutual Conductance Tube Tester . . . . .	\$395
CR31A Super Mack CRT Tester/Restorer . . . . .	\$495	TC28 Hybrider Tube and Transistor Tester . . . . .	\$275
TC162 Mighty Mite Tube Tester . . . . .	\$175	FS134 Field Strength Meter . . . . .	\$395
		UPS164 Universal Power Supply . . . . .	\$290
		PS163 Dual Trace Triggered Oscilloscope . . . . .	\$895

## DVM32 PORTABLE DIGITAL MULTIMETER

- ✓ Up to 30 times more accurate than conventional analog meters.
- ✓ 3 1/2 digit readout, .5% accuracy, backed by 15 megohm input impedance.
- ✓ Complete — from 1mV to 2000 VDC — with Hi-Lo Power Ohms and AC/DC current for complete measuring capability.
- ✓ Versatile 3-way power with exclusive battery-saving Auto-Off Display.
- ✓ Drop-proof and burn-out proof for truly protected accuracy.

*The Complete Protected Portable*



PAT. PENDING **\$198**

Accuracy specified as % of reading  $\pm 1$  digit.

**DC Voltage:** 0 to  $\pm 2, 20, 200, 2000$  volts. Accuracy: .5%. Input Impedance: 15 megohm.

**AC Voltage:** 0 to 2, 20, 200, 1000 volts. Accuracy: 1.5%. Input Impedance: 1.8 megohm shunted by 18pF.

**Ohms:** Low Power (.08V max. test voltage): 0 to 200, 2K, 20K, 200K, 2000K ohms. High Power (.8V max. test voltage): 0 to 2K, 20K, 200K, 2000K, 20 megohm. Accuracy: 1%.

**DC, AC Current:** 0 to 2, 20, 200, 2000mA. Accuracy: 1% DC, 1.5% AC.

**Input Protection:** 2000V (DC + peak) on DCV, 1000 V on all other functions. Internal diode protection plus back-up 1/16A and 2A fuses.

**Display:** 3 1/2 digit, 7-segment L.E.D. Automatic Polarity, Decimal, and Overrange.

**Exclusive Auto-Off Display:** Turns display off when reading is 010 or less, for long battery life. (Patent Pending).

**3-Way Power:** Batteries: 4 "C" cells, or 39A90 Power Adapter (optional — \$9.95) for AC Line or Rechargeable operation using NiCad "C" cells.

**Mechanical:** Drop - proof Cyclocac® case. SIZE: 7"x5"x4" (15x13x10cm). WEIGHT: 2 1/2 lb. (1Kg).

### SPECIFICATIONS

\* **DVM36 Pocket Portable DVM:** 3 1/2 digit, .5% DCV accuracy. DVM35 case. Each range 2 times DVM35 ranges except 1000V range. (available June 1976)

## DVM35 POCKET PORTABLE DIGITAL MULTIMETER

- ✓ Ten times more accurate than analog meters.
- ✓ 3-digit, 1% accuracy, backed by high, 15 megohm input impedance.
- ✓ Pocket size and portable (only 1 lb.) with rugged drop-proof, burn-out proof design.
- ✓ Measures more — up to 2000 VDC with X2 switch in probe, plus Hi-Lo Power Ohms for solid state measurements.
- ✓ Exclusive Touch-On switch in probe for longer battery life than other meters.

*Pocket Portable DVM, accuracy at an analog price.*



**\$124**

\* **DVM36**  
\$148.00

Accuracy specified as % of reading  $\pm 1$  digit ( $\pm 2$  digits on ohms).

**DC Voltage:** 0 to  $\pm 1000$ mV, 10, 100, 1000 volts. Accuracy: 1%. Input Impedance: 15 megohm. 2000V DC capabilities using X2 switch in probe.

**Isolation Switch:** Increases input impedance to 30 megohm to prevent loading in high impedance circuits.

**AC Voltage:** 0 to 1000mV, 10, 100, 1000 volts. Accuracy: 1.5%. Input Impedance: 15 megohm shunted by 30pF.

**Ohms:** Low Power (200mV max. test voltage): 0 to 100, 1000, 10K Ohms. High Power: (1 volt max. test voltage): 0 to 100K, 1000K, 10 megohm. Accuracy: 2%.

**AC/DC Current:** Measures total average sum of AC and DC. 0 to 1000uA, 10, 100, 1000mA. Accuracy: 2%.

**Input Protection:** 1000 Volts (DC + peak), 2KV using X2 switch on probe, except 500V on 10M range. Internal diode protection plus back-up 2A fuse in probe tip for easy access.

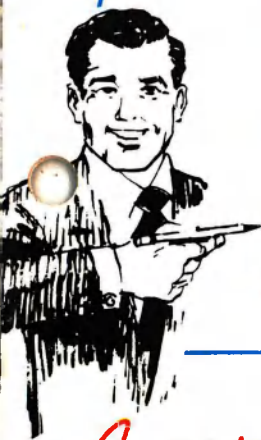
**Display:** 3-digit, 7-segment L.E.D. with Automatic Polarity, Decimal, Overrange.

**3-Way Power:** Batteries: 6 - "AA" alkaline cells, or PA202 Power Adapter (optional — \$9.95) for AC Line or Rechargeable operation using rechargeable "AA" NiCads.

**Mechanical:** Drop-proof Cyclocac® case. SIZE: 6"x4"x1 1/4" (15x10x3.1cm). WEIGHT: 1 lb. (45Kg).

**"Push to Test" Probe Switch:** Unit draws no current until probe "ON" switch is pressed for measurement. Guarantees long battery life. Continuous "ON" available with override switch on unit.

### SPECIFICATIONS



# DVM38 AUTO-RANGING DIGITAL MULTIMETER

- ✓ The one meter you can rely on for all of your measuring needs.
- ✓ New accuracy standard — 3 1/2 digit, .1% DCV accuracy, backed with 15 megohm input impedance, is more accurate in more circuits for readings you can trust every time.
- ✓ New measuring capabilities — sensitive, with .01 ohm and .1 millivolt resolution, yet fully protected to 2000 VDC. Hi-Lo Power Ohms for unparalleled accuracy in solid state circuits.
- ✓ New standard in speed and operating ease — Auto-Ranging, Auto-Zero, and big pushbutton panel for fast, automatic digital readings.

*A prime standard at your fingertips . . . . .*

*for complete measuring confidence*



**\$348**

**Single Step Auto-Ranging:** Each voltage range automatically increases sensitivity ten times for Auto-Range Lower Scale when reading is less than 1/10th of Full Scale. All accuracies expressed as % of reading  $\pm$  specified number of digits to 1000 volts.

**DC Voltage:** 0 to  $\pm$ 200mV (Auto-Ranged scale only), 2, 20, 200, 2000 volts. Accuracy: 200mV scale: .1%  $\pm$  3 digits. All ranges: .1%  $\pm$  1 digit. Auto-Ranged scales: .1%  $\pm$  3 digits. Input Impedance: 15 megohm.

**AC Voltage:** 0 to 200mV (Auto-Ranged scale only), 2, 20, 200, 1000 volts. Accuracy: 200mV scale: .5%  $\pm$  3 digits. All ranges: .5%  $\pm$  2 digits; Auto-Ranged Scale: .5%  $\pm$  3 digits. Input Impedance: 1.5 megohms shunted by 40pF.

**DC/AC Current:** 0 to 200uA, 2, 20, 200 2000mA. Accuracy: .3%  $\pm$  2 digits DC, 1%  $\pm$  2 digits AC.

**Resistance, Low Power:** 0 to 20, 200, 2K, 20K, 200K, 2000K ohm. Accuracy: 20, 200 ohm ranges: .2%  $\pm$  3 digits plus lead resistance; All other ranges: .2%  $\pm$  3 digits. Max. voltage at leads: 200mV at full scale.

**Resistance, High Power:** 0 to 2K, 20K, 200K, 2000K, 20 megohm. Accuracy: .2%  $\pm$  2 digits. Max. voltage at leads: 2V at full scale.

**Protection:** 2000 volts (DC + peak) on DCV, 1000 volts on all other functions and ranges. Internal diode and back-up fuse protection.

**Display:** 3 1/2 digit, 7-segment L.E.D. with V, mV indicators. Automatic Polarity, Decimal, Zero and Over-range.

**Mechanical:** Durable vinyl covered steel case with adjustable tilt stand/handle. SIZE: 5 1/2"x7 7/8"x9" (13.7x20x22.5cm). WEIGHT: 6.5 lb. (2.9Kg). POWER: 105 - 130 VAC, 50/60Hz, 7 watts.



## HP200 50KV HIGH VOLTAGE PROBE

For all Sencore FE meters and DVMs. Slips over test probe to multiply all ranges X 100 up to 50KV. 1% accuracy . . . . . \$25.00.

## SPECIFICATIONS

# FE23 LITTLE HENRY FIELD EFFECT MULTIMETER AND FE27 BIG HENRY FIELD EFFECT MULTIMETER

- ✓ **Tough and dependable** — inside and out. 1000 volt internal protection on all ranges, plus tough acrylic and steel case.
- ✓ **Dependable FET accuracy** — 1.5% DCV, 3% ACV — for accurate solid state measuring with less circuit loading than VOMs.
- ✓ **Dependable battery operation** to go with you anywhere. Even shuts itself off when lead compartment door is closed.
- ✓ **Compact and complete** with illuminated meter and handy lead storage compartment.



*The toughest little meter in the whole wide world.*



*The toughest full sized meter in the world.*

**\$124**

### FE23 Specs

**DC Voltage:** 0 to 3, 30, 300, 1000, 6000 volts. Accuracy: 1.5% F.S. (3% — 6KV range). Input Impedance: 15 megohm.

**AC Voltage:** 0 to 3, 30, 300, 1000 volts. Accuracy: 3% F.S. Input Impedance: 900 K shunted by 27pF.

**Ohms:** Rx1, x100, x10K, x1 megohm. 10 ohm center scale. Accuracy: 2° arc.

**DC Current:** 0 to 1 Amp. Accuracy: 3% F.S.

**Input Protection:** 1000 V (DC + peak) all ranges.

**Meter:** 3 1/2", 100uA, 2%. Illuminated. Shock-proof mounted. Sliding protective cover.

**Battery Power:** 1 - 9V and 3 - 1.5V "AA" cells.

**Mechanical:** Tough acrylic and vinyl - covered steel case. SIZE: 6 1/2"x4 1/2"x2 1/4". WEIGHT: 2 1/2 lb.

### FE27 Specs

**DC Voltage:** 0 to ± .3, 1, 3, 10, 30, 100, 300, 1000, 3000 volts. Zero center scale. Accuracy: 1.5% F.S. Input Impedance: 15 megohm.

**AC Voltage:** 0 to .3, 1, 3, 10, 30, 100, 300, 1000 volts. True RMS or P-P detecting. Accuracy: 3% F.S. Input Impedance: 2.4 megohm shunted by 95pF.

**\$195**

**Ohms:** Rx1, x10, x1K, x100K, x1M ohms. 10 ohms center scale. Accuracy: 2° arc.

**DC Current:** 0 to ± 10mA, 100mA, 1A. Accuracy: 3%. Optional 3A shunt No. 39G82 — \$4.00.

**Input Protection:** 1000 V (DC + peak) all ranges.

**Meter:** 4 1/2", 100uA, 2%. Illuminated. Shock-proof mounted. Sliding protective cover.

**Battery Power:** 2 - 9V and 2 - 1.5V "C" cells.

**Mechanical:** Tough acrylic and vinyl-covered steel case. SIZE: 10"x5 1/2"x3 1/2". WEIGHT: 4 1/2 lbs.

**FE21 Hi-Lo F.E.T. meter** ..... \$175  
0-1000 V AC, DC, 0-1A DCC, Hi and Lo ohms 1K to 1000 Meg. 1.5 percent DCV Accuracy.

**FE20 Hi-Lo F.E.T. meter** ..... \$195  
Same as FE21 includes 30KV high voltage probe, 6" meter.

## SPECIFICATIONS

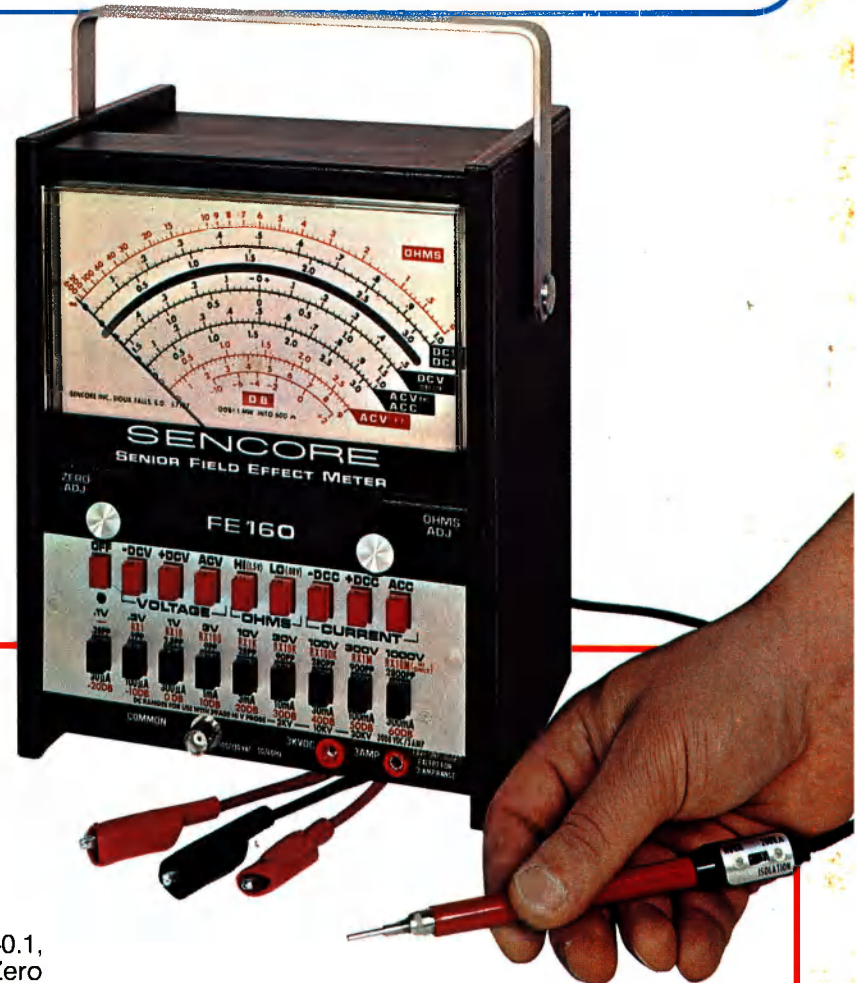


here is your checklist of why our customers buy the Sencore  
**FE160 SENIOR FIELD EFFECT METER**

- 112 Ranges; more ranges for more work than any other multimeter on the market.**
- Simplified push button ease of operation.**
- Lo Ohms scale to check resistance in circuit without firing transistors.**
- .1 volt full scale for solid state work.**

*It's the market's most complete multimeter - 112 ranges in all*

**\$195**



**DC Volts:** 10 Positive and 10 Negative Ranges: 0-0.1, 0.3, 1, 3, 10, 30, 100, 300, 1000 and 3000. 10 Zero Center Ranges: -0.05 to 0.05, -0.15 to 0.15, -0.5 to 0.5, -1.5 to 1.5, -5 to 5, -15 to 15, -50 to 50, -150 to 150, -500 to 500, and -1500 to 1500. Input resistance: 15 megohm, shunted by 90pf in probe (NORM.) 10 pf in 200K (ISOLATION.) Accuracy: 1.5 percent. AC rejection: 30 DB minimum.

**AC Volts:** 9 RMS ranges: 0-0.1, 0.3, 1, 3, 10, 30, 100, 300 and 1000. 9 PP ranges: 0-0.28, 0.84, 2.8, 8.4, 28, 84, 280, 840 and 2800, frequency compensated. Input resistance: 12 megohm shunted by 90pf. Frequency response: 1DB 10Hz-150KHz, 3DB 5Hz-500KHz. Accuracy: 2.5%.

**DC Current:** 10 positive and 10 negative ranges: 0-30uA, 100, 300, 1mA, 3, 10, 30, 100, 300 and 3A. 10 zero center ranges: -15 to 15uA, -50 to 50uA, -150 to 150uA, -500 to 500uA, -1.5 to 1.5mA, -5 to 5mA, -15 to 15mA, -50 to 50mA, -150 to 150mA and -1.5 to 1.5A. Internal voltage drop: 0.1V. Accuracy: 2 percent.

**AC Current:** 10 RMS ranges 0-30, 100, 300uA, 1, 3, 10, 30, 100, 300mA and 3A. Internal voltage drop: 0.1V RMS. Accuracy: 3 percent.

**Protection:** 1,000 times overload on volts. Fuse and diode protected on ohms.

**Ohmmeter:** 8 high power ranges (1.5V) 0 - 600 ohms, 6K, 60K, 600K, 6M, 60M, 600M and 6000M. 7 low power ranges (0.08V) 0 - 600 ohms, 6K, 60K, 600K, 6M, 60M and 600M. Accuracy: 2 degrees arc.

**Decibel (DB):** 9 ranges: -20, -10, 0, 10, 20, 30, 40, 50, 60db. Reference: 1mV into 600 ohm.

**Meter:** 7", 500 microamp, D'Arsonval, diode protected.

**Ohms Supply:** Fully electronic with no battery requirement.

**Mechanical Description:** Rugged black vinyl clad steel with aluminum panel 9" x 7 1/2" x 6", 6 pounds.

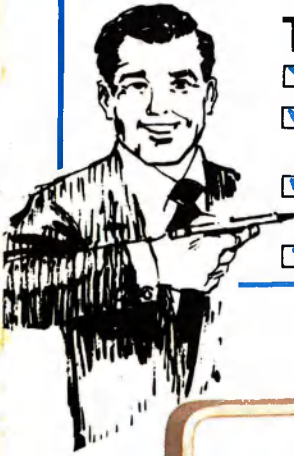
**Power:** 105 - 130 volts, 50-60Hz AC, convertible to 220VAC.

**High Voltage Probe:** 39A30, extends 300 volt range to 30 KV. (not supplied) .....\$20.00.

**SPECIFICATIONS**

here is your checklist of why our customers buy the Sencore  
**TF26 TOUCHTONE CRICKET TRANSISTOR TESTER**

- ☑ Complete in-circuit pushbutton test in one simple operation.
- ☑ No setup data or technical knowledge required. Just hook up the leads any way you want and push the buttons for a simple GOOD-BAD readout.
- ☑ Checks them all - both NPN and PNP transistors, both N-channel and P-channel FET's, in or out of circuit, with the same simple test.
- ☑ Sensitive out of circuit leakage test in microamps to back you up.



*Hop through solid state circuits in seconds.*



**\$150**

**PATENT PENDING**

**Transistor gain test:** In or out of circuit GOOD - BAD test for either bipolar transistors or field effect transistors. Simply connect the leads, any way you wish, and push the buttons. The Cricket will read GOOD on the meter and "chirp" with a built in audible tone when the correct button is pushed on a good transistor. (No chirp indicates bad transistor.)

**Leakage Test:** Sensitive DC out-of-circuit leakage test in microamps to back you up for I<sub>cb0</sub> in transistors and I<sub>gss</sub> in FET's.

**Test Specifications:** V<sub>ce</sub> = +5 volts DC, V<sub>be</sub> = 3 volts p-p, Zero reference, 2KHz frequency.

**Damage Proof:** Low-level test signals are completely safe - even for those delicate rf transistors.

**Meter:** 4 1/2", 100 microamp, D'Arsonval meter movement with specially-designed jewel pivot meter movement for shock protection. Sliding meter cover for protection of meter glass.

**Spring loaded connectors:** Large, easy to use, sure-clamp hook connectors.

**Mechanical description:** Rugged acrylic and vinyl clad steel case.

**Size:** 10" x 5 1/2" x 3 1/2"

**Weight:** 4 pounds

**Power:** 105-130 volts, 50-60Hz AC.

**Low Power Consumption:** Typically less than 5W

**SPECIFICATIONS**



## here is your checklist of why our customers buy the Sencore TF30 SUPER CRICKET AUTOMATIC TRANSISTOR FET ANALYZER

- ✓ It's a tried and proven Cricket for fast, 99.9% reliable, in circuit "Good - Bad" troubleshooting.
- ✓ It's a transistor analyzer for complete parameter tests without zeroing or calibrating - you just push.
- ✓ It automatically identifies all three leads with easy to use front panel roll chart.
- ✓ All without a reference book. Reference book supplied as guide only.

*Completely analyze any transistor or FET in seconds*

**\$240**



PATENT PENDING

**Devices Tested:** Transistors, single and dual gate FETs, diodes.

**Cricket Gain Test:** In or out of circuit "Good-Bad" test for any transistor or FET using 99.9% reliable patent pending phase inversion type test. Switch the function knob to Cricket, connect the leads in any order and push the six Cricket buttons on NPN and PNP. Meter will indicate "GOOD" as an audible tone tells you gain is present. (No tone indicates bad transistor.)

**Parameter Tests:** Once you've determined a transistor is good using the Cricket Test, simply rotate the function knob to the transistor type under test and push for gain or leakage, no zeroing or calibrating - it's automatic.

**Parameters Measured:** Gain: Beta and transconductance. Leakage: All possible interelement leakage checks can be made including  $I_{cbo}$ ,  $I_{gss}$  and  $I_{dss}$ .

**Test Specifications:** Cricket Test: Dynamic gain with phase inversion circuit. Test Freq.: 2KHz. Test Voltage:  $V_{ce} = +5.6$  VDC,  $V_{be} = 7V$  p-p. Test Currents:  $I_c = 12mA$  max.,  $I_b = 7mA$  max.

**Parameter Tests:** Gain Test: Dynamic AC Beta Test Freq.: 2KHz. Test Voltage:  $V_{ce} = +5.6VDC$  Beta Range: 0-500. Leakage Test ( $I_{cbo}$ ) Range: 0-2500 microamps.

**FETS:** Gain Test: Dynamic Mutual Conductance Test. Freq.: 2 KHz, Test Voltage:  $V_{ds} = +5.6VDC$ .  $G_m$  Range: 0-25,000 micromhos. Leakage Test ( $I_{gss}$ ): Range: 0-2,500 microamps.  $I_{dss}$  Range: 0-50 milliamps.

**Positive Lead Identification:** Dial in number on front panel roll chart of Cricket button used in gain test for positive identification of all three leads.

**Damage Proof:** Low-level tests signals accurately, yet safely, test any transistor or FET, backed by a specially designed switching circuit that applies test currents only on correct basing connections.

**Button Lock:** Holds Cricket test buttons down for

parameter tests plus is handy for monitoring intermittents using the optional ON-OFF Cricket tone.

**Meter:** 6", 100 microamp, 2%.

**Power:** 105-130VAC, low 8.5 watts.

**Mechanical Description:** 9 3/4" x 7 1/2" x 7 1/2", 6 lbs. Rugged black vinyl clad steel case with aluminum panel.

**Accessories:** Sure Clamp E-Z Hooks: 4 easy to hold spring load connectors, get in and hold leads for fast testing.

**39G85 Touch Test Probe:** It's a printed circuit board servicer - with needle sharp points for guaranteed contact to P.C. board pads for instant testing of entire boards without making one connection (all accessories supplied with unit).

## SPECIFICATIONS

here is your checklist of why our customers buy the Sencore  
**TC162 MIGHTY MITE TUBE TESTER**

- ✓ It checks them all, large and small, domestic or foreign: over 3,000 tubes total.
- ✓ Finds those tough dogs others miss—with 100 megohm grid leakage sensitivity.
- ✓ Stethoscopic shorts test that tests each element individually against the others.
- ✓ Over 70,000 Mighty Mites sold to date.

*Find those tough dogs others miss -  
 with 100 megohm grid leakage sensitivity.*



**\$150**

**Cathode emission:** Tested at full rated cathode current of the tube under test.

**Grid Leakage Sensitivity:** 100 megohms or a half microamp.

**Shorts Test:** Individually made, one element against all other tube elements in the tube.

**Tubes tested:** Over 3000 in all.

**Circuitry:** All Solid State.

**Pin Eliminator Switches:** Added as extra test to eliminate tied-in connections in tubes so the tube can be tested. All returned to original position by one return switch.

**Mechanical Description:** Black vinyl-clad steel case with aluminum panel and trim. 10" x 9" x 4", 9 pounds.

**Power:** 105-130 volts, 50-60Hz AC, 32 watts.

**SPECIFICATIONS**



here is your checklist of why our customers buy the Sencore

## MU150 MUTUAL CONDUCTANCE TUBE TESTER

- It checks all tubes, foreign and domestic, for true mutual conductance with an exclusive 5,000 hertz square wave test.
- Fast, too, as it becomes a rapid Mighty Mite tester if you use the first three switches only.
- The only complete mutual conductance tester on the market. There aren't any others. The MU150 has outlasted them all.



*It's the only complete tube analyzer on the market.*



**\$350**

**Mutual conductance test:** 5,000 hertz square wave under actual amplifying conditions. The tube is harnessed up in the circuit, unlike other testers that are vanishing from the market that use the tube to do its own rectification.

**Cathode emission check:** Checks tubes under full rated current as indicated in tube manuals. A must for power tubes where emission is more important than amplification.

**Leakage Sensitivity:** 100 megohms or .5 micro-amp.

**Shorts Test:** Stethoscopic test. Each element is checked against every other element.

**Life Test:** Interrupted filament to determine intermittents and temperature sensitive failures.

**Mechanical Description:** Handsome vinyl-clad steel case with chrome panel and trim. 18" x 14" x 5", 18 pounds.

**Power:** 105-130 volts, 50-60Hz AC.

### SPECIFICATIONS

here is your checklist of why our customers buy the Sencore  
**TC28 HYBRIDER TUBE AND TRANSISTOR TESTER**

- It's an amplifier checker for tube, solid state and hybrid circuits.
- It's a Mighty Mite that checks over 3000 tubes, foreign and domestic.
- It's the miraculous new Cricket for in and out of circuit transistor and FET test-  
ing—without a setup book.
- Be totally equipped—not half equipped—with the only amplifier checker that equips you  
for all tube, solid state and hybrid amplifying circuits.



*The only hybrid  
 amplifier checker on  
 the market today for  
 tube, solid state and  
 hybrid circuits.*



PATENT PENDING

**\$260**

**Devices Tested:** Tubes, transistors, diodes and single-gate FET's.

**Tube Tests:** Cathode emission test at full rated cathode current. Grid leakage sensitivity to 100 megohms. Individual shorts test for each pin read right on the meter, with individual pin elimination switches to eliminate tied-in connections in the tube.

**Transistor Tests:** Gain (in or out of circuit); same pushbutton test for GOOD—BAD reading on any bipolar transistor or Field Effect Transistor, in or out of circuit. Vce = 5 volts, Vbe = 3 volts peak to peak, zero reference, 2KHz frequency.

**Transistor Leakage:** (out of circuit only) 5VDC applied voltage. Meter indicates 0-3000 microamps leakage current for I<sub>cbo</sub> in transistors and I<sub>gss</sub> in FETs.

**Mechanical Description:** Black vinyl clad steel case with aluminum panel and trim.

**Circuitry:** All solid state, with computer-logic integrated circuits.

**Meter:** 6" x 3 3/4" D'Arsonval, 100 microamp.

**Size:** 14 3/4" x 4 1/2" x 12"

**Weight:** 13 3/4 pounds

**Power:** 105-130 volts, 50-60Hz AC

**SPECIFICATIONS**



## SS137 SWEEP CIRCUIT ANALYZER FS134 FIELD STRENGTH METER

*Special testers*



\$150



\$275

### SS137 SWEEP CIRCUIT ANALYZER

Here is a special tester that will pay for itself many times over. Every time that you run into a tough dog TV receiver, you suspicion sweep troubles. The SS137 will isolate your trouble in a hurry. Here is what it does.

**Horizontal Oscillator:** Substitutes directly for any TV horizontal oscillator right up to the control grid of the output tube.

**Vertical Oscillator:** Direct substitute for any vertical oscillator.

**Horizontal Yoke:** Substitutes directly for any black and white or color receiver horizontal deflection yoke. Takes the mystery out of this component. Restoration of high voltage means the yoke was faulty.

**Flyback dynamic test:** Checks the power transfer of the output tube to the good yoke substituted to determine capability of horizontal output transformer. Calibrated in degrees of deflection of CRT.

**Vertical output signal:** Direct substitute.

**High voltage and current tests:** To determine capability of output tube and return of high voltage with normal load of CRT.

### FS134 FIELD STRENGTH METER

Equip yourself for CATV, MATV and additional Antenna Work.

**Covers all TV and FM:** Covers all VHF, UHF channels and the FM band.

**Calibrated accurately in microvolts:** You can believe what you read as signal strength is calibrated

in actual microvolts. The FS134 is calibrated within 3 DB on VHF channels and within 6 DB on UHF channels.

**Highly sensitive:** The FS134 goes all the way down to 30 microvolt sensitivity on both VHF and UHF. Built-in attenuators of 0, 20 and 40 DB (X1, X10 and X100) enable you to measure signal strength from the amplifier to the last tap-off in the distribution system. Also helps you find line loss in a hurry.

**Uses Jerrold zero DBJ as reference:** The FS134 fits right into any job that you are doing, as it uses the same reference level as the manufacturers of distribution systems . . . even uses standard Jerrold coax connectors so that you can work right into existing systems.

**Completely portable with three-way power:** The FS134 uses long life "C" cells, but can be equipped with rechargeable batteries, or simply a power supply and battery charger combination at only \$9.95. It can be installed with only four connections as the "cheater cord" receptacle is already installed in your meter. Simply order from the factory service department.

**Uses speaker to free your hands:** You can be sure that you have tuned in the correct station when you listen to it . . . but headphones get in the way. The FS134 uses a self-contained sound system and speaker to "free you up."

**Both 75 and 300 ohm match:** Coaxial cable provides a 75 ohm match; built-in balun matches to 300 ohm line.  
10" x 9" x 5" 9 lbs.

### SPECIFICATIONS

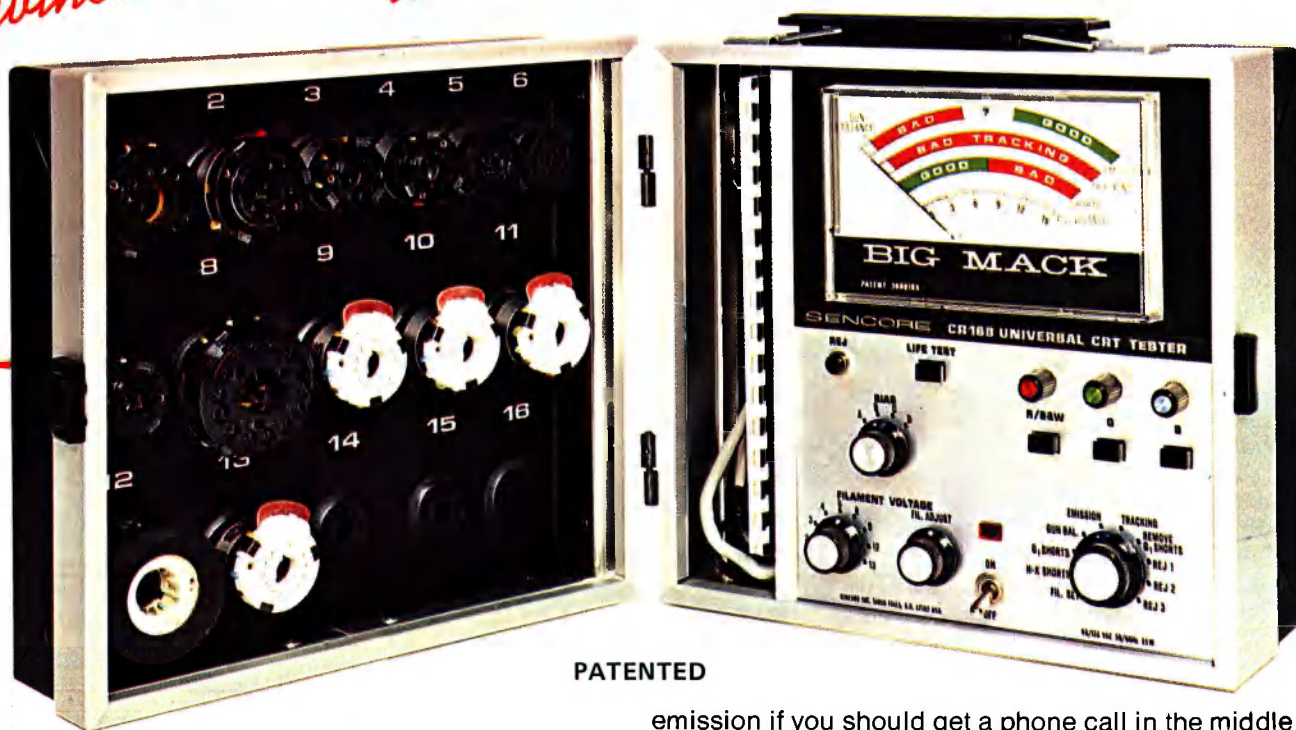
here is your checklist of why our customers buy the Sencore

## CR168 BIG MACK AUTOMATIC CRT TESTER

- ✓ Now the only tester that tests them all including the newest RCA 110 Degree Color tube and 17" Japanese Trinitron.
- ✓ It's Automatic Tracking: You can't make a mistake in calculations and replace a good expensive color CRT.
- ✓ You can show your customer exactly what is wrong with the color CRT, step by step, with the function control. Every reading is on the large 7-inch meter. No more hard-to-read lights to confuse your customer. It's a tube salesman.
- ✓ Safe, timed rejuvenation brings those weak tubes back to life.

*It's your number one customer convincer. Big Mack is there to help you make that big sale.*

\$275



PATENTED

**Operation:** Simplified. You don't even need an instruction book, just follow the function control. Big Mack will convince your customer that "she" needs a new color tube.

**Filament Set:** Insures against high or low line voltage giving false readings. Set on meter for greatest accuracy.

**Shorts Test:** Read on meter for the first time. You can show your customers heater to cathode or cathode to control grid shorts so they know the difference when an isolation transformer won't fix the trouble.

**Gun Balance:** TV set is simulated for most accurate test. G2 controls are set before any tests are made.

**Automatic Tracking:** You don't even have to push the button on Big Mack. Simply read tracking on the big meter after making emission tests. Only Sencore has this feature because it is patented.

The Big Mack even goes a step further; you don't have to go back and charge the memory bank on

emission if you should get a phone call in the middle of the check, just push the button and the memory will restore test.

**Safe Rejuvenation:** Restores life to those old CRT's that become weak. Choice of three RC timed voltages makes rejuvenation safe and easy for all tubes.

**Sockets:** All smaller, neater plug-ins that fit right in special compartment. Less costly for replacement as they cover only one CRT category. Socket No. 14, RCA In-Line Picture Tube Socket (part no. 39A67) available from Sencore Service Departments for \$10.00. Socket No. 15, GE's new Quad Line Color Picture Tube Socket (part no. 39A68) available April 1, 1975, for \$5.00.

**Meter:** Large 6 inch, D'Arsonval meter that you or your customer can read at a distance.

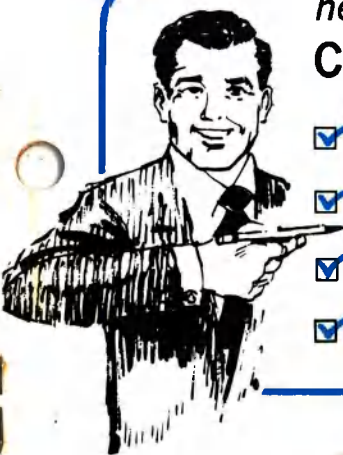
**Mechanical Description:** Black vinyl on steel with aluminum panel and divider. Removable cover for ease of testing. Large storage compartment for those extras. 10" x 9" x 5", 12 pounds.

**Power:** 105-130 volts, 50-60Hz AC.

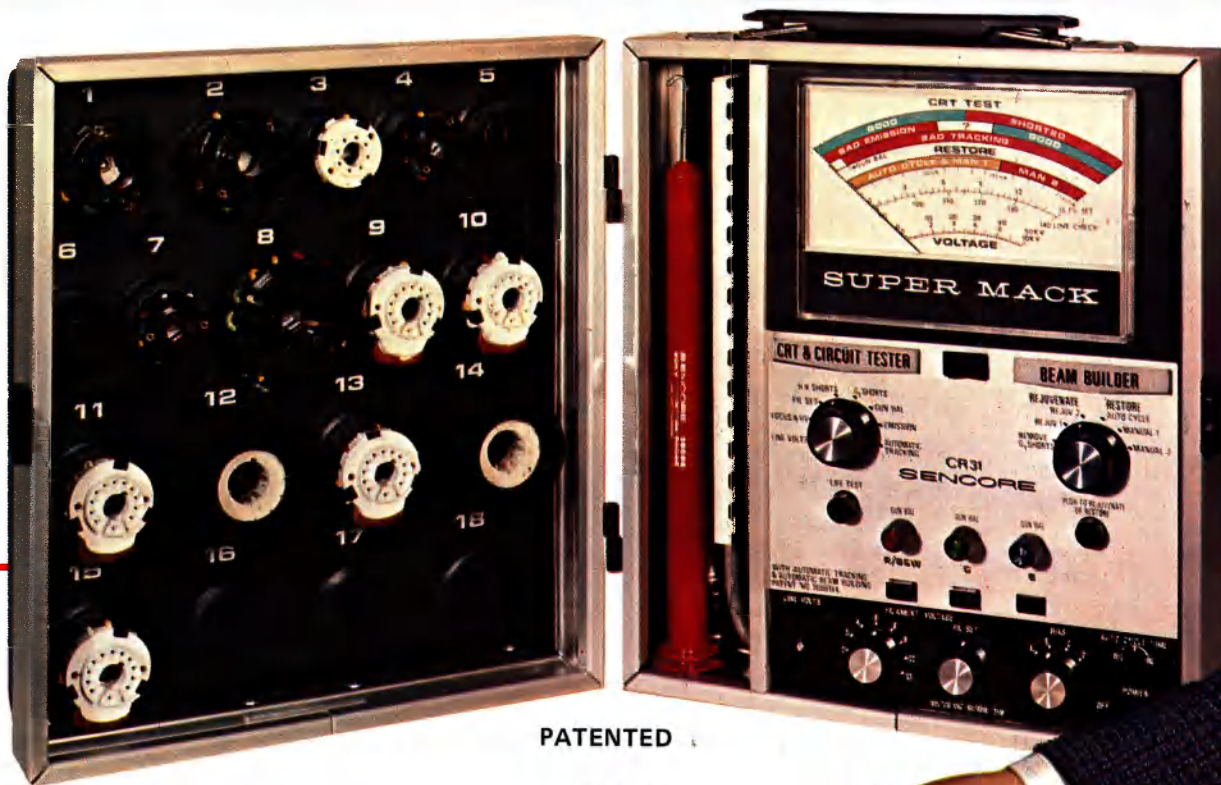
### SPECIFICATIONS

here is your checklist of why our customers buy the Sencore  
**CR31 SUPER MACK CRT TESTER AND RESTORER**

- ✓ Completely automatic, patented CRT tests, including "Good - Bad" tracking test, all on one simplified meter.
- ✓ Complete restoring capabilities with 3 automatic and 2 manual restoring levels so you can get the job done - safe, yet effectively.
- ✓ Complete TV circuit checks including 50KV probe for 2nd anode voltage checks prevent you from making a costly mistake.
- ✓ Completely equipped with 15 sockets and a full range of filament voltages so you never get "caught short."



*It completely equips you to test and restore more CRTs than any other tester*



PATENTED

**\$395**



**Operation:** Simplified. You don't even need an instruction book, just follow the function control. Super Mack will convince your customer that "she" needs a new color tube.

**True Circuit Conditions:** Filament Set: Continuously variable from 0 to 14V so you can accurately test any CRT. Set exact fil. voltage from set-up book on meter for greatest accuracy possible. Bias Control: Offers selection of G1 bias voltage from 20 to 70 volts in four steps for actual operating potentials. Gun Balance: TV set is simulated for most accurate tests by setting G2 controls before test is made.

**Shorts Test:** Read on meter for the first time. You can show your customers heater to cathode or cathode to control grid shorts so they know the difference when an isolation transformer won't fix the trouble.

**Automatic Tracking:** Completely automatic. Simply read tracking on the big meter after making emission tests. The Sencore patented exclusive memory banks store and compare emissions on industry standard 1.5 to 1 ratio.

**5 Levels of Restoration:** 2 safe, low level, RC timed rejuvenate positions, backed by a higher level Auto-Cycle that cycles the restoring current three complete times automatically. 2 manual restore positions, like other testers, for full restoring capabilities.

**Complete TV Circuit Checks:** Internally metered line voltage plus a 10Kv focus voltage probe with 50Kv adaptor for high voltage checks lets you isolate problems to circuit first, preventing you from replacing or restoring good CRTs.

**All 15 Sockets Supplied:** The most any other tester has available is 11. Super Mack supplies you with all 15, including the RCA 110° socket, the 17" Trinitron and GE new Quad line color tube socket.

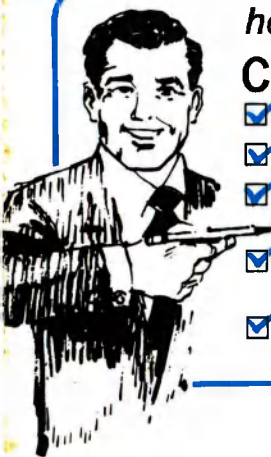
**Indicator Lights:** 2 bright indicators show you if you're on test or restore so you won't make a costly mistake.

**Meter:** Large 6 inch, D'Arsonval meter that you or your customer can read at a distance.

**Mechanical Description:** ABS plastic with aluminum panel and divider. Removable cover plus storage compartment.

**Power:** 105-130 volts, 50-60Hz.

**SPECIFICATIONS**



here is your checklist of why our customers buy the Sencore

## CG25 "LITTLE HUEY" DIGITAL COLOR BAR GENERATOR

- ✓ Positive digital locking insures stable patterns on every set.
- ✓ You can show your customer rock solid patterns, proper convergence and correct colors.
- ✓ Most complete small color bar generator on the market with channel tuning and color adjust level; just like the high priced spread.
- ✓ All digital CMOS IC chips means no timers and never any downtime. It's the latest thing going. Low power drain for long battery life. Turns itself off with automatic timing if you should forget.
- ✓ Space saving IC's allow additional room for output cable and batteries in rear. Prevents that tangled mess in your tube caddy.

*The most dependable digital IC generator on the market under \$100.*



\$99



CMOS IC's for low power drain and long battery life.

**Color Bars:** RCA licensed 10 bars across entire color spectrum.

**Horizontal Bars:** 14 bars, digital controlled.

**Vertical Bars:** 10 vertical bars, digital controlled.

**Crosshatch:** 10 vertical and 14 horizontal, digital controlled.

**Dots:** 140 small adjustable dots, digital controlled.

**Extremely Low Drain:** New CMOS IC's means shelf life for batteries.

**RF Output:** Adjustable, covers low VHF channels 2-6.

**Mechanical Description:** Unbreakable grey acrylic case. 6" x 4 1/4" x 2 1/2", 2 pounds.

**Battery:** Eveready E164 mercury or equivalent.

### SPECIFICATIONS

here is your checklist of why our customers buy the Sencore

## CG169 DELUXE COLOR KING COLOR BAR GENERATOR

- ✓ If you want the best, you'll want the 100 percent digital timed Color King.
- ✓ It just can't bounce . . . no way . . . produces rock solid patterns or your money quickly refunded.
- ✓ 75 ohm output for MATV, CATV systems, with 300 ohm balun for conventional antenna inputs.
- ✓ Only generator with temperature control. Prevents humidity build-up while in the trunk in Florida and RF drift or electrolytic freeze in the Klondike.
- ✓ Special convergence patterns: moveable single dot and single cross makes convergence and centering a snap.

*It's the industry's only all channel, all weather color generator*



\$225

**Color Bars:** RCA licensed 10 color bars across entire color spectrum.

**Horizontal Bars:** 14 horizontal bars, all digital controlled.

**Vertical Bars:** 10 vertical bars, digital controlled.

**Crosshatch:** 10 vertical and 14 horizontal bars all digital controlled.

**Dots:** 140 small adjustable dots, digital controlled.

**Single Fixed Dot:** For centering and static convergence.

**Single Fixed Cross:** For centering and static convergence.

**Moveable Cross:** For dynamic convergence.

**Moveable Dot:** For dynamic convergence.

**Both UHF and VHF Channels:** Produces TV VHF and UHF channels for complete tuner testing. Only color

generator that covers them all. You won't send back a set that won't work on a channel that you haven't checked it on.

**Impedance Matching:** 75 ohm output equips you for checking any component in MATV, CATV systems. Use the 300 ohm matching balun for conventional antenna inputs.

**RF Attenuation:** Simulates fringe conditions and checks color assurance in the shop for these areas. Especially checks color killer action for fringe reception. Only the Color King has it.

**Power:** 105-130 volts AC, 50 watts.

**Mechanical Description:** Black vinyl covered steel case with rich aluminum paneling.

**Accessories Included with Unit:** 39G72 Matching Transformer . . . . . (Replacement Price) \$5.00

### SPECIFICATIONS

here is your checklist of why our customers buy the Sencore

## SM158 SPEED ALIGNER SWEEP AND MARKER GENERATOR

- ✓ Fast hookup to prevent error; just two cables in and out.
- ✓ All crystal controlled markers. You just push the button. You can't make a mistake.
- ✓ 4 RF channels. Competition has only 2. You don't want to make a mistake if the incoming channel is overriding. You'll want a spare, both high and low channels.
- ✓ Lowest priced Sweep and Marker that you can buy through a distributor.

*The industry's  
easiest to  
use sweep  
and marker*

\$275



**Sweep Output:** Chroma, IF or RF, with front panel fine tuning.

**Sweep Width:** 15 Megahertz with base line.

**Marker Amplitude:** Unlimited. You can boost the markers right off the screen with no circuit upset. They are tiltable, too, if you are in a trap and wish to see them better.

**Marker Frequencies:** 39.75, 41.25, 41.67, 42.17, 42.67, 44.25, 45.75, 47.25 for IF alignment. 3.08, 3.58, 4.08 and 4.5MHz for chroma. Just push the button.

**RF Channels:** 3, 4, 10 and 13. Two reserve channels, one high, one low.

**Marker Injection System:** Post injection. You never upset the curve with marker height.

**Power:** 105-130 volts, 50-60Hz AC.

**Mechanical Description:** Black vinyl steel case with brushed steel panel. 7" x 11" x 6", 9 pounds.

**Accessories Supplied With Unit:** 39G22A Matching Pad ..... (Replacement Price) \$5.95  
39G23 Detector Cable ..... (Replacement Price) \$7.95

**Voltage Quadrupler Probe:** For Zenith receivers to take the response of the first IF output. Special order from service department.

Part number 39G26 ..... \$10.00

### SPECIFICATIONS



here is your checklist of why our customers buy the Sencore

## UPS164 UNIVERSAL POWER SUPPLY

- ✓ Provides all voltages needed to service every TV module and keep the repair business with the independent. A must for the future.
- ✓ One high quality, regulated, low ripple supply for every servicing need.
- ✓ Monitors voltage and current at all times to speed service or design.
- ✓ Money saving current limiting on all outputs—it can even take a dead short.

*The most rugged,  
protected power supply  
on the market -  
both voltage and  
current regulated.*



\$260

**Voltage:** 6 volts fixed to 20 amperes. 12 volts fixed to 10 amperes. 0 to 35 volts variable to 2 amperes.

**Current Adjust:** 0 to 2 amps adjustable to any in-between level by Maximum Current Set control. Protects supply and circuit under test.

**Ripple:** Less than .018 percent on 0 to 35 volt range. .2 volts peak to peak, no load, on high current ranges.

**Degree of regulation:** .15 volt per amp change.

**Battery charger:** Taper charger. Fully charged battery: 7.5 volts output on 6-volt battery; 15 volts output on 12-volt battery. Maximum charge cur-

rent: 20 amps on 6-volt position; 10 amps on 12-volt position.

**Meters:** Voltage: switched for either supply at 3 percent accuracy. Current: switched for either supply at 3 percent accuracy. Type: 3½" moving coil, D'Arsonval.

**Protection:** 100 percent current protected. A short can be placed on output terminals for an extended period of time at any setting and no harm can be done.

**Mechanical Description:** Rugged black vinyl-clad steel case with aluminum panel, 10"x 13½"x 9½", 23 pounds.

**Power:** 105-130 volts, 60Hz AC.

### SPECIFICATIONS

here is your checklist of why our customers buy the Sencore

## PS148 DUAL PURPOSE OSCILLOSCOPE/VECTORSCOPE

- ✓ Lowest priced broad band, general purpose color scope on the market today. Wide band but high sensitivity. You can see the output of a TV tuner directly.
- ✓ 7,000 volt input protection. Other scopes on the market have only 600 volts.
- ✓ It's a vectorscope too at no extra cost.



*It's a workhorse*



**\$395**

**Vertical Input Sensitivity:** 17 millivolts per inch deflection.

**Vertical Amplifier Response:** 10 Hertz to 6 Megahertz within 6DB.

**Vertical Input Breakdown:** 7,000 volts with low cap probe. 600 volts without probe.

**Horizontal Sweep Frequencies:** 5 Hertz to 500 Kilohertz in five overlapping ranges.

**Synchronization:** Positive, semi-triggered.

**Vectorscope:** Converts to vectorscope with switch and input connections in rear.

**External Inputs:** Sync, sweep, Z axis and direct connections to deflection plates.

**Power:** 105-125 volts, 50-60Hz AC, 47 watts.

**Mechanical Description:** Five-inch reserve brightness, sharp focus tube, completely shielded. Black vinyl-clad steel case with brushed steel panel. 11" x 9" x 15 1/2", 22 pounds.

**Accessories:** Direct Lo-Cap Probe: 39G11 (supplied with unit) ..... (Replacement Price) \$9.95  
Demodulator Probe: 39G3 ordered from factory service department. (not supplied) ..... \$5.75

### SPECIFICATIONS

here is your checklist of why our customers buy the Sencore  
**PS29 MINUTEMAN AUTOMATIC TRIGGERED  
 PUSHBUTTON OSCILLOSCOPE**

- ✓ It's the only completely automatic triggered, pushbutton oscilloscope on the market today for all color TV and video servicing.
- ✓ Every color and video servicing signal available with the push of a button . . . TV Vertical, TV Horizontal, 3.58 color, 5X Expand, 60Hz Line Sweep and Vector Mode.
- ✓ Automatic triggering with guaranteed solid sync (backed by TV sync separators) for rock solid waveforms—you simply push a button.
- ✓ It's a complete general purpose scope too for any signal from DC to 10MHz.

*The first and only completely automatic triggered scope for any color TV and video service.*



**\$595**

PRICE INCLUDES 5KV, 10X LO-CAP PROBE

**Exclusive Front Panel, Pushbutton Video Functions.**

**TV Vertical and TV Horizontal:** With built-in TV sync separator. Accuracy: 3%.

**3.58MHz Color:** For fast positive sync on any color signal.

**60Hz Line Sweep:** Automatically locks in for response curves in sweep alignment work. Front panel phase adjust control synchronizes scope to sweep generator for exact phasing.

**Vector:** Used with external input (B-Y), plus regular vertical input (R-Y). Full front end amplification. Ranges: 2 volts per cm or 20 volts per cm. External input impedance: 1 megohm shunted by 40 pf. Horizontal Bandwidth: 1MHz within -3DB. Less than 1% phase shift.

**Sweep Expand:** 5 times. Accuracy: 5%.

**Graticules:** Lighted 10 X 10 cm grid and 30° vector grid with automatic lighting in vector mode.

**Power:** 105-130 VAC, 50-60Hz, 60 watts.

**Accessories:** Lo-Cap Probe: 39G80, 10X Probe with 5KV rating. (Supplied with unit. Replacement price \$20.00.) Demodulator Probe: 39G81 (not supplied) BNC to Phono Connector: 39G47 (not supplied).

**Vertical Input:** Sensitivity: .01 volt per centimeter of deflection. Accuracy: 3%.

**Vertical Amplifier Frequency Response:** DC to 8MHz within 3DB; -4DB at 10MHz, usable to 15MHz.

**Vertical Amplifier Breakdown Voltage:** 5000 volts AC, 1000 volts DC with low cap probe.

**Horizontal Sweep Speed:** Triggered: 0.2 microseconds per cm to 0.1 sec per cm in 18 overlapping calibrated ranges. Accuracy: 3%.

**Triggering:** Completely automatic solid triggering for any signal above .5 cm display. Automatic baseline in absence of input signal.

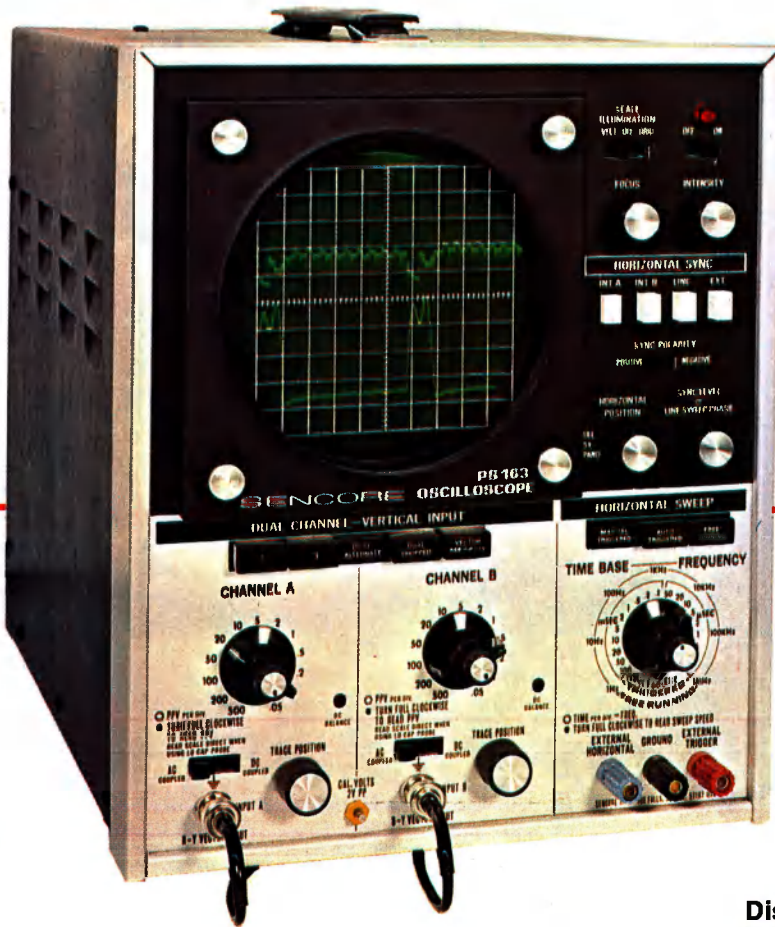
**Source Selection:** Internal, external, line, positive or negative polarity.

**SPECIFICATIONS**

here is your checklist of why our customers buy the Sencore  
**PS163 DUAL TRACE TRIGGERED ALL SOLID STATE  
 OSCILLOSCOPE**



- ✓ Phase-locked matched channels allow you to compare simultaneous waveforms within 1% laboratory accuracy.
- ✓ Makes you the envy of your technical friends when they know you are equipped for every job with the best.
- ✓ It's a triggered scope with absolute positive sync, backed by TV sync separators.
- ✓ It's wide band with high sensitivity on both channels with exclusive 5,000 volt input protection.
- ✓ It's AC or DC coupled, depending on the job.



\$795

*Big performance with  
 1% phase-locked  
 waveforms at  
 1/3 the cost  
 of others.*

(INCLUDES  
 BOTH LO-CAP  
 PROBES)



**Vertical Input** (both amplifiers): Sensitivity: .005 volt per centimeter of deflection. Accuracy: 2 percent.

**Vertical Amplifier Frequency Response** (both amplifiers): DC to 8 Megahertz within 3DB. Usable to 15MHz.

**Vertical Amplifier Breakdown Voltage** (both channels): 5,000 volts AC, 1000 volts DC with low cap probe.

**Horizontal Sweep Speed:** Triggered: .1 microsecond per cm to .1 second per cm in 19 overlapping ranges. Free Running: 1 Hertz to 1 Megahertz, overlapping. Accuracy: 2 percent.

**Synchronization:** Free Running, manual or automatic triggered. Synchronized to either input, line or external.

**Vertical Input Calibrator:** Built-in for both channels.

**Display Capability:** Either channel, alternating between channels or chopped mode of switching between channels.

**Vectorscope:** Direct from front of scope. High sensitivity: .005 volt per cm to 50V per cm direct. .05V per cm to 500V per cm using low cap probe. Frequency response: -3 DB from 0 to 7MHz.

**Power:** 105-130 volts, 60Hz, AC, 60 watts. Solid state, regulated, instant-on.

**Mechanical Description:** Black vinyl case with aluminum panel and trim. 12" x 10" x 15", 30 pounds.

**Accessories:** Lo-Cap Probe: 39G34, 10X probe with 5KV rating (supplied with unit)

Demodulator Probe: 39G41 (not supplied with unit — order from factory service department) BNC to Phono Connector: 39G47 connector for use in connecting PS163 to SM158 Sweep/Marker Generator. (not supplied with unit — order from factory service department)

**SPECIFICATIONS**



here is your checklist of why our customers buy the Sencore  
**SG165 AM-FM STEREO ANALYZER**

- ✓ The 12 signals that you need to completely service every stage of even the largest, highest priced stereo unit. It's a money maker.
- ✓ Checks every stage from antenna to speaker, including the speaker.
- ✓ Sweep and marker for alignment and IF band width check.
- ✓ Conventional stereo signal or new institute of high fidelity (IHF) modulation level. Virtually obsoletes every other stereo tester on the market.
- ✓ Patented phase - locked subcarrier insures receiver multiplex alignment to better than FCC specs.

*It's the only complete stereo analyzer with specs better than your FM station.*



PATENTED

**\$595**

**FM RF Coverage:** 87 to 109 Megahertz; unmodulated, MPX or 400 Hz sine modulation.

**AM RF Coverage:** 525 to 1625 Kilohertz; unmodulated or 400 Hz sine modulation.

**FM IF Coverage:** 10.7 Megahertz crystal controlled CW, MPX or 400 Hz sine modulation.

**AM IF Coverage:** 262 or 455 Kilohertz; unmodulated or 400 Hz sine modulation.

**FM IF Sweep:** 10.7 MHz fixed with markers at 10.7, 10.6, and 10.8 MHz.

**Marker Injection:** Post injection method with two simple leads; from detector and to scope.

**Multiplex Signal:** FCC regular stereo or IHF (institute of high fidelity) modulation with phase-locked 19KHz and 38KHz subcarrier.

**Subscription Signal:** 67 Kilohertz SCA signal for setting traps.

**Audio Signals:** 400 Hz square and sine for final amplifier distortion test.

**Meters:** 3 1/2" D'Arsonval calibrated from 0 to -40db, 0 to 10 watts, and 0 to 100 watts.

**Outputs:** RF, IF, MPX, Sweep and Audio all one common cable.

**Speaker Dummy Loads:** Speaker direct, 4, 8, 16 and 32 ohms switchable for receiver being tested. Up to 100 watts for testing purposes.

**Mechanical Description:** Black vinyl-clad steel with high quality aluminum panel and trim. 10" x 13 1/2" x 9 1/2", 16 pounds.

**Accessories Supplied With Unit:** Matching Pad and Lead Assembly (39G43) (Replacement Price) \$15.50. Detector Cable and Lead Assembly (39G45) (Replacement Price) \$5.00. Auto Radio Adapter (39G53) (Replacement Price) \$3.00.

**SPECIFICATIONS**

## RC24 RC SUBSTITUTOR "PARTS PAK"

- ✓ Cleans up those messy loose resistors and capacitors in your caddy and puts it all into one small, neat, hand-sized unit.
- ✓ Now updated for solid state service with 1000 mfd electrolytic.
- ✓ Full protection for parts, circuit and you with double surge protection circuit.

*It's a tube caddy janitor*



\$45



**Resistors:** 24 values from 10 ohms to 5.6 megohms. 1 watt to 10K, 1/2 watt over 10K.

**Capacitors:** 9 overlapping values from 100 pf to .5 mfd at 600 volts.

**Electrolytics:** Single 10 mfd, single 100 mfd at 450 volts and 1000 mfd at 75 volts.

**Mechanical Description:** Just the size of two 5U4 cartons. Acrylic non-breakable case. 1 pound.

### SPECIFICATIONS

## RC167 RC SUBSTITUTOR "THE SUBSTITUTOR"

- ✓ Exclusive parts in a drawer to help you save time and leg strain.
- ✓ Full range of resistors, power resistors, capacitors, electrolytics, and rectifiers at your finger tips.
- ✓ Now updated for solid state service with up to 2000 mfd electrolytics.
- ✓ Double protection for circuit, parts, and you with exclusive surge protector.

*It's a leg saver*



\$99

**Resistors:** 24 values from 10 ohms to 5.6 megohms. 1 watt up to 10K, 1/2 watt over 10K.

**Capacitors:** 10 overlapping capacitors from 100 pf to .5 mfd at 600 volts.

**Electrolytics:** 2 mfd, 5 mfd, 10 mfd, 20 mfd, 50 mfd, 100 mfd, 200 mfd at 450 volts. 500 mfd, 1000 mfd and 2000 mfd at 75 volts.

**Rectifiers:** Universal selenium and silicon rectifier substitutes, 1/2 ampere forward; 800 PIV.

**Protection:** Surge protector switch places resistance in series with electrolytics and then removes it when placed in circuit (automatically) so that the electrolytic cannot be heated and there will be no arc or spark. A warning light next to the switch will light in any 75 volts position if the applied voltage is over 75 volts so that you do not push the switch and apply the voltage.

**Mechanical Description:** Black vinyl with aluminum paneling. Gimble mounts allow for four way installation on bench. Parts drawer is reversible to fit any mounting. Compartments for resistors, capacitors, power resistors and rectifiers. 7 1/2" x 11" x 5", 7 pounds.

**BE156 7 in 1 DC bias supply** ..... \$49.50  
3±25 volt supplies, 1 - 75V supply.

**FC147 Patented filament checker** ..... \$12.95

### SPECIFICATIONS

# YF33 RINGER YOKE AND FLYBACK TESTER AND SWEEP CIRCUIT ANALYZER

- ✓ It's a yoke and flyback tester — will tell you a GOOD or BAD yoke or flyback 100 times out of 100 in seconds with one, simplified Patent Pending Ringing Test for all yokes and flybacks.
- ✓ It's a sweep circuit analyzer. Measures horizontal output drive signals, 10KV focus voltage, and 50KV high voltage for fast, complete sweep troubleshooting.
- ✓ Approved by leading yoke and flyback manufacturers.
- ✓ The only yoke and flyback tester that works on all of today's sets — tube and solid state.



*Save hours of frustrating guesswork on TV sweep circuits*



Accessory 10KV Probe for Focus Voltage measurements with 50KV Adapter for 2nd Anode voltage checks.

**\$195**

PATENT PENDING

**Devices Tested:** Horizontal and vertical yoke windings, horizontal output transformers, plus many horizontal circuit and general application mid-frequency coils.

**Impedance Matching Buttons:** Select the proper impedance match at the natural resonant frequency of the coil for maximum reading.

**Ringing Test:** Dynamic test counts the number of cycles a coil rings before reaching 25% damped level after 15 VP-P exciting pulse has been applied. Meter is calibrated to give GOOD reading for 10 or more cycles detected before 25% damped level, for yokes and flybacks presently in use. Sensitivity is adjustable for coils other than yokes and flybacks.

**P-P Drive Voltage:** Measures AC Peak-to-Peak voltages for horizontal output drive signal (or any audio or video signal) in 30 V and 300 V scales. Chart on YF33 back lists typical drive values for common output tubes. Frequency response: 3MHz at 3DB.

**High Voltage:** Measures 10 KVDC for focus voltage, or 50 KVDC for second anode measurements when used with optional FP201 and 39G89 probes.

**Mechanical:** Drop-proof molded acrylic and vinyl covered steel case, with protective sliding meter cover, adjustable tilt stand/handle, and convenient lead storage compartment. SIZE: 10"x5 1/2"x3 1/2". (25x14x9cm). WEIGHT: 4 3/4 lbs. (2.1Kg). POWER: 105 - 130 VAC, 50/60Hz, 10 watts.

**Accessories:** YF33 Ringer Training Tape contains 15 minute simplified instructions (included). High Voltage Probe Set: Includes FP201 10KV Focus Voltage Probe and 39G89 50KV High Voltage Probe... \$35.00.

## SPECIFICATIONS

# SENCORE IS DEDICATED TO SERVICE

## SIX FACTORY SERVICE CENTERS TO SERVE YOU BETTER

Each of our service centers is there to serve your every need. Each is fully equipped with parts, instruction books and other service data, is staffed with a field engineer on duty to help you with your technical problems, a service department for instant service,(should you need it), and a customer service gal to be sure your requests are followed through. Each station is TWX connected to the main factory in Sioux Falls. Call when you need help or have a question. You will get the right answer.

**Sencore Factory**  
3200 Sencore Drive  
Sioux Falls, South Dakota 57107  
605 339-0100  
TWX 910-660-0300

**Sencore Central**  
2711 B Curtiss Street  
Downers Grove, Illinois 60515  
312 852-6800  
TWX 910-695-3226

**Sencore Northeastern**  
1237 Central Avenue  
Albany, New York 12205  
518 459-6040  
TWX 710-444-4969

**Sencore Western**  
833 Mahler Road  
Burlingame, California 94010  
415 697-5854  
TWX 910-375-3307

**Sencore Southeastern**  
2459 Roosevelt Hwy., Suite B3  
College Park, Georgia 30337  
404 768-0606  
TWX 810-751-3546

**Sencore East Central**  
4105 Duke Street  
Alexandria, Virginia 22304  
703 751-3556  
TWX 710-832-0618

**SUPERIOR ELECTRONICS**  
1330 Trans Canada Highway South  
Dorval, Quebec, Canada Hp, H8

**MORRIS SALISS**  
GPO Box 2307  
San Juan, Puerto Rico 00936

**INTERNATIONAL DISTRIBUTORS:**  
**MAGNUS INTER-AMERICA**  
5715 North Lincoln Avenue  
Chicago, Illinois 60659

Check with your nearest Sencore Full Line Promotional Distributor for more information

Distributed by:

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**SENCORE**  
3200 SENCORE DRIVE, SIOUX FALLS, SOUTH DAKOTA 57107

(All prices in effect at time of printing. Prices and specifications subject to change without notice.)

FORM 1098P