

Engineering
Excellence
can be
Economical
and
Beautiful



EICO®

KITS & WIRED



1963



**STEREO
AND MONO HIGH FIDELITY
TEST INSTRUMENTS
HAM EQUIPMENT
CITIZENS TRANSCEIVERS
WALKIE-TALKIES
RADIOS**

The Pleasures of Kit-building

with **EICO**[®]

For most people kitbuilding is irresistibly fascinating and infinitely rewarding.

The pleasures are manifold:

There is, first of all, the pleasure of the work itself. Sitting, soldering iron in hand, putting together, piece by piece, a fine, complex component is a creative experience akin to the creation of a work of art — painting, sculpture or woodcarving. For many, immersing themselves in the building of an electronic kit is one sure way of shaking off the tensions and worries of the day. The average kitbuilder becomes so absorbed in the work that he loses track of time. Many hate to stop, even for meals, or to go to bed!

Beyond this there is the pleasure of anticipation: the pleasure of watching a complex piece of electronic equipment develop under your hand; of knowing that each bit of wire, each resistor and capacitor that you solder into place is being put there to serve its own special function in the completed component; of realizing that every move you make is a move toward the perfecting of something of lasting value.

And the pleasures of kitbuilding do not end when the last component is in place. The instrument that you build yourself is more truly *yours* than a component you buy ready-made; the instrument you create gives, and continues to give extra dividends through the years by virtue of your having put something of yourself into it. Every time you use it, you re-experience some of the creative pleasure and resultant pride that accompanied its construction.



Exclusive Quadruple Quality Control: Another Extra Precaution Only EICO Takes



INCOMING INSPECTION: all incoming parts for both kit and factory-wired production are examined by the quality control department. When satisfactory, this material is released simultaneously to both kit and wiring production lines. EICO custom designed many of its inspection test instruments to be able to check parts for stringent standards of performance.



SUB-ASSEMBLY INSPECTION: line foremen for kit production periodically inspect parts envelopes for accuracy of count. Wiring production foremen visually inspect all chassis at all stages of wiring.



FINAL PACKAGE INSPECTION: each EICO kit is packaged in an individual manner predetermined by the engineering department for the maximum protection of the contents. Line foremen inspect all phases of packaging. A shadow scale at the end of the conveyor belts checks weight accuracy to within 2 ounces.

Instructions that Instruct

The instruction book is the heart of any kit. Clear, easy-to-follow instructions are essential to kitbuilding enjoyment.

For this reason, EICO takes special pains to create instruction books that will definitely add to your creative pleasure.

EICO's instructions begin at the very beginning. Have you never held a soldering iron in your hand? EICO tells you how to hold one, how to use it, and how to recognize a properly soldered joint. Would you not recognize a #6-32 x 5/16 round head screw if you fell over it? EICO gives you a full size illustration of this and every other piece of hardware in the kit—and tells you exactly what all the numbers and all the names mean.

Every step in the construction—down to the point where your component is working perfectly—is carefully described and clearly illustrated. Furthermore, every word of the text refers to an adjacent illustration. This means you can always watch the text and the pictures at the same time.

Nothing is left to chance. Every EICO instruction book is fully tested both by electronics experts and by beginners, and no instruction book is published until beginners can put the kit together without a hitch.

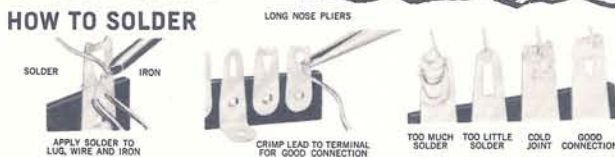
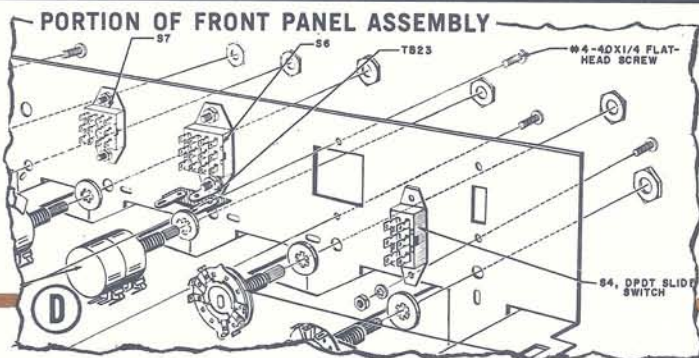
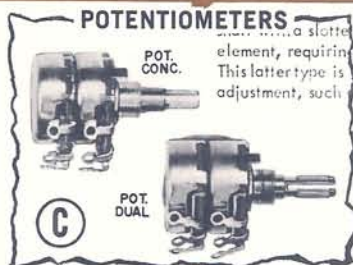
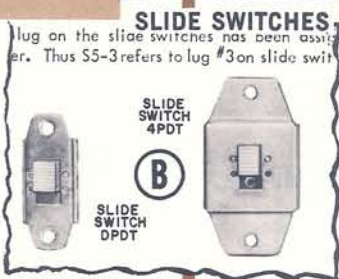
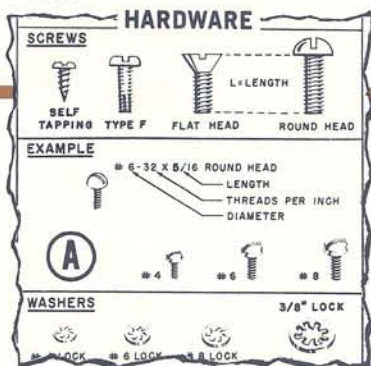
EICO® Kits... Designed to Enhance Your Creative Enjoyment

Whether you are able to realize the pleasures and reap the rewards of kit-building depends largely upon the kit you build. The pleasure will be lost if the instructions are incomplete or difficult to follow; if you feel you are working with second-rate material; or if you do not feel that you are creating a fine, precision instrument. The rewards are few if you are not able to enjoy to the fullest the results of your labor.

It is because EICO is concerned with *your* self-expression through creative electronics that EICO makes the extra effort to bring you kits that are completely satisfactory in every respect. This effort covers all aspects of mechanical and electronic engineering, industrial design, and quality control; and it has behind it EICO's 17 years of experience in satisfying the creative needs of kitbuilders everywhere. That is why, with EICO you can be assured of:

- **Superb, no-compromise engineering**... EICO engineers go all out to design instruments that will look and perform like the finest professional equipment. All EICO instruments are characterized by sound engineering practice, wide margins of stability and safety, and the absence of gadgetry merely for the sake of gadgetry.
- **Rugged construction**... heavy gauge topgrade steel cabinets; top quality enamels; prepunched cadmium-plated steel chassis; best hardware—all add up to lifetime durability.
- **Latest and finest parts**... EICO continuously searches the U. S. and world markets for the best... EICO was the first kit manufacturer to use the West German low-noise resistors... first to use the British Mullard Audio tubes... EICO initiated the development of the new tube type 12DW7.
- **Dramatic high styling**... EICO's new dramatic series of stereo hi-fi components establishes a new standard of visual beauty (in a chromatic brown-and-pale-gold motif)... in the other hi-fi components, the subdued baked enamel brown of the cabinets contrasts dramatically with the rich high-luster of the brushed brass front panels.

All components used in kit construction which might be unfamiliar to you if you are a novice in electronics, are fully described and illustrated in the introduction (A, B, C). When the time comes for you to put them in place (D), you are thoroughly familiar with them, and have no trouble recognizing them.



Complete instructions—and all necessary illustrations—everything you need to do expert soldering right from the start, are included in EICO instruction books.

to Assure You of the Finest:



FINAL TEST INSPECTION: all EICO factory assembled equipment is completely and meticulously hand wired throughout. Each factory assembled unit is 100% "live" final tested throughout for each feature and function—no "spot" or "partial" checking—nothing is left to chance. Since the identical parts are used for simultaneous kit manufacture, this final live inspection is an additional vital quality control on every kit part as well. This step is exclusive with EICO and is another reason why EICO has the reputation for the fewest field rejections in the industry.

- **Intelligent layout**... trouble-free point-to-point wiring; thoughtful, careful separation of component parts to avoid objectionable interaction.
- **In-stock availability**... only EICO maintains a nation-wide network of over 2000 neighborhood dealers who will gladly demonstrate any EICO product for you and give you any additional information you may want. Furthermore—you pay your EICO dealer *only the advertised price*.
- **You save up to 50%, too**... EICO advanced no-compromise engineering and high-volume purchasing result in lowest costs for the highest quality parts. When you build a kit you add to the savings achieved by avoiding the cost of factory labor and time.

Mr. Electronic Engineer:

EICO's constant growth and diversification present you with excellent career opportunities for creative design in all fields of electronics.

EICO offers you the ultimate freedom of self expression: the opportunity to use your creative ability to see a product through from initial design to final production.

If you are interested, please write to the Chief Engineer.

Uncompromising Engineering Excellence...

9 New Features Now in the New EICO RP 100 Transistorized Stereo/Mono 4-Track Tape Deck

A great tape recorder made greater:

1. New professional studio recording hysteresis-synchronous capstan motor: 24 stator slots for ultra-smooth drive, ultra-quiet and vibrationless professional bearing system.
2. Two new take-up and rewind reel motors, both extra-powered for effortless operation.
3. New cored-out steel capstan flywheel with all the mass concentrated at the rim for improved flutter filtering.
4. New optimally designed capstan drive belt brings wow down to negligibility.
5. New relay provides instantaneous extra power to the take-up reel motor at start to minimize tape bounce. Provides near-perfect stop-and-go operation and eliminates any risk of tape spillage when starting with a nearly full take-up reel.
6. New automatic end-of-tape stop switch cuts off take-up reel motor power. Also permits professional editing techniques, whereby tape being edited out runs off the machine while you are listening to it.
7. Playback preamps remain "on" during stop-standby mode to permit cueing.
8. Recording level adjustment during stop-standby.
9. Shock-absorbent helical spring tape lifters practically eliminate tape bounce at start of fast winding.



"Here, for the first time, a consumer can acquire a tape deck for under \$300 which will do almost everything sensationally well, and which compares favorably with expensive professional equipment in virtually all respects."—James Goodfriend, MODERN HI-FI & STEREO GUIDE.



TOUCH A BUTTON — AND THE POWER IS ON

(You'd never know it, if there were no pilot light: There's no hum, buzz, or vibration. The 14 transistors in the record and playback preamps literally do *not* "warm up": they are ready instantly—never radiate heat to damage tapes or sensitive components.)



TOUCH A BUTTON — AND THE TAPE IS PLAYING

(—giving you flawless, flutter-free, stereo or mono performance at 7½ or 3¾ ips, through an entirely independent 6-transistor stereo/mono preamplifier... Watch the tape closely, as it passes across the heads, and you will see a phenomenon that goes a long way toward explaining why the sound you hear is so perfect: *The tape seems to be standing still!* There is no tape weave, no flutter, no variation in speed or tension to betray its motion. Tape weave is eliminated by tape guides precision-ground to .001" accuracy; tape flutter, and variations in tape speed and tension are eliminated by the ultrasmooth operation of the hysteresis synchronous capstan motor, by the precision construction of the capstan, by reverse torque applied to the supply-reel motor, and by mechanical filtering applied directly to the tape.)



TOUCH A BUTTON — AND THE TAPE IS STANDING STILL

(—brought to a halt by fast, *frictionless* electro-dynamic braking: DC applied to reel motors. You *have* to push the STOP button before you can send your RP100 from one operating mode to another—absolute insurance against sudden changes in direction which *might* snap weak tape. And, because the STOP button is also the POWER ON button, you always know that when you turn the power on, you cannot inadvertently go into any operating mode. In other words, your RP100 always "starts" standing still.)



TOUCH A BUTTON — AND THE TAPE IS REWINDING OR SPEEDING AHEAD IN FAST FORWARD... with the tape lifted away from the heads

(And, as the tape starts racing backwards or forwards, two highly polished "tape lifters" slide forward and move the tape away from the heads. This is important: the iron oxide coating on all tapes is an abrasive. The erase, record, and playback heads are precision-made components with gaps lapped to optical standards. Tape sliding swiftly past can quickly wear away these gaps, widen them, make their edges rough... Tape lifters make *sure* that the tape never touches the heads when it is moving faster than at normal play or record speed.)



Semikit Model RP100K
Tape transport assembled and tested; electronics in kit form
\$299.95

Wired Model RP100W
Handwired throughout by skilled American craftsmen
\$450.00

An original, exclusive EICO product designed and manufactured in the U.S.A. (Patents Pending)



TOUCH TWO BUTTONS — AND YOU'RE RECORDING

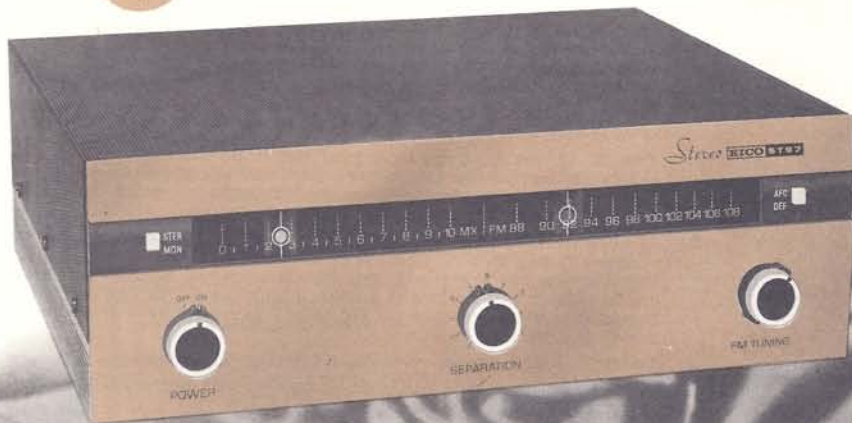
(—instantly, silently, with no distortion or slurring. The RUN and REC buttons *must* be pressed simultaneously for recording to start: your protection against inadvertently erasing valuable tapes.) *And only the RP100 gives you all these professional, studio-quality recording features:*

- **Off-the-tape monitor:** Separate record and playback electronics and heads permit you to hear the sound from the tape while it is being recorded. This enables you to be sure that you are feeding the proper signal(s) into the tape at all times, and to adjust for proper signal recording levels.
- **Separate line and microphone mixing level controls in each channel.** Microphone input designed for commonly available dynamic microphones with high impedance output.
- **Dual meters for stereo recording.**
- **Sound-on-sound without changing connections:** Add your own vocal or instrumental solo to professionally recorded backgrounds; sing or play duets or quartets with yourself—simply by turning knobs on the control board. (The RP100's push-button ease and convenience make this feature extremely valuable for language study.) You can also record two separate and distinct programs at the same time!
- **Perfect pitch and timing accuracy:** The hysteresis synchronous capstan motor, unaffected by natural line voltage variations, and the capstan shaft of hardened stainless steel ground to an accuracy of ±.00015"; maintain a timing accuracy of ±0.15% (±3 seconds in 30 minutes).

Engineering
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Beautiful to Look at and...



For outstanding Stereo FM and Mono FM reception — a brilliant new example of EICO's no-compromise, advanced engineering...

FM-Multiplex Stereo Tuner ST97

Semi-Kit \$99.95 Wired \$149.95

Includes Metal Cover and FET

When high fidelity standards of signal-to-noise ratio, separation, and freedom from distortion and interference are required, you need a tuner designed with perseverance and painstaking care. The EICO ST97 leaves no problems unsolved and establishes the margins of superiority in every direction that add up to assured quality.

To extend this assurance even to inexperienced kit builders has meant extensive pre-fabrication and pre-alignment of component assemblies so that no critical job is left to introduce an element of risk.

The kind of quality evidenced by the specifications is *already built-in* the kit you buy, both by the ready-to-use component assemblies and the most severe quality control applied to the parts you will wire yourself. The EICO ST-97 FM Stereo Tuner consists basically of a front-end, an IF strip, and a stereo demodulator, as well as tuning and stereo program indicators and a conventional full-wave power supply.

The Front-End: Consistent and reliable printed circuit. Ultra-sensitive, stable, and low noise. Wide-band design. Rugged plated steel housing for protection and shielding. Meets FCC radiation requirements. Precise temperature-compensation for freedom from drift without AFC. AFC provided with defeat for convenience. Indirect gear drive is backlash-free and eliminates possibility of microphony.

The IF Strip: Four IF amplifier-limiter stages (all that will do any good) and an ultra wide-band ratio detector for perfect limiting and flat frequency response. Designed with the utmost practicality so that the simplest alignment is also the alignment for highest sensitivity and practically lowest distortion. (Important to you if a service alignment is ever required.) Output is flat to the limit of the composite stereo signal frequency spectrum to eliminate any need for roll-off compensation in the stereo demodulator. The circuit provides a take-off point for the tuning-eye circuit that gives unmistakable indication of the center of each broadcast channel and the point at which maximum sensitivity and lowest distortion is obtained.

The Stereo Demodulator: Ten stages for unequalled performance capabilities. EICO's brilliantly-engineered zero phase-shift, filterless detection circuit (patents pending) eliminates loss of separation due to phase-shift in the stereo sub-channel before recovery. Complete rejection of storecasting interference. No spurious outputs that can interfere with high quality tape recording. Cathode follower driven, sharp cut-off 15kc low pass filters in each output channel. Circuit features include: A unique self-limiting 19kc amplifier stage that provides outstanding sensitivity on weak signals but prevents overloading on strong signals; a low-distortion push-pull 38kc oscillator; a full-bridge demodulator that minimizes residual 38kc even before filtering; a full-wave rectifier that develops the 38kc sync voltage for the oscillator from the amplified 19kc and also provides a d-c voltage that controls a triode stage operating a neon lamp stereo broadcast indicator; and a front-panel separation

BUILDING THE SEMI-KIT IS EASY:



Pre-wired and pre-aligned FM Front-End



Pre-wired and pre-aligned 4 IF stages and Ratio Detector

The two most critical sections, the front end and 4 IF's through to the detector, are entirely pre-wired and pre-aligned for best performance on weak signals (fringe area reception). For the third most critical section, the heart of the stereo demodulator, you simply mount and solder the components on a high quality circuit board. Pre-aligned coils eliminate all adjustments. The rest is non-critical and easily accomplished with the clearest pictorial drawings and most thorough-going step-by-step procedure in the industry. The completed kit does not require alignment or adjustments.

"From its antenna terminals to the outputs of its stereo demodulator, the EICO's design is as sophisticated as it is successful — without the presence of, or need for, an imposing array of knobs. . . . The tuner's capture ratio (its ability to accept the stronger and blot-out the weaker of two stations beaming at the listener from opposite directions on the same frequency) is really excellent: a very low 3 db. In effect, this makes the ST-97 a still "hotter" tuner for the fringe area dweller. Second is the fact that EICO's designers go to the extraordinary lengths of specifying the tuner's total stereo harmonic distortion — less than 1.5%. This is fairly audacious, since other tuners that do not state whether their distortion was measured in mono or stereo operation are usually measured in the less critical mono mode, and therefore look more impressive. The EICO's fully-specified figure, however, together with the IHFM ratings of 0.1% and 0.6% for IM and harmonic distortion respectively, is fine indeed. . . . superb stereo performance — which, at \$99.95, is quite a bargain."—John Milder, Technical Editor, MODERN HI-FI & STEREO GUIDE.

control that can increase separation under extreme fringe-area conditions. The audio outputs are automatically gain-balanced on either stereo or mono and are at the correct level for feeding to the tuner inputs of an integrated stereo amplifier or pre-amplifier.

The Operation: Two slide-rule dials in a line: one, a station frequency dial with the famous EICO "eye-tronic®" tuning-eye travelling along it to indicate the exact center of each broadcast channel; the other a logging dial with an automatic stereo indicator lamp travelling along it in tandem with the tuning-eye to indicate when the station tuned in is broadcasting stereo. The five panel controls are FM TUNING, SEPARATION, POWER ON-OFF, AFC-DEFEAT, and STER-MON. The use of these controls is very simple and described in the operating instructions.

The Performance: Pre-production field tests brought back the report "Definitely a fringe-area stereo tuner," which is simply the meaning of our laboratory measurements. We know, for example, that full limiting is achieved at 10 μ V input signal, meaning that the low distortion and noise specifications (the full benefits of FM) will apply to all but the most distant and difficult-to-receive stations. The sharp selectivity you need when a tuner is that sensitive is here also (a strong local station and a low-power station 100 miles distant separated by only 0.4mc each had its own sharp tuning-in point on the dial). While signal levels as low as 2.5 μ V will produce phase-locking for full stereo separation, very strong local signals will produce no higher output from the FM detector than a 10 μ V signal and will not be degraded in quality by overloading the stereo demodulator. Distortion is very low, both in mono and stereo, so that the sound you hear has that sweetness, clarity, and freedom from grating harshness that results from absence of distortion. The stereo output signals are so clean that there is not a sign of the 19kc pilot carrier or the re-inserted 38kc sub-carrier visible on a scope presentation.

The Look: Massive extruded aluminum panel and side rails, exquisitely brushed and anodized pale gold, with baked epoxy brown, perforated steel cover.

SPECIFICATIONS: Antenna Input: 300 ohms balanced. IHFM Usable Sensitivity: 3 μ V (30db quieting), 1.5 μ V for 20db quieting. Sensitivity for Phase-Locking (Synchronization) in Stereo: 2.5 μ V. Full Limiting Sensitivity: 10 μ V. IF Bandwidth: 280kc at 6db points. Ratio Detector Bandwidth: 1mc peak-to-peak separation. Audio Bandwidth at FM Detector: Flat to 53kc discounting pre-emphasis. IHFM Signal-to-Noise Ratio: —55db. IHFM Harmonic Distortion: 0.6%. Stereo Harmonic Distortion: less than 1.5%. IHFM IM Distortion: 0.1%. Output Audio Frequency Response: \pm 1db 20cps-15kc. IHFM Capture Ratio: 3db. Channel Separation: 30db. Audio Output: 0.8 volt. Output Impedance: low impedance cathode followers. Controls: POWER, SEPARATION, FM TUNING, STER-MON, AFC-DEFEAT. Tubes: 1-ECC85, 5-6AU6, 1-6AL5, 1-12AT7, 2-12AU7, 1-6D10 (triple triode), 1-DM70 (tuning-eye), 1-EZ80 rectifier 6 signal diodes, 1 neon lamp. Power Source: 117V, 60cps; 60 watts drain; extractor post fuse. Size (HWD): 5 $\frac{1}{8}$ " x 15 $\frac{1}{8}$ " x 11 $\frac{1}{8}$ ". Weight: 17 lbs.

*Actual distortion meter reading of derived left or right channel output with a stereo FM signal fed to the antenna input terminals.

Add 5% in the West. Slightly higher in Canada.

Beautiful to Listen to



40-Watt Integrated Stereo Amplifier ST40

Kit \$79.95 Wired \$129.95

Includes Metal Cover

"Attractively styled, sound conservative design, with many of its characteristics being equal to some of the best designs available... construction manual is so detailed and well-illustrated..."—ELECTRONICS WORLD

"The Eico ST40 exhibits all of the well-known Eico electronic design knowhow... it is a lot of amplifier for the money... meets its published specifications... In summation, it is an easy building integrated stereo amplifier kit of handsome appearance with excellent specifications for its category—an excellent buy for those with a modest budget."—AUDIO

The ST40 will accept, control, and amplify signals from any stereo source. Separate pairs of inputs are provided for: Preamplified tape, tape head, magnetic changer cartridge, magnetic turntable cartridge, FM-AM, AM-AM, and FM-Multiplex. For each stereo source there is a separate pair of inputs and a separate position on the selector switch. Other controls include tape monitor switch; separate level and balance controls; balance check switch; scratch and rumble filters; loudness compensation switch; and full individual feedback-type bass and treble tone controls for each channel. 4-, 8-, and 16-ohm speaker connections, plus third channel speaker connection direct to 3rd speaker.

The ST40 contains two audio power amplifiers, each conservatively rated at 20 watts, and employing a voltage amplifier, a split-load phase inverter, and a pair of self-biased 7591 output tubes. The preamplifier-control section of each channel includes a dual-triode preamplifier with equalization in a loop around both stages for minimum distortion, and a dual-triode in a variable inflection type tone control circuit for best control action and lowest distortion due to feedback. Other important design features (characteristic of all EICO products) include: rugged, generous chassis, allowing maximum separation of power tubes from each other and from heat-sensitive components; trouble-free point-to-point wiring; high quality audio output transformer with grain-oriented steel, extensively interleaved windings. Heavy duty power transformer, filter electrolytics and rectifier tube operate well below maximum ratings to insure long life.

SPECIFICATIONS: Output Power: 40 watts (two 20-watt channels) continuous; 80 watts peak. IM Distortion: 1% at 40 watts. Harmonic Distortion: Less than 1% 40-20,000 cps within 1 db of 40 watts. Frequency Response (2 watts—1 watt each channel): ± 1 db 12-25,000 cps. Inverse Feedback: 18 db. Stability Margin: 11 db. Damping Factor: 11. Sensitivity* (input for 20 watts): mag. phono—3 mv; tape head—1.75 mv; FM, AM, Multiplex, Tape—360 mv. Hum and Noise Level* (below 20 watts): mag. phono—63 db; tape head—54 db; tuners, auxiliaries—78 db. Tone Control Range*: ± 15 db at 50 cps and 10 kc. Speaker Connections*: 4, 8, and 16 ohms. Tubes: 2-12AX7, 4-12DW7, 4-7591, 1-GZ34 rectifier. Power Source: 117 v, 60 cps. Power Consumption: 165 watts. Size (HWD): $5\frac{1}{8}'' \times 15\frac{1}{8}'' \times 13\frac{1}{8}''$. *each channel

70-Watt Integrated Stereo Amplifier ST70

Kit \$99.95 Wired \$149.95

Includes Metal Cover

"The ST70 had excellent power-response characteristics, putting out 35 watts from 20,000 cps down to about 30 cps, with a roll-off below this frequency. At 50 cps, 1,000 cps, and 10,000 cps, harmonic distortion was 0.2 per cent at 30 watts output and below 0.5 per cent at 35 watts output. IM distortion was below 0.8 per cent at 35 watts. Low-level inputs were very sensitive: magnetic-phono sensitivity was 4.0 millivolts, and tape-head sensitivity was 2.2 millivolts with $7\frac{1}{2}$ ips equalization."—HiFi/STEREO REVIEW.

Quality-first, completely flexible stereo high-fidelity at moderate cost. Fully-equipped control panel allows you to enjoy normal or reverse stereo using both of the identical 35-watt amplifiers, or unsurpassed mono listening using either amplifier alone. Has separate pairs of inputs for preamplified tape, tape head, magnetic changer cartridge, magnetic turntable cartridge, FM-AM, AM-AM, and FM-Multiplex. Controls include selector switch for choosing stereo inputs; tape speed equalizer and tape monitor switches; separate level and balance controls; balance check switch; scratch and rumble filters; speaker-phase reversal switch; loudness adjustment switch; full individual feedback-type bass and treble tone controls for each channel. Third channel speaker connection. Each audio power amplifier of the ST70, conservatively rated at 35 watts, employs the thoroughly proven cathode-coupled, phase-inverter circuitry, preceded by a direct-coupled voltage amplifier. Fixed-biased push-pull 7591's are used in the output stage and provision is made for both bias and dc adjustment. The preamplifier-control section of each channel includes a dual-triode preamplifier with equalization in a loop around both stages for minimum distortion, and a dual-triode in a variable inflection type tone control circuit for best control action and lowest distortion due to feedback.

In addition, the ST70 is characterized by those hallmarks of quality which are expected of all EICO products: Clean, wide spacing of components, with particular attention paid to keeping heat-sensitive components a sufficient distance from power tubes; straightforward point-to-point wiring simplifying kit-building; highest quality output transformers; filter electrolytic and rectifiers operating well below maximum ratings to insure long life.



Each unit is a complete stereophonic high-fidelity control center plus two separate, powerful, expertly-designed amplifiers all on one chassis. Mode switches on front panels enable you to:

- Play either amplifier alone
- Use both amplifiers together for normal stereo, or for reverse stereo
- Use both amplifiers together for enhanced mono listening thru two speaker systems



SPECIFICATIONS: Output Power: 70 watts (two 35-watt channels) continuous; 140 watts peak. IM Distortion: 1% at 70 watts. Harmonic Distortion: less than 1% from 25 to 20,000 cps within 1 db of 70 watts. Frequency Response (2 watts—1 watt each channel): $\pm \frac{1}{2}$ db 10-50,000 cps. Inverse Feedback: 17 db. Stability Margin: 10 db. Damping Factor: above 6. Sensitivity* (input for 35 watts): mag. phono—4 mv; tape head—2 mv; tuners, auxiliaries—0.5 v. Hum and Noise Level* (below 35 watts): mag. phono—63 db; tape head—54 db; tuners, auxiliaries—78 db. Tone Control Range*: ± 15 db at 50 cps and 10 kc. Speaker Connections*: 4, 8, and 16 ohms. Tubes: 3-12AX7, 2-12DW7, 2-6SN7GTB, 4-7591, 1-GZ34 rectifier. Power Source: 117 v, 60 cps. Power Consumption: 150 watts. Size (HWD): $5\frac{1}{8}'' \times 15\frac{1}{8}'' \times 15''$. *each channel

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All the most critical and difficult sections—the AM and FM, RF and IF stages, the FM “front end,” and the eye-tronic tuning assembly—prewired and prealigned at the factory, reducing wiring to a minimum and assuring perfect performance on all sets built from the kit.

FM Multiplex Autodaptor MX99



(Patent Pending)
Kit **\$39.95**
Wired **\$64.95**
Incl. FET
Cover Optional **\$2.95**

“An original EICO contribution to the art of FM multiplex reception”

The new EICO MX99 FM Multiplex Autodaptor (Patent Pending) incorporates the best features of both matrixing and sampling techniques. The unit automatically delivers stereo on a stereo broadcast signal, and mono from a mono signal without being touched. The stereo signal is automatically gain-balanced and the mono signal automatically equal from both outputs without adjustment. An indicator lamp turns on when the station selected is broadcasting multiplex stereo.

The design features freedom from phase-distorting filters in either the main or sub-channel paths which can cause loss of separation. Nevertheless this design provides the required or better-than-required suppression of all spurious signals including SCA (67KC) background music carrier, reinserted 38KC sub-carrier, 19KC pilot carrier and all harmonics thereof. This is achieved partly through an original technique for deriving the left and right signals and sharp ultrasonic filters after the signals are derived. All of the foregoing is very important for high quality tape recording, where spurious signals can beat against the tape recorder bias oscillator and result in audible spurious tones in a recording. This adaptor will synchronize with any usable output from the FM tuner and will demodulate without significant distortion tuner outputs as high as 7 volts peak-to-peak (2.5 volts RMS).

The MX99 is self-powered, and includes low impedance cathode follower outputs. External controls include a multiplex defeat switch (to permit normal automatic stereo/mono operation or to obtain main channel only on a stereo signal when desired), and a separation control. A separation of 35db between channels is typical and overall gain of unity is provided from input to output on both stereo and mono. The MX99 is designed for all EICO FM equipment (HFT90, HFT92, ST96), and any other component quality, wide band FM tuners provided with a multiplex output.

Tubes: 2-12AU7, 1-12AT7, 1-6AU6, 1-6D10, 1-6X4 and 6 diodes. **Size (hwd):** 3-9/16" x 6-7/16" x 9-1/4". **Weight:** 7 lbs. **Power Requirements:** 117V, 60 cps; 37 watts drain.



“United States Testing Co., Inc. feels that both the tuner (ST96) and the adaptor (MX99) represent good value for the cost. Both kits are fairly easy to build and should provide satisfactory mono and stereo reception in all but the weakest of fringe areas. The instruction manuals were found to be very clearly written and carefully prepared, so that diagrams and printed directions for a given portion of the work all were contained in the same page folds . . . a pair of neat and efficient kit packages.” — HIGH FIDELITY

“... the adaptor performed . . . from the moment he soldered the last joint. The price is ‘worth it — and more.’ EICO’s FM stereo rates with the best I’ve heard.” — CHICAGO SUN-TIMES

“Combines many features of more expensive stereo tuners with the appeal of a relatively low-cost kit that can be constructed by the novice.” — ELECTRONICS WORLD

A brilliant new example of EICO's no-compromise, advanced engineering . . .

FM-AM Stereo Tuner ST96

Kit **\$89.95** Wired **\$129.95** Includes Metal Cover and FET

Equipped with built-in connection for STEREO FM-Multiplex. Superb, separate AM and FM tuners, each capable of providing perfect, distortion-free, drift-free reception, mounted on one compact chassis: Play them together for FM-AM stereo reception • Play them separately for FM mono or AM mono reception — (or both at the same time! Move one speaker into another room, and listen to your favorite programs on FM while other members of the family hear theirs on AM!) • Plug in FM-Multiplex adaptor for the ultimate in FM stereo broadcasting.

Both Tuners Feature: Exclusive, precision, prewired eye-tronic® traveling tuning indicators which contract into exclamation points at the exact center of each broadcast channel • Sliderule dials • Effortless, smooth, precise flywheel tuning • Amazingly low interstation noise • Prewired, prealigned RF and IF stages.

FM Tuner Features: Prewired, prealigned, “front end” housed and completely shielded in a solid aluminum-zinc die-casting, providing fabulous sensitivity, low noise and low oscillator radiation, entirely stable and guaranteed drift-free • Switched AFC (Automatic Frequency Control) • AGC (Automatic Gain Control) • Stabilized low limiting threshold assuring excellent performance from weaker signals • Broadband ratio detector for improved capture ratio and easier tuning.

AM Tuner Features: Switched “wide” and “narrow” band-pass; “narrow” bandwidth (to 7 kc) essential for picking up weak or distant stations with minimum of interference; “wide” bandwidth (to 14 kc) necessary for the “highest-fi” available on AM • 3-gang tuning capacitor • Built-in ferrite loop antenna and tuned RF stage ensure highest selectivity and sensitivity • High Q filter eliminates 10 kc whistle without noticeably reducing response at 9000 kc.

Panel Controls Include: Separate AM, FM tuning; separate AM, FM level controls; selector switch which allows you to choose AM alone, FM alone, AM-FM stereo (or simultaneously with separate programs), or FM-Multiplex, with the turn of a single knob.

SPECIFICATIONS: FM Tuner: Sensitivity: 1.5uv for 20 db quieting; Selectivity: 250kc IF bandwidth (6 db down); Frequency Response: 20-15,000 cps ± 1 db; Image Rejection: 40 db; Hum Level: 60 db down; Drift: less than 2 parts in 10,000 from cold start; Tuning Range: 87.5-108.5 mc; Output Level: 2.5v for 100% mod.

AM Tuner: Sensitivity: 3uv for 1.0v average output at 20 db S/N ratio; Selectivity: overall IF bandwidth of 18kc at “wide bandwidth,” 9kc at “narrow bandwidth,” 6 db down; Frequency Response: 20-9,000 cps on “wide bandwidth,” 20-4,500 cps on “narrow bandwidth”; Image Rejection: 60 db; Hum Level: 60 db down; Drift: negligible; Tuning Range: 540 to 1650kc; Output Level: 1.0v average. Size (HWD): 5 1/8" x 15 7/8" x 13 1/8". Tubes: FM: 1-ECC85, 3-6AU6, 1-6AL5, 1-12AU7, 1-DM-70 tuning indicator; AM: 2-6BA6, 1-6BE6, 1-12AU7, 1 crystal diode det., 1-DM70; EZ80 rectifier. Power Requirements: 117V, 60 cps; 45 watts drain.



TOP VIEW, showing neat, spacious trouble-free arrangement of component parts. Note prewired, prealigned FM front end (in upper right-hand corner), completely shielded in die-cast housing.



REAR VIEW, showing multiplicity of outputs and inputs. Note plugs for multiplex adaptor, and for tape recorder (enabling you to record AM-FM or FM-Multiplex broadcasts directly on tape).



FM Tuner HFT90

- monaural FM reception
- stereo FM-Multiplex reception with Adapter
- stereo FM/AM reception with matching EICO AM Tuner or equivalent

Kit \$44.95 Wired \$69.95
Metal Cover E3: \$3.95 Includes FET

"One of the best buys in high fidelity kits"—AUDIOCRAFT
"An excellent kit . . . and at a very attractive price"—AUDIO

"Audio quality . . . excellent; its frequency response very wide, its distortion low. Noise pickup . . . was minimal. Drift . . . absolutely absent . . . would lock into a station in 30 seconds—and stay locked in!"—ELECTRONICS ILLUSTRATED

"Without question an extraordinary value"—AMERICAN RECORD GUIDE

Among the most advanced of FM tuners, the HFT90 equals or surpasses wired tuners up to three times its price. With a sensitivity more than six times that of other kit tuners and equaling the most expensive wired tuners, the HFT90 provides excellent reception even in fringe areas. Other features include: eye-tronic tuning; automatic gain control; stabilized low limiting threshold for excellent performance from weaker signals; broadband ratio detector for improved capture ratio and easier tuning; full-wave rectifier and heavy filtering for a stable dependable power supply.

SPECIFICATIONS: Sensitivity: 1.5 uv for 20 db quieting*, 2.5 uv for 30 db quieting, full limiting from 25 uv. Inputs: 300 ohm balanced. Frequency Response: Uniform from 20 to 20,000 cps ± 1 db. IF Bandwidth: 260 kc at 6 db points. Detector Characteristic: Peak separation of 600 kc. Linear bandwidth of 400 kc. Broad-band ratio detector preceded by stabilized limiter stage. Stability: Maximum drift of 20 kc from cold start. Stable after approximately one minute. Radiation: Complete shielding of oscillator circuit and tube in preassembled unit reduces radiation to comply with FCC requirements. Output: Two provided: cathode follower and multiplex. Cathode follower permits use of up to 200 ft. of connecting cable. For 10 uv input with 75 kc deviation, an audio output of 1.0 volt is obtained. Hum: 60 db below 1 volt. Controls: Tuning, Level/Power ON-OFF. Tubes: 1-ECC85/6AQ8 grounded grid r-f amplifier and reflex converter; 2-6AU6 IF amplifiers; 1-6AU6 IF amplifier/limiter; 1-6AL5 dual diode detector; 1-DM70 tuning indicator; 1-6C4 cathode follower output; 1-6X4 full-wave rectifier. Power: 110-125 VAC, 60 cps; 40 watts drain. Size (HWD): 3 $\frac{3}{8}$ " x 12" x 8 $\frac{1}{4}$ ". Weight: 10 lbs.
*Typical unit, measured with Marconi TF 955 A/2 FM-AM Signal Generator.



AM Tuner HFT94

- monaural AM reception
- stereo FM/AM reception with matching EICO FM Tuner HFT90 or equivalent

Kit \$39.95 Wired \$65.95
Includes Metal Cover and FET

"One of the best available . . . ideal for those wishing to add AM to their systems"—HI-FI SYSTEMS
"A most excellent AM tuner . . . capable of duplicating . . . all that the AM stations can deliver . . . can hardly be bettered at any price"—AMERICAN RECORD GUIDE

The HFT94 is a high fidelity AM tuner, engineered with the same care and consideration as the widely acclaimed HFT90 FM tuner. It features a choice of wide (to 14 kc) or narrow (to 7 kc) bandpass, the former for the highest fidelity available on AM, the latter for pulling in weaker or more distant stations. The tuned RF stage and built-in ferrite loop antenna help provide sufficiently high selectivity and sensitivity so that very little signal is required to achieve acceptable signal-to-noise ratio. Noise and distortion are remarkably low. A high Q filter eliminates 10 kc whistle while reducing response by no more than 3 db at 9kc.

The excellence of the electronic design is complemented by superb mechanical construction, trouble-free point-to-point wiring, spacious horizontal chassis, and thoughtful component layout.

SPECIFICATIONS: Typical Sensitivity: 3uv at 30% mod. for 1.0 output, 20 db S/N. Overall Selectivity: (Wide) 14 kc at -6 db, (Narrow) 7 kc at -6 db. Frequency Response: (Wide) 20-9000 cps at -3 db, (Narrow) 20-5000 cps at -3 db. Image Rejection: 58 db. Hum Level: 60 db below output with 3uv input, 30% modulation (1.0 Volt). Distortion: Less than 1% harmonic distortion at 100% modulation. Output: Low impedance plate follower (8000 ohms). Extra recording output. Controls: Bandwidth Selector, Level/Power On-Off, Tuning. Tubes: 2-6BA6, 1-6BE6, 1-12AU7/ECC82, 1-DM70 tuning eye, 1-6X4, 1-CK885 diode. Power: 110-125 VAC, 60 cps; 40 watts drain. Size (HWD): 3 $\frac{3}{8}$ " x 12" x 8 $\frac{1}{4}$ ". Weight: 12 lbs.



FM/AM Tuner HFT92

- monaural FM reception
- monaural AM reception
- stereo FM-Multiplex reception with Adapter

Kit \$59.95 Wired \$94.95
Includes Metal Cover and FET

The new HFT92 FM/AM Tuner combines, on one chassis, the renowned HFT90 High Fidelity FM Tuner with excellent AM tuning facilities. (The HFT92 is not a stereo FM-AM tuner, since it does not receive FM and AM simultaneously.)

SPECIFICATIONS: (AM only: FM specifications same as HFT90.) Sensitivity: 20 uv for 0.8v output with 15 db S/N. Selectivity (IF Bandwidth): 8 kc at 6 db. Antenna Input: Ferrite Rod; terminals for external antenna provided. Frequency Response: 20-5000 cps ± 3 db. Hum: 60 db below 1 volt. Output: Min. output of 0.8 volt with 20 uv input, 30% modulation. Image Rejection: 40 db. Tuning Range: 540-1650 kc. Total Harmonic Distortion: Below 2% up to 70% modulation. Controls: Tuning, Volume/Power On-Off, FM-AM Selector. Power Requirements: 117V, 60 cps; 40 watts drain.

All These Features In All EICO Tuners

—Make Every EICO Tuner
A Best Buy In Its Class

- Prewired, prealigned FM "front end"
- Exclusive precision eye-tronic® tuning indicator
- Effortless flywheel tuning
- FM-multiplex outlet for FM stereo adapter
- Prealigned RF coils and IF transformers
- Low impedance output
- Low-silhouette construction utilizing horizontal chassis to permit proper component layout and separation
- Very little interstation noise
- Extreme flexibility of design, permitting easy console installation with adaptability to different thicknesses of panel
- No test or alignment instruments needed

Pinpoint tuning . . . fabulous sensitivity . . . excellent stability . . . absolute freedom from drift —all assured in every EICO FM tuner (and in the FM section of every EICO FM/AM tuner) whether built from kit or purchased factory wired—

BECAUSE . . .

EICO expertly wires and carefully prealigns the most critical part of the entire FM circuit—the "front end"—essentially the entire tuning circuit—and presents it to you housed and completely shielded in an aluminum-zinc casting. This front end is characterized by the most advanced circuitry, by the finest, temperature-compensated components. It is this front end that makes it possible for anyone—even a novice—to build any EICO tuner from the kit without any trouble, without the need for test or alignment instruments, and with absolute assurance of performance equal to that obtained from the finest factory-built tuners.



Turn on any EICO tuner—FM, AM, or FM/AM—and within seconds a bright green exclamation point starts to glow from the dial. Twist the tuning knob: the exclamation point glides smoothly along the slide-rule dial, contracting to minimum size as it reaches the exact center of each broadcast channel. This exclamation point is your double-purpose tuning indicator: it not only guides you to the station you want, but also shows you, electronically, when you have that station tuned in perfectly.

The exclamation point is formed in the heart of the DM70 tube, part of EICO's famed eye-tronic® tuning assembly, supplied pre-wired with all EICO tuner kits. It is not only one of the most sensitive tuning indicators available; it is the first one which serves the double function of a traveling dial position indicator and a hairline electronic tuning indicator simultaneously.

Once it's tuned in—sit back, relax, forget about it. Your signal stays sharp, clear, and clean. Your tuner will not drift (and if you turn it off for hours—or days—you find it's still on station whenever you turn it on again). It continues to deliver, hour after hour, day after day, every tone, every overtone, every nuance that the broadcast signal has to offer.

Engineering
Excellence
can be
Economic
and
Beautiful



The Finest Stereo Systems

Stereophonic Dual Preamplifier HF85

Kit \$39.95

Wired \$64.95

Includes Metal Cover

"Extreme flexibility... a bargain"—HI-FI REVIEW
"An outstanding buy... it is in performance that the HF85 excels"—
THE AMERICAN RECORD GUIDE

The HF85 is a stereophonic preamplifier designed for virtually no distortion, very high gain, and superb tone control action. All essential switching and control facilities for stereo or mono listening are provided. Capable of selecting, amplifying and accurately controlling any stereophonic source—tape, disc, or broadcast—the HF85 features:

- Separate low level inputs in each channel for magnetic phono, tape head, and microphone. Provides the high gain without hum and noise required by tape heads and high quality, low output magnetic cartridges. Front panel switch permits choice of proper NARTB tape head equalization for either 7½ and 15 ips, or 3¾ ips... Separate high level inputs for AM tuner, FM tuner, and FM-Multiplex, and auxiliary inputs for other sources.
- Independent level, bass, and treble controls in each channel which may be operated separately or together with built-in clutch.
- Distortionless, 3-stage, independent bass and treble tone control circuits in each channel. Each tone control circuit consists of a feedback amplifier pair (30 db of feedback) driving a true variable crossover, feedback tone control stage. Bass and treble controls do not interact with each other or affect the level. Bass controls in both channels and treble controls in both channels are concentric.
- Fletcher-Munson loudness compensation for low level listening which may be defeated by front panel slide switch.

SPECIFICATIONS FOR BOTH CHANNELS: Frequency Response: ± 0.3 db 5-200,000 cps at any level up to 3V RMS out. (Measured from high level inputs with level controls set at maximum and tone controls electrically flat.) Sensitivity (input for 2V RMS output at 1000 cps): Mag. Phono-1 mv; Microphone-1 mv; Tape-Head —0.5 mv; High Level Inputs—0.17 V. Hum Noise: Mag. Phono-60 db; Microphone-60 db; Tape Head-50 db; High level inputs-75 db. (For low level inputs, values given are equivalent noise input in db down from 10 mv input level. For high level inputs, value given is equivalent noise input in db down from 0.5 V input level).

IM Distortion (60 and 7000 cps at 4:1): 0.02% for 0.5V out, 0.03% for 1.0V out, 0.04% for 2.0V out, 0.07% for 3.0V out, 0.11% for 4.0V out, 0.17% for 5.0V out.

Harmonic Distortion (20-20,000 cps): 0.1% at 3V RMS out; 0.15% at 5V RMS out. Tone Control Range: At 10 kc: 15 db boost, 15 db cut. At 50 cps: 15 db boost, 15 db cut. Equalization: Phono-RIAA; Tape Head-NARTB for 15 ips, 7½ ips, and 3¾ ips. Output to Tape Recorder Impedance: 1,400 ohms. Output to Main Amplifier Impedance: 8,000 ohms. Tube Complement: 5-12AX7/ECC-83, 1-6X4. Size: 3½" high, 12" wide, 8¼" deep. Power Source: 117 VAC, 60 cps. Weight: 10 lbs.

28-Watt Stereo Dual Amplifier HF86

Kit \$43.95

Wired \$74.95

Matching Enclosure Model E-7: \$3.95

The two separate power amplifiers in the HF86 are conservatively rated at 14 watts output and employ Williamson-type circuits with push-pull EL84 output stages. A service selector switch allows the two amplifiers to be operated to deliver 28 watts for mono use. Other convenience features include a level control of each input, an ac power switch, two convenience outlets, and a fuse in an extractor post mounting.

SPECIFICATIONS: Output Power: 28 watts (two 14 watt amplifiers) continuous, 56 watts peak. IM Distortion (60 & 7000 cps at 4:1): 1.5% at 28 watts (14 w. each), 0.5% at 10 watts (5 w. each), 0.3% at 4 watts (2 w. each). Harmonic Distortion: 16 watts (8 w. each) less than 1% from 30 c to 15 kc; 20 watts (10 w. each) less than 1% from 40 c to 15 kc; 28 watts (14 w. each) less than 2% from 40 c to 15 kc and 1% from 50 c to 7 kc; 20 c distortion: 3% at 12.5 watts (6.25 w. each). Frequency Response: 2 watts (1 w. each) ± 0.5 db 10 c to 100 kc. Transient Response: Excellent square wave reproduction (4 usec rise time); negligible ringing, rapid settling on 10 kc square wave. Inverse Feedback: 20 db. Stability Margin: 15 db. Sensitivity: 1.15 V for 14 w. output. Hum: 90 db below rated output. Controls: Level Ch. 1, Level Ch. 2, "Service Selector" switch, ON-OFF switch. Speaker Connections: 4, 8, 16, and 32 ohms. Tubes: 2-12DW7, 4-EL84, 2-EZ81. Power Source: 117 V, 60 cps. Power Consumption: 115 watts. Size (HWD): 5" x 13½" x 9". Weight: 16 lbs.



Stereophonic Dual Preamplifier ST84

Kit \$59.95

Wired \$89.95

Includes Metal Cover

"The new EICO ST-84 is an attractive, versatile, easy-to-use dual-channel preamplifier and audio control unit that can be mated with any basic amplifier and can accept all standard program sources... generally excellent with effectively no distortion... the EICO ST-84 is a generally first-rate control unit going at a relatively low price." — U. S. TESTING CO., HIGH FIDELITY

- Lowest distortion possible
- Greatest system flexibility
- Utmost in audio quality

The ST84 was created to fill the need for a superior stereo preamplifier that can deliver the ultimate in both audio quality and system flexibility. For all functions of the preamp, all types of distortion are down to 0.05% at all levels. No preamp at any price can offer audibly lower distortion. This is true not only at average input levels and when tone controls are set close to flat, but also at peak input levels and when tone controls are set at extreme positions. We have been able to achieve this figure because present-day low level audio tubes employ coiled heater construction and are far less susceptible to hum than they were years ago, when a dc filament supply was the only answer for really low hum level. If a dc filament supply were used in the ST84, hum and noise might be reduced to .03% — hardly a significant improvement — but an ac filament supply has certain distinct advantages. One, in particular, is that if a heater-cathode short develops in one of the tubes, hum is immediately evident, and the tube can easily be spotted and replaced. If the same thing happens with a dc supply, no hum is evident, but the operating bias of the tube is changed (by the presence of the dc filament voltage at the cathode). Distortion results, which is more difficult to track down.

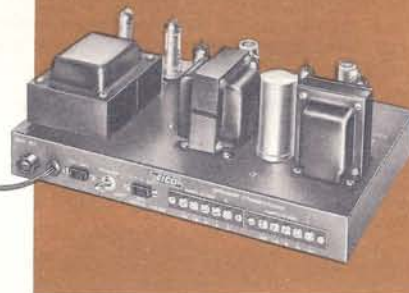
FACILITIES: Input Selector: Tape/Aux, MX/Aux, FM/AM, Tape Head, Phono A, Phono B, Mic. Mode Selector: Sum signal to left speaker only, and sum signal to right speaker only (for stereo balancing); stereo, stereo reverse; for mono tuner and tape, channel 1 signal to both speakers, and channel 2 signal to both speakers; for mono disc, sum signal to both speakers. Balance Control: Constant-volume type provides adjustment without significantly affecting volume. Level Control. Tone Controls: Concentric bass and concentric treble. Variable crossover control action permits boost or cut at extremes of range without affecting mid-range. High Frequency Filter Switch: Permits roll-off above 7kc to suppress hiss and noise. Low Frequency Filter Switch: Permits low frequency roll-off to suppress rumble or other low-frequency disturbance. Tape Equalization Switch: Selects 7½ or 3¾ ips equalizations at Tape Head position. Tape Monitor Switch: For direct comparison of tape recording with source signal while recording is being made. Loudness Switch: Provides fixed bass boost according to Fletcher-Munson curves for bass audibility at low listening levels (when Level Control is operated). Tape Outputs (For Recording): Not affected by controls.

THE UNIT IS SELF-POWERED FOR BETTER PERFORMANCE AND CONVENIENT USE WITH ANY BASIC STEREO POWER AMPLIFIER OR PAIR OF SINGLE BASIC AMPLIFIERS.

SPECIFICATIONS: Frequency Response: ± 0.3 db 5-25,000cps. Harmonic Distortion (20-20,000cps): 0.06% at 2V out. IM Distortion (60 & 7000cps at 4:1): 0.04% at 2V out. Hum & Noise: Mag Phono A, Mag Phono B, Tape Head: —65db at 10mv in; Tuner, Tape, Aux.: —75db at 0.5V in. Sensitivity (minimum input for 1V out at 1kc): Mag Phono A, Mag Phono B: 1.6mv; Tape Head: 1mv; Microphone: 2.8mv; high level inputs (tuner, tape, aux.): 0.17V. Tone Controls: ± 15 db at 50cps; ± 15 db at 10kc. Tubes: 5-12AX7/ECC83, 1-6X4. Size (HWD): 5½" x 15¾" x 8¾". Shipping Weight: 9 lbs. Power Requirements: 117V, 60cps; 25 watts drain.



Shown in Furniture Wood Enclosure WE-70:
Unfinished Birch \$8.95;
Walnut \$12.50



You Can Assemble

100-Watt Stereo Dual Power Amplifier HF89A

Kit \$99.50 Wired \$139.50

Matching Enclosure Model E-8: \$4.50

"An excellent amplifier...listening quality is clean and smooth, with a good solid feel in the bass register, which is the mark of a good amplifier...Our measured results are even better than the specifications"—AUDIO

"Our measurements verified EICO's claims quite closely... There is no point in plotting frequency response, for it would be virtually a straight line. It was within 0.1 db up to 10 kc, and down 0.4 db at 20 kc. This is within the possible range of our instrument errors... The HF89A had the effortless, solid sound typical of a good, high-powered amplifier, at a relatively modest price"—Hirsch-Houck Labs (HIGH FIDELITY MAGAZINE)

In producing the HF89A, the finest techniques of the audio art were applied to the creation of an instrument that meets or exceeds every professional criterion for a power amplifier of this power rating. Each power amplifier of the HF89A, conservatively rated at 50 watts, employs the thoroughly proven cathode-coupled phase-inverter-driven circuit, preceded by a direct-coupled voltage amplifier. Fixed-biased, push-pull EL34's are used in the output stage and provision is made for both bias and dc balance adjustments. The very low impedance characteristic of silicon diode rectifiers gives the common power supply for the two amplifiers very good regulation, so that signal conditions in one amplifier have negligible effect on operating conditions in the other. To ensure long life for the silicon diode rectifiers, electrolytics, and tubes, a surgistor is included to limit the starting surge currents.

The intrinsic quality of the driving circuit, the output tubes, and the output transformers in the HF89A is unsurpassed. Furthermore, the high circuit and component quality result in less feedback required to achieve the very low distortion figures, so that the HF89A has an excellent stability margin.

SPECIFICATIONS: Output Power: 100 watts (two 50 watt amplifiers) continuous, 200 watts peak. IM Distortion (60 & 7000 cps at 4:1): 0.5% at 100 watts. Harmonic Distortion: Less than 0.25% from 30 to 15,000 cps and less than 1% from 20 to 20,000 cps within 1 db of 100 watts. Frequency Response:

±0.5 db 5 cps—100 kc. Rise Time: 2.5 usec. Square-Wave Response: Essentially undistorted to 20,000 cps. Inverse Feedback: 18 db. Stability Margin: 13 db. Damping Factor: above 12, 20 cps to 20 kc. Channel Separation: 60 db. Sensitivity: 0.55V for full output. Hum: Better than 90 db below full output. Controls: Level Ch. 1, Level Ch. 2, "Service Selector" switch, ON-OFF switch. Speaker Connections: 4, 8, and 16 ohms. Tubes: 1-ECC83/12AX7, 2-6SN7GTB, 4-EL34, 2 silicon diode rectifiers (power), 1 selenium rectifier (bias); surgistor protected for long life. Power Source: 117V, 60 cps. Power Consumption: 215 watts at no signal, 270 watts at 100 watts out. Size (HWD): 6" x 15" x 11". Weight: 40 lbs.



70-Watt Stereo Dual Power Amplifier HF87A

Kit \$74.95
Wired \$114.95

Matching Enclosure
Model E-8: \$4.50

Quality-designed and
quality-engineered, the
HF87A is similar (except

for self-bias operation of the output stages and power ratings of output transformers) in circuitry design and characteristics to EICO's outstanding HF89A stereo dual power amplifier, and, like it, features excellent regulation of its common power supply; a surgistor to limit the starting surge currents; and a high margin of stability. A service selector switch on the chassis enables the HF87A to act as a stereo dual 35-watt amplifier or a monophonic 70-watt amplifier.

SPECIFICATIONS: Output Power: 70 watts (two 35 watt amplifiers) continuous, 140 watts peak. IM Distortion (60 & 7000 cps at 4:1): 1% at 70 watts. Harmonic Distortion: Less than 1% from 20 to 20,000 cps within 1 db of 70 watts. Frequency Response: ±0.5 db 5 cps—100 kc. Rise-time: 3 microseconds. Square-wave Response: Essentially undistorted to 20,000 cps. Inverse Feedback: 17 db. Speaker Connections: 4, 8, 16, and 32 ohms. Stability Margin: 17 db. Damping Factor: above 11, 20 cps to 20 kc. Tubes: 1-ECC83/12AX7, 2-6SN7GTB, 4-EL34, 2 silicon diode rectifiers protected by surgistor. Channel Separation: 55 db. Sensitivity: 0.38 V for full output. Power Source: 117 V., 60 cps. Hum: Better than 90 db below full output. Power Consumption: 215 watts; 5 amp. fuse. Controls: Level Ch. 1, Level Ch. 2, "Service Selector" switch, ON-OFF switch. Size (HWD): 6" x 15" x 11". Weight: 32 lbs.



Shown in Furniture Wood Enclosure WE-71:
Unfinished Birch \$9.95; Walnut \$13.95

Stereophonic Dual Amplifier-Preamplifier HF81

Kit \$69.95 Wired \$109.95

Includes Metal Cover

"Excellent"—SATURDAY REVIEW; HI-FI MUSIC AT HOME

"Outstanding quality...extremely versatile"—ELECTRONICS WORLD LAB TESTED

"A good buy"—MODERN HI-FI

"Solid, well-designed unit"—POPULAR ELECTRONICS

"A good value on its own merits, a better one when price is considered"—Hirsch-Houck Labs (HIGH FIDELITY MAGAZINE)

A complete stereophonic control center and two identical Williamson type push-pull EL84 14-watt power amplifiers with high quality output transformers all on one chassis. With it you can select, preamplify, and control any stereophonic source (tape, discs, broadcasts) and feed it through the self-contained 14-watt amplifiers to a pair of speaker systems. Separate low level inputs are provided in each channel for magnetic phono, tape head, and microphone, high level inputs for AM tuner, FM tuner, and FM-Multiplex. Also two auxiliary A, and two auxiliary B inputs. Panel controls include an input selector switch; an extremely versatile function selector with positions for listening to each channel separately (for checking purposes), stereo normal, stereo reverse, monophonic record playing with stereo cartridge (mixes the two channels for cancellation of vertical rumble), monophonic tuner (channels unmixed so that no extraneous noise from the unused input is introduced); ganged level controls; separate focus (balance) control; independent, full-range low distortion variable crossover feedback type bass and treble tone controls in each channel. The HF81 can also convert a mono system to stereo: To incorporate your present mono amplifier into a stereophonic system, a service selector switch on the chassis permits you to drive both internal power amplifiers from one preamplifier control section, while the other drives your present amplifier. The HF81 can also be used in monaural applications, the 14 watts available for each channel adding up to 28 watts for your speaker system.

SPECIFICATIONS: Output Power: 28 watts (two 14 watt channels) continuous; 56 watts peak. IM Distortion (60 & 6000 cps at 4:1): 2% at 28 watts, (14 watts each channel); 0.5% at 10 watts, (5 watts each channel). Frequency Response: 2W (1W each channel) ±0.5 db 10 c to 100 kc. Harmonic Distortion: 16W (8W each channel) less than 1% from 30 c to 10 kc; 20W (10W each channel) less than 1% from 40 c to 10 kc; 28W (14W each channel) less than 1% from 50 c to 5 kc; *Sensitivity (input for 14W): mag. phono-4 mv; tape head-2 mv; Mic.-6 mv; tuners, auxiliaries-0.5 V. *Hum and Noise Level (below 14W): mag. phono-60 db; tape head-51 db; mic-57 db; tuners, auxiliaries-75 db. *Tone Control Range: ±15 db at 50 c and 10 kc. *Speaker Connections: 4, 8, 16, and 32 ohms. Tubes: 4-ECC83/12AX7, 2-ECC82/12AU7, 4-EL84, 2-EZ81. Size: 15" wide, 4 3/4" high, 10 1/2" deep. Weight: 24 lbs. Power Requirements: 117V, 60cps; 130 watts drain. *each channel



Now...beautiful
FURNITURE
WOOD CABINETS
for your EICO
hi-fi components

- Adds the rich, warm beauty of fine furniture wood to your decor.
- Slips right over the metal cabinets of your EICO components in seconds.

WE70 (for HF85, HF65, HF12,
HFT90, HFT92, HFT94, AF-4)
In unfinished birch, \$8.95
In walnut, \$12.50

WE71 (for HF81, HF32)
In unfinished birch, \$9.95
In walnut, \$13.95

The Finest in Integrated Amplifiers... Use 2 for Stereo



12-Watt Williamson- type Integrated Amplifier HF12

Kit \$39.95
Wired \$59.95

Includes Metal Cover

Shown in Furniture Wood Enclosure WE-70:
Unfinished Birch \$8.95;
Walnut \$12.50

"Packs a bigger wallop than is apparent from the specifications."—POPULAR ELECTRONICS

The HF12 is a true high fidelity 12-watt integrated amplifier that provides complete "front end" facilities and true high fidelity performance of such excellence that we recommend it unreservedly for any medium-power high fidelity application. Two HF12's may be used for stereo tape reproduction, each amplifier connecting directly to a tape head, with no other electronic equipment required.

SPECIFICATIONS: Output Power: 12 watts continuous, 25 watts peak. IM Distortion (60 & 6000 cps at 4:1): 1.3% at 12W; 0.55% at 6W; 0.3% at 4W. Frequency Response: 1W: ± 0.5 db 12 cps—75 kc; 12W: ± 0.5 db 25 cps—20 kc. Harmonic Distortion: 20 cps: 2% at 4.2W; $\frac{1}{2}$ % at 2.5W; 30 cps: 2% at 11W; $\frac{1}{2}$ % at 6.3W; 40 cps: 1% at 12W; $\frac{1}{2}$ % at 9.3W; 2000 cps: $\frac{1}{2}$ % at 12W; 10 kc: 1% at 10W; $\frac{1}{2}$ % at 6W. Transient Response: excellent square wave reproduction (4 usec risetime); negligible ringing, rapid settling on 10 kc square wave. Transient Distortion (60 cps tone burst): less than 1% at full power. Inverse Feedback: 20 db. Stability Margin: 12 db. Damping Factor: above 8, 20 cps—15 kc. Speaker Connections: 4, 8, and 16 ohms. Sensitivity (input for 12W): mag. phono—5 mv; tape head—2 mv; tuner, auxiliary—0.5 v. Hum & Noise Level (below 12W): mag. phono—60 db; tape head—50 db; tuner, auxiliary—75 db. Tone Control Range: at 10 kc, ± 13 db; at 50 cps, ± 16 db. Tubes: 3—ECC83/12AX7, 2—EL84, 1—EZ81. Size: 3 $\frac{3}{8}$ " high, 12" wide, 8 $\frac{1}{4}$ " deep. Weight: 15 lbs. Power Requirements: 117V, 60 cps; 70 watts drain.



20-Watt Williamson- type Integrated Amplifier HF20

Kit \$49.95
Wired \$79.95

Matching Enclosure E-1 \$4.50

"Well-engineered"—RADIO & TELEVISION NEWS

The HF20 employs an output transformer capable of handling far in excess of its 20 watts rated power, a full Williamson power amplifier circuit, and the finest preamplifier-control facilities. It has become established as the outstanding value in amplifiers of this power class.

SPECIFICATIONS: Rated Output: 20 watts (34 watts peak). IM Distortion: (60 & 6,000 cps @ 4:1): 1.3% @ 20w. Harmonic Distortion: below 1% 20-20,000 cps within 1 db of 20w. Frequency Response: ± 0.5 db 15-30,000 cps at any level from 1 mw to 20w; no peaking or raggedness outside audio range. Square Wave Response: 20-20,000 cps essentially undistorted. Inverse Feedback: 14 db. Damping Factor: 7. Stability Margin: 12 db. Sensitivity: Mag Phono: 4 millivolts for 20w output; Tuner, TV, Tape, Auxiliary 0.4 volts for 20w output. Hum & Noise Level: Mag Phono: 60 db below 20W (RIAA, max-gain, and tone controls at "flat" positions); Tuner, etc.: 75 db below 20W (max-gain, and tone controls at "flat" positions). Tone Control Range: ± 15 db @ 50 cps; and ± 15 db @ 10 kc. Phono Equalizer Curves: RIAA (new AES, NARTB ORTHO, RCA), Columbia (original LP), London, American 78, European 78. Speaker Connection Taps: 4, 8, and 16 ohms. Power Consumption: 110-120 volts, 60 cps, 100 watts; 2 amp fuse. Tube Complement: 2-12AX7/ECC83; 2-12AU7/ECC82; 2-6L6GB; 1-5U4GB. Size (HWD): 8 $\frac{1}{2}$ ", 15", 10". Weight: 24 lbs.



Complete Stereo Dual Amplifier AF4

Kit \$38.95
Wired \$64.95
Includes Metal Cover

Shown in Furniture Wood Enclosure WE-70:
Unfinished Birch \$8.95; Walnut \$12.50

Two highly fed-back, 4-watt amplifiers preceded by all the control facilities required for complete flexibility in stereophonic/monophonic operation provide high fidelity quality at power levels adequate to drive high efficiency loudspeakers to concert volume. A moderate single tone control is used and the available gain thus released is converted into distortion-reducing negative feedback. With a great deal of painstaking work to ensure both excellent frequency response and adequate stability margin, a feedback level of 27 db around each power amplifier has been achieved, resulting in harmonic and intermodulation distortion characteristics within hi-fi standards at average listening levels. No control devices are employed in the feedback loops which can affect distortion or stability, nor are the distortion figures dependent on matching components or making adjustments.

SPECIFICATIONS (total of both channels):

Harmonic Distortion:
1/2W: < 0.3% 100-20,000 cps; 0.6% at 50 cps; 1.3% at 30 cps.
4W: < 1% 100-10,000 cps; 2.8% at 50 cps.
8W: < 3% 200-5,000 cps.

IM Distortion (200 & 7000 cps at 4:1): 5% at 8W; 2.2% at 4W; 1.4% at 2W; 0.6% at 1/2 W. Frequency Response (2W): ± 0.5 db, 30-20,000 cps undistorted within high fidelity standards. Feedback: 27 db. Stability Margin: 5 db. Damping Factor: 9. Tone Control Range: Up to 9 db treble cut (10 kc) and 8 db bass cut (50 cps). Sensitivity (input for 4W output per channel): Ceramic cartridge phono input—0.26V; Crystal cartridge phono input, FM tuner, AM tuner input, FM multi input, tape inputs—0.1V. Input Impedance: Ceramic cartridge phono input—2 megohms; all other input—1 megohm. Hum & Noise (below full output): —74 db. Speaker Connections: 4, 8, 16 and 32 ohms. Tube Complement: 2-12DW7, 2-EL84, 1-EZ81. Power Requirements: 117VAC, 60 cps, 70 watts power consumption. Size: 3 $\frac{3}{8}$ " high, 12" wide, 8 $\frac{1}{4}$ " deep. Weight: 13 lbs.



30-Watt Integrated Amplifier HF32

Kit \$57.95
Wired \$89.95

Includes Metal Cover

Shown in Furniture Wood Enclosure WE-71:
Unfinished Birch \$9.95; Walnut \$13.95

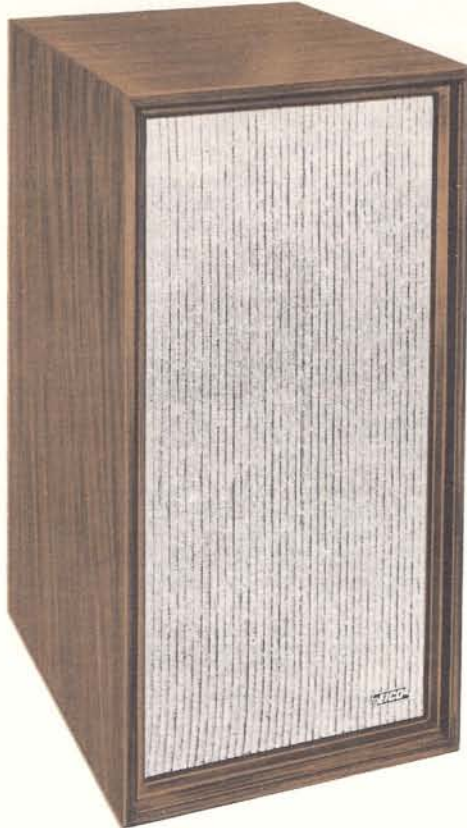
The HF32 is an excellent example of EICO's "low silhouette" design where compactness and a rich, attractive appearance are obtained without compromising good engineering practice. Power tubes are well separated from each other and from heat-sensitive components, undesirable couplings are avoided, and a single horizontal chassis is used which greatly simplifies kit construction and maintenance. A top value in high fidelity amplifiers.

SPECIFICATIONS: Output Power: 30 watts continuous, 47 watts peak. IM Distortion (60 cps & 7 kc at 4:1): 2% at 30 watts; 1% at 20 watts, 0.5% at 10 watts. Total Harmonic Distortion: below 1% 20 cps—20 kc within 1 db of 30 watts. Frequency Response: 1 w: ± 0.5 db 10 cps—50 kc; ± 1.5 db 10 cps—100 kc; 30 w: ± 0.5 db 15 cps—50 kc; ± 1.5 db 15 cps—100 kc; ± 0.1 db 15 cps—30 kc at any level from 1 mw to 30 w; no peaking or raggedness outside audio range. Square Wave Response: 20 cps to 20 kc essentially undistorted. Inverse Feedback: 20 db. Stability Margin: 15 db. Damping Factor: above 10, 10 cps to 20 kc. Speaker Connections: 4, 8, and 16 ohms. Tone Control Range: at 10 kc—13 db boost, 15 db cut; at 50 cps—14 db boost, 15 db cut. Equalization: Mag Phono Input: RIAA, COLUMBIA (original LP), LONDON, AMERICAN 78. Tape Head Input: NARTB. Sensitivity (input for rated output): Mag Phono—5 millivolts; Tape Head—2 millivolts, Microphone—4 millivolts; High Level (TV TUNER, AUX.)—0.4 volt. Hum and Noise Level (below rated output): Mag Phono—60 db down. Tape head—51 db down. Microphone—57 db down. TV, TUNER, AUXILIARY—75 db down. (Maximum gain, tone controls set at flat position). Scratch and Rumble Filters: Scratch filter introduces approximately 12 db/octave slope above 5 kc; Rumble filter introduces approximately 12 db/octave slope below 70 cps. The nominal cut-off frequencies are points at which response is 6 db down when the corresponding filter is introduced. Power Requirements: 117 V, 60 cps; 140 watts consumption. Tubes: 2—ECC83/12AX7, 2—EC90/6C4, 4—EL84, 2—EZ81. Size: 15" wide, 4 $\frac{3}{4}$ " high, 10 $\frac{1}{2}$ " deep. Weight: 24 lbs.

Add 5% in the West. Slightly higher in Canada.

Superb Sound... Furniture Finish... Bookshelf Convenience

Complete with factory-constructed enclosure—Easy to assemble—no gluing or woodworking necessary



3-Way Speaker Systems HFS3 and HFS4

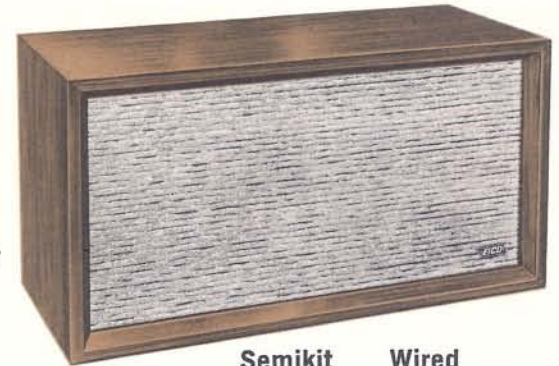
	Semikit	Wired
HFS3 (With cone tweeter)		
In unfinished, smooth-sanded birch	\$72.50	\$84.50
In oil walnut	\$87.50	\$99.50
HFS4 (With horn tweeter)		
In unfinished, smooth-sanded birch	\$83.50	\$96.50
In oil walnut	\$98.50	\$112.50

New techniques in loudspeaker engineering make possible extraordinarily pure and full reproduction of bass frequencies with good efficiency in an enclosure of 2¼ cubic feet. The HFS3 includes a 12" bellows suspension woofer (1¼ lb. Alnico 5 DG magnet 22 cps free-air resonance, 1" max double peak movement), an 8" closed back mid-range speaker with a high internal damping cone for smooth response, and a 3½" cone tweeter for soft, delicate highs; the HFS4 has a compression-driver horn tweeter for more brilliance and greater projection in the highs. (In all other respects the two are identical.)

Frequency division is accomplished by a quarter-section LC network at 600 cps and a high-pass filter at 4000 cps; a level control is provided for the tweeter. The enclosure in both systems is constructed of ¾" stock throughout and is tuned to 25 cycles by a tubular ducted port. The tuned enclosure loads the woofer and thereby reduces the cone excursion and the distortion in the 28 to 60 cps region, while providing substantial supplementary undistorted radiation from the port. A system Q of ½ means that the speaker is critically damped when used with any modern amplifier of normal damping factor (7-20). Critical damping gives the smoothest possible frequency response, and the best transient response.

The HFS3 and HFS4 present no phasing problem in stereo installations: each system has polarity of connection terminals indicated.

SPECIFICATIONS: Frequency Response (along-the-wall-position): Essentially uniform (±5 db) from 45 to 14,000 cps. Response is only 10 db down from average level at 28 cycles. The octave from 28 to 60 cps is undistorted and entirely usable. Continuous Rated Power Handling: 30 watts program. Amplifier Power Requirements: Clean 10 watts. Rated Impedance: 16 ohms. Dimensions (HWD): 26¾" x 13¾" x 14½". Cabinet: Completely factory-constructed (not a kit) with a decorator-designed frame and acoustical grille cloth in place. Fitted with speaker mounting studs and supplied ready to receive speakers and networks.



2-Way Speaker System HFS5

	Semikit	Wired
In unfinished birch	\$47.50	\$56.50
In oil walnut	\$59.50	\$69.50

Provides extremely clean, deep, and smooth bass from a bookshelf-size enclosure. Includes an 8" bellows-suspension woofer (10.7 oz. Alnico 5 DG magnet, 45 cps free-air resonance, 5/8" max. double peak excursion) and a 3½" closed back tweeter of exceptional quality. The impregnated cloth bellows woofer suspension used excels in linearity of the force-displacement ratio over a very wide axial excursion and underlies the excellence of the bass reproduction. Frequency division is accomplished by a high-pass capacitor filter at 2000 cps; a level control is provided for the tweeter.

Enclosure is ¾" stock and is tuned to 45 cycles by a tubular ducted port. This loads the woofer and thereby reduces the cone excursion and the distortion in the octave from 40 to 80 cps, while providing substantial supplementary undistorted bass radiation from the port. A system Q of ½ means that the speaker is critically damped when used with any modern amplifier of normal damping factor (7-20). Critical damping gives the smoothest possible frequency response and the best transient response.

SPECIFICATIONS: Frequency Response (along-the-wall position): Essentially uniform (±5 db) from 52-14,000 cps. Response is only 10 db down from average level at 36 cps. The octave from 40 to 80 cps is undistorted and entirely usable. Continuous Rated Power Handling: 25 watts program. Amplifier Power Requirements: 10 clean watts minimum for high fidelity use; 4 clean watts minimum for good quality economy use. Rated Impedance: 16 ohms. Dimensions (HWD): 24" x 12½" x 10". Cabinet: Completely factory-constructed (not a kit) with a decorator-designed frame and acoustical grille cloth in place. Fitted with speaker studs and supplied ready to receive speakers and networks.



2-Way Speaker System HFS1

Semikit	\$39.95
Wired	\$47.95

Expertly constructed, furniture-quality, tuned bass-reflex speaker cabinet (NOT A KIT): Acoustically engineered by Jensen for the woofer speaker supplied. All visible surfaces are smooth-sanded, clear-grained birch hardwood and no plywood edges are exposed to mar the appearance. Handsome acoustical grille cloth. Heavy-duty 8" woofer (Jensen): High energy ½ lb. Alnico 5 D.P. magnet. Response engineered for smooth cross-over to tweeter at 1800 cps. Bass and mid-range are remarkably smooth, clean and free of coloration.

Tweeter (Jensen): Compression-driver loaded by cast aluminum Hypex* horn. Small, precisely controlled and loaded diaphragm is free of "breakup" and the accompanying excessive peaks and dips in the frequency response. Provides flat frequency response, high conversion efficiency, and reduced directivity. Clean, crisp, extended highs, free of coloration or artificial brilliance.

*T.M. reg. Jensen Mfg. Co.

SPECIFICATIONS: Frequency Response: (Measured in anechoic chamber, 2 ft. away on principal axis): Woofer: ±4 db maximum variation 80 to 1800 cycles. Tweeter: ±2 db maximum variation 2800 to 10,000 cycles. Crossover Region: 1800 to 2800 cycles; 4 db gradual rise in response over this region when the tweeter level control is set to introduce no attenuation. Overall Response: ±6 db 70-12,000 cps. Impedance: 8 ohms. Power Handling Capacity: 25 watts. Bookshelf Size: 23" wide, 11" high, 9" deep. Weight: 25 lbs.

NOW! 2-Way Radio Communications for You!

Citizens Band Transceivers

The entire transmitter oscillator circuit and RF final in every EICO transceiver, kit and wired, is premounted, prewired, pretuned and sealed at the factory (about 3 hours of skilled labor, precision adjustments, and testing), complying with FCC regulations (section 19.71, part d). This permits you to build the kit and put it on the air without the supervision of a person holding commercial radio-telephone license.

Easy to Operate as a Telephone—Station to Vehicle, Station to Station, Vehicle to Vehicle. License available to any citizen over 18—no exams or special skill required • Rugged • Reliable • Economical.

SPECIFICATIONS

TRANSMITTER SECTION: Input Power to Final RF Amplifier: 5 watts maximum (FCC limit). Transmitter Frequency Range: 26.965-27.255 mc. Transmitter Frequency Control: 3rd overtone type quartz crystal operating within 0.005% of marked channel frequency between -32° and 140° F. In 770 series, sockets provided for 4 different crystals selected by front panel switch. Modulation: AM plate modulation automatically limited to less than 100% (FCC requirement). Output Impedance: Variable "pi" network adjustment to different antenna types. Antenna Connector: On rear apron for connection of separate antenna of any type. Indicators on Panel: On-off pilot light; transmit indicator light. Microphone: Ceramic element, plastic case, cord and connector. Microphone of 770 series has push-to-talk switch.

RECEIVER SECTION: Receiver Type: Superheterodyne with RF stage, 1750kc IF strip, and automatic noise limiter. 770 series has adjustable squelch control. Continuous Tuning Range: 26.965-27.255 mc. In 770 series, fixed tuning on any one channel available, depending on specified crystal. Sensitivity: 1 microvolt for 10 db signal-to-noise ratio. Audio Output: 1 watt at low distortion, 2 watts with tolerable distortion. Speaker: Built-in 3" x 5" oval PM. Transmit-Receive Mode Selection in 770 Series: Relay on chassis actuated by "press-to-talk" switch on microphone.

ORIGINAL EQUIPMENT: All models include appropriate built-in power supplies, line cord(s), one transmitting crystal, microphone cord, and connector. Antenna is not supplied as part of original equipment.

POWER SUPPLIES: All models have transformer-operated silicon diode doubler power supplies for 117 VAC, 60 cycle operation. Models 771 and 772 include, additionally, vibrator power supplies for 6 VDC and 12 VDC battery operation, respectively. The latter equipped with both regular and heavy duty line cords having appropriately wired connectors for 117 VAC and battery operation. Power consumption in 117 VAC operation is 60 watts. Current drain is 9A in 6 VDC battery operation and 4A in 12 VDC operation. Tube Complement of 770 Series (Total of 8 plus 1 germanium diode): 12BY7 transmitter final RF amplifier, EC97/6BY5 xmitter crystal oscillator exciter, 6BA6 rec. RF amplifier, 6U8A mixer, 6U8A 1st IF amplifier, crystal local oscillator, 6U8A 2nd IF amplifier, audio amplifier, 6FM8 noise limiter, squelch, microphone preamplifier, 6AQ5 rec. audio output or xmitter modulator, 1N295 germanium diode audio detector.

CABINET: Brown enamel steel with beige enamel cast metal frame; brown lithographed aluminum panel. Posi-Lock® mounting bracket permitting 360° rotation with positive locking at 30° intervals provided with dual supply models only. Size (HWD): 6" x 8½" x 9". Weight: 12 lbs.

ACCESSORIES: Crystals—Additional Transmitting Crystals: Available frequencies on request—\$3.95 each. Receiving Crystal for 770 Series: Available frequencies on request—\$3.95 each.

ANTENNAS:

For maximum range at permanent base station (home, office, factory, etc.)—Ground Plane Antenna AT-3: A roof-type nondirectional antenna fitting 1" IPS pipe. Vertical radiator and four 2-piece radials are solid aluminum, all removable from cadmium plated steel mounting bracket. "U" bolt hardware furnished. Base accepts PL-259 connector. Supplied with 50' of RG-58/U cable having PL-259 connector at one end and auto-radio lead-in connector on other end. Weight 4 lbs.—\$19.95.



With two 740's, the communicating range is up to 10 miles over water, or in other areas of minimum interference; under average conditions (no intervening obstructions), the range is 1½ miles. Under difficult conditions (as in cities, where buildings obstruct line-of-sight between transceivers, and other interference may be present) the range may be reduced to a few blocks. Range is greatly increased if the 740 is communicating with a conventional 5-watt input CB transceiver (such as EICO Models 760, 761, 762, 770, 771, 772), particularly if the latter is a base station with a roof antenna.

The 740 incorporates a 41" telescoping antenna, a long-stroke, well-balanced, push-to-talk switch, and a volume control with on/off switch. A 2¼" PM speaker serves as both speaker and microphone, and is response-corrected for clarity of speech reproduction. A jack is provided for plugging in a high-impedance earphone (above 500 ohms), and automatically cutting out speaker. EICO stocks separate transmit and receive crystals for all CB channels from 1 to 22, specially manufactured to operate on specified channel frequency circuits of this transceiver. The transceiver is supplied with crystals for any specified channel on request. If not otherwise specified, transmit and receive crystals are supplied for channel 16.

SPECIFICATIONS: Crystals: Third overtone miniature plug-in type. Frequency accuracy ±.005%. Transmitting type on channel frequency. Receiving type 455 kc below channel frequency. Battery: 10 V nickel-cadmium rechargeable type. 180 ma-hour capacity based on 1 hour discharge. Provides 8 hours 50% duty cycle operation on one charge. Receiver: Full superheterodyne with crystal-controlled local oscillator. Includes reflex audio stage, driver stage, and push-pull pair of matched transistors in output. Provides 50mW of audio to speaker, 75mW max. Employs 7 transistors and one diode. Transmitter: 100mW input to final (FCC limit for unlicensed operation). High level AM modulation capable of going to 100%. Final stage driven by crystal controlled exciter. Employs 2 transistors. Size (HWD): 7½" x 2¾" x 1½". Weight: 19 oz., including battery.

"... has appealing features for anyone interested in a rugged, dependable unit... the kit is well packaged... The instruction book is excellent, as a matter of fact, it's the best we have ever used... The 740 is definitely well-thought-out, giving performance well worth the price."—CB HORIZONS



770

Deluxe Series

Kit Wired

Model 770: 117 VAC only	\$79.95	\$109.95
Model 771: 117 VAC and 6 VDC*	89.95	119.95
Model 772: 117 VAC and 12 VDC*	89.95	119.95

"A steal... Better than manufacturing specs... Publisher Cooper reports base-to-mobile contact out to 22 miles consistently, often to 40 miles... Thorough manual is almost a handbook for CB radio."—CB HORIZONS

Offering every luxury feature you need for easier, more effective Citizens Band communications:

- 4-Channel Crystal-Controlled Transmitting: Channel-selector knob on front panel chooses one of four transmit crystals.†
- Crystal-Controlled Receiving Available with One Transmit Channel: At one position, matched receiving crystal for same channel is selected to provide crystal control on both transmit and receive.†
- Continuous Tuning Over All 23 CB Channels available with 3 Transmit Channels: Continuous receiver tuning over the 23 CB channels is employed at the remaining three transmit crystal positions.†
- "Press-to-Talk" Button Microphone: Transmit-receive switching accomplished by high-quality relay with minimum capacity between contacts to prevent current leakages at RF frequencies.
- Superhet Receiver with RF Stage for High Sensitivity and Low Signal-to-Noise Ratio: Includes 1750kc IF strip for unequalled image rejection and freedom from oscillator "pulling" on strong signals. IF strip is prealigned, and requires only "touch-up" alignment without instruments.
- Current Metering Jack in Series in Cathode Circuit: Permits checking of input power to transmitter final, and adjusting it to FCC limit.
- Optimum Adjustment to Any Popular CB Antenna: Achieved through use of variable pi network in output.
- 13-Tube Performance: 4 dual function tubes; 4 single function tubes; plus germanium diode.
- Adjustable Squelch Control: In addition to automatic noise limiter.
- Built-in AVC: Automatically boosts gain on weak signals.
- Built-in 3" x 5" Oval PM Speaker and Detachable Ceramic-Element Microphone.
- 5-Watt (maximum permissible power as defined by FCC) Crystal-Controlled Transmitter.
- Covers up to 20 miles: Depending on terrain and antenna height.
- Posi-Lock® Mounting Bracket: Permits 360° rotation, and positive lock at 30° intervals.
- Superb Modern Design: Baked enamel steel cover and cast metal frame, lithographed aluminum panel color-keyed to blend with modern interior decor in both home and car. (Rich brown with beige, white and silver accents.)

†One transmit crystal is supplied. Other transmit crystals are available, with matched receiving crystals if desired, for all 23 CB channels.

*Including Posi-Lock mounting bracket (U. S. PAT.)

Operates 2500 hours on 1 rechargeable leakproof battery

U. S.-made... an original product of EICO research
No license or permit needed... No age limit...

Walkie-Talkie Citizens Band Transceiver #740

Kit \$54.95 Wired \$79.95

COMPLETE WITH BATTERY AND CHARGER
Carrying Case With Shoulder Strap \$3.95

• Finest U. S.-made nickel-cadmium rechargeable battery can be recharged overnight from any 115V outlet. (Charger provided free.) Operating the battery down to only 80% discharge, 8 hours of 50% duty cycle use is provided from a single charge. A typical battery may be recharged 300 times or more, for a saving of over \$200 compared to penlight dry cells • Crystal-controlled transmit and receive • Nine transistors and 1 diode • Full modern superheterodyne receiver—crystal-controlled local oscillator • Crystal controlled transmitter delivers 100 mw of power—full FCC limit for unlicensed Citizens Band operation • Range 1½ miles under average conditions • High quality circuit board, beginner-tested instructions for complete kitbuilding ease and assurance • Powerful — Rugged — Reliable — Economical • Easier to operate than a telephone: Just push button to talk, release it to listen • Fits comfortably in the palm of your hand, slips easily into your jacket pocket—measures only 7½" x 2¾" x 1½", weighs only 19 oz.



For Veteran and Novice—Uncompromising Engineering ...

Compact Design... Modest Prices ...

Ham Radio Gear

New 60-Watt CW Transmitter #723

Kit \$59.95 Wired \$89.95

Ideal for the novice as well as for the advanced ham requiring a low-power stand-by rig, the new Model 723 is a fine example of EICO's no-compromising engineering standards. Employing time-proven circuitry throughout, the new model is nevertheless up-to-the-minute in conception and design. The 6CL6 oscillator is an electron-coupled Colpitts type noted for low crystal heating and minimized effect of plate loading on frequency, and the full-wave, choke input, 500-volt power supply employs a high-efficiency GZ34 rectifier. The output pi network consists of a tapped coil and plate-tuning and antenna-loading air variables. Another air variable tunes the grid tank of the final (and the plate tank of the oscillator). The panel meter can be switched into either the grid or plate circuit of the final. Rear apron load switch inserts extra capacity for low Z loads on 80 and 40 meters. Modulator/accessory socket for modulator input, antenna relay, VFO power take-off and emergency power input. Features include:

- 60 watts input to a rugged 6DQ6-B neutralized final on CW
- External plate modulation, permitting use as AM phone transmitter of up to 50 watts input
- One-knob bandswitch covering 80, 40, 20, 15, and 10 meters
- One-knob Off-Standby-Tune-Transmit switch
- Oscillator keying for break-in operation
- Effective TVI suppression through filtering and bypassing, copper-plated chassis and solid die-cast bezel providing tight-fitting joint between panel and chassis
- Beautifully modern styling—attractive in living room or "shack"

"Compact; well-planned layout. Clean-sounding, absolutely hum-free carrier ... stable." —ELECTRONICS WORLD



SPECIFICATIONS: Power Input: 60 watts CW; 50 watts AM-
phone with external plate modulation. Output Load Impedance:
50-1,000 ohms. Band Coverage: 80, 40, 20, 15, 10 meters. Opera-
tion: Crystal, external VFO, external plate modulation. Tubes:
1-6DQ6-B final amplifier, 1-6CL6 oscillator, 1-GZ34 rectifier. Power
Requirements: 117 volts, 60 cycles AC, 140 watts. Cabinet Size
(HWD): 6" x 8½" x 11¼". Weight: 15 lbs.

90-Watt CW Transmitter* #720

Kit \$89.95 Wired \$129.95

"Ideal for veteran or novice"—ELECTRONIC KITS GUIDE

"Top quality"—POPULAR ELECTRONICS

"Well designed"—ELECTRONICS WORLD (LAB-TESTED)

This exceptionally conservative, stable, high efficiency instrument, housed in a modern "low-silhouette" cabinet to permit its use in normal living room space, is a very "clean" 90-watt CW, 80 through 10 meters bandswitching amateur transmitter. External plate modulation terminals permit use as an AM phone transmitter delivering up to 65 watts plate power input with the EICO Model 730 High Level Universal Modulator-Driver. A basic VFO unit will also be available in a short time, which can be plugged into the Model 720 without modification. Some important design features of the 720 are:

- One-knob band-switching—no coils to change
- One-knob power, tune, and operate switch
- Final amplifier grid drive control without detuning oscillator
- 6146 final amplifier for full 90 watts CW input
- Completely sealed cabinet and careful by-passing and choking of all input and output leads for effective TVI suppression
- Protection of final amplifier, provided by clamper tube circuit, when a loss of excitation exists
- No shock hazard at key terminals
- "Novice limit" calibration (75 watts) on the meter
- Matching antennas from 50 to 100 ohms



SPECIFICATIONS: Power Input: 90 watts CW (novice limit cali-
bration on meter); 65 watts AM-phone with EXT plate modulation.
Output Load Impedance: 50-1000 ohms. Band Coverage: 80, 40,
20, 15, 11, 10 meters. Operation: XTAL, EXT, VFO. Tubes: 1-6146
final amplifier, 1-6CL6 oscillator, 1-6AQ5 clamper, 1-6AQ5 buffer-
multiplier, 1-GZ34 rectifier. Power Requirements: 115 volts, 60
cycle AC. Cabinet Size: 15" wide x 5" high x 9" deep. Shipping
Weight: 30 lbs.

*U. S. Pat.

High-Level Universal Modulator-Driver #730

Kit \$59.95 Wired \$89.95

Cover E-5 \$4.50

This superb, truly versatile, low cost modulator can deliver 50 watts of undistorted audio signal for phone operation—more than sufficient to modulate 100% the EICO Model 720 90-Watt CW Transmitter, EICO Model 723 60-Watt CW Transmitter or any transmitter whose RF amplifier has a plate input power of up to 100 watts.

The multi-match output transformer matches most loads between 500 to 10,000 ohms. Its unique over-modulation indicator permits easy, reliable monitoring, thus precluding any need for a plate meter. It provides low level speech clipping and filtering with peak speech frequency range circuitry. Its low distortion feedback audio circuitry employs premium quality audio power pentodes; the vacuum tube rectifier is the extra-rugged, slow warmup GZ34 which eliminates high starting voltages and lengthens electrolytic and tube life.

Balance and bias adjustment controls are also provided. Finest quality, conservatively rated parts are used throughout. The Model 730 is also an excellent low impedance driver for a class B high-power modulator.



SPECIFICATIONS: Power Output: 50 watts. Output Transformer
Matching Impedances: 500 to 10,000 ohms. Inputs: Low level, high
impedance—crystal or dynamic mikes. High level, low impedance
—phone patch, etc. Tubes: 1-ECC83/12AX7 speech amplifier, 1-6AL5
speech clipper, 1-6AN8 amplifier driver, 2-EL34/6CA7 power output,
1-EM84 over-modulation indicator, 1-GZ34 rectifier. Power Require-
ments: 117 volts, 60 cycles; 150 watts drain. Size: 6" high x 14"
wide x 8" deep. Weight 21 lbs.

Add 5% in the West. Slightly higher in Canada.

Ham Accessories...



Self-Powered Variable Frequency Oscillator #722

Kit \$44.95 Wired \$59.95

A VFO that is truly capable of coping with the crowded conditions encountered today in the Ham Bands, the 722 provides full coverage of the five bands from 80 to 10 meters in six ranges (the 10-meter band being covered in two ranges). Output is high enough to drive any modern transmitter on all the bands.

Near-crystal stability is achieved by carefully coordinated electrical, mechanical, and thermal design:

- Electron-coupled, series-tuned Colpitts (Clapp) type oscillator incorporates a 1½" air-core coil and temperature-compensating capacitors
- High L to C ratio minimizes the circulating tank current, virtually eliminating drift due to internal heating of tank circuit
- Buffer-multiplier stage performs as a "straight-through" buffer amplifier on 80 meters, and a doubler on all higher bands, providing excellent isolation between output lead and oscillator, as well as high output
- VR tube eliminates any effect due to line voltage variation
- Rigid mechanical construction and use of double bearing on main tuning capacitor avoids mechanical causes of frequency shift
- Enclosure of frequency-determining elements of oscillator in shielding compartment provides both heat isolation and shielding from outside mechanical movements and body capacity
- Low heat silicon diode doubler power supply eliminates drain on transmitter power supply

Other important design features include a very large and easy-reading slide rule dial and a velvet-smooth, extremely reliable drive. Remote control operation is possible with an external switch or relay that is energized by the transmitter. A lever type spotting switch is provided on the front panel.

SPECIFICATIONS: Output Frequencies: 3.5-4.0 mc, 7.0-7.3 mc, 7.25-7.64 mc. Calibrated Bands: 3.5-4.0 mc (80m), 7.0-7.3 mc (40m), 14.0-14.4 mc (20m), 21.0-21.45 mc (15m), 28.0-29.2 mc (10m), 29.0-29.7 mc (10m). RF Output: 10-20 V. Tube Complement: 6AU6 oscillator, 6CB6 buffer-multiplier, OA2 voltage regulator. Power Source: 117 V, 60 cps, AC. Controls: BAND PWR OFF switch, FUNCTION (SPOT, STANDBY, OPERATE) switch, TUNE control. Size (HWD): 6" x 8½" x 9". Weight: 8 lbs.

Transistor Portable Radio RA6

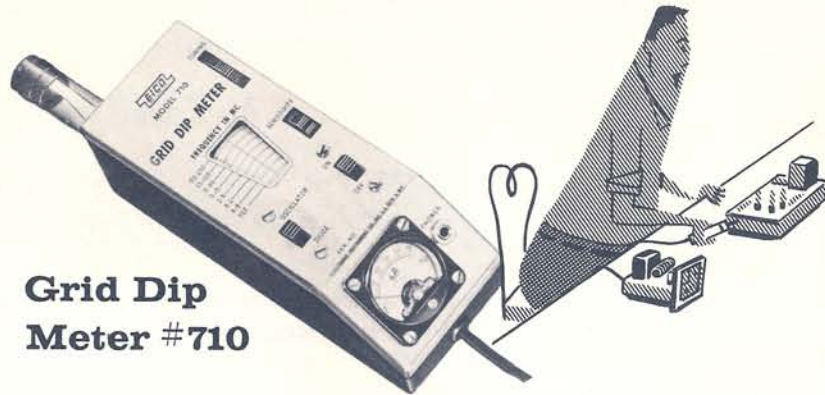
Kit \$29.95
Includes FET



"This new portable... is among the finest we have seen to date"
—ELECTRONICS WORLD LAB TESTED

Compact Size: 8½" long, 4½" high, 2½" deep
Shipping Weight: 3 lbs.
Requires battery (not supplied) of N.E.D.A. type 1602 (type number for Ray-O-Vac, Burgess, Mallory) equivalent to RCA VS305, Eveready 246, mercury type Mallory TR246R.

Civil Defense and emergency rescue authorities recommend a battery-operated radio in every home. Every EICO Transistor Portable shows the two CONELRAD frequencies as 2 gold arrows on the tuning dial.



Grid Dip Meter #710

Kit \$29.95 Wired \$49.95

Including complete set of coils for full band coverage

- An exceptionally versatile, stable, rugged, compact instrument for work in amateur radio and in electronic servicing
- Covers all broadcast, FM, "ham" and TV bands in 8 overlapping ranges
- Precision 500-microampere meter movement
- Accurately wound (±1%) plug-in coils

Basically a VFO with a microammeter in its grid circuit, the 710 determines frequency of other oscillators or tuned circuits; has a sensitivity control and phone jack to facilitate "zero beat" listening; and excels as an absorption wave meter. Ham uses: pretuning and neutralizing transmitters, power indication, locating parasitic oscillations, antenna adjustment, correcting TVI, general de-bugging with transmitter power off, determining C,L,Q. Electronic servicing uses: alignment of traps, filters, IF's, peaking compensation networks, and as signal or marker generator. Easy to hold and thumb-tune with one hand. Continuous coverage of broadcast, FM, ham and TV bands in 8 ranges. Brushed satin deep-etched aluminum panel; grey wrinkle steel case.

SPECIFICATIONS: Frequency Range: 400 kc-250 mc in 8 overlapping ranges. Meter Movement: 500 microamperes. Plug-in Coils: Accurately wound to ±1% accuracy, inside polystyrene forms. Labelled for easy identification. Circuit: Exceptional stability is obtained with improved grid current stability over tuning range. Tuning: Tuning condenser, equipped with planetary drive of 1:7 ratio. Tube: 6AF4(A) (Colpitts oscillator). Scale: Rotating drum, 340° rotation. All scales on the drum are the same length for all ranges. Scale is illuminated by pilot light, is approximately 3¾" long. Power Requirements: 117V, 60 cps; 10 watts. Power Supply: Transformer-operated selenium rectifier. Dimensions: 2¼" high x 2½" wide x 6½" long. Net Weight: 3 lbs.

New Code Practice Oscillator Model 706

Kit \$8.95 Wired \$12.95

Supplied with battery



Invaluable aid for learning Morse Code with outstanding conveniences not found in other units. Unusually efficient speaker provides a clean, loud signal. Includes pitch control to obtain subjectively pleasing tone, phone jack for private use, and choice of tone, flashing light, or both together. Employs battery-operated transistor, oscillator to provide many years of trouble-free service.

SPECIFICATIONS: Tone Frequency Range: Approx. 500 to 2000 cps, continuously variable. Controls: PITCH, TONE, and/or LIGHT. Current Drain (Tone): 40 ma at 3VDC. Current Drain (Light): 300 ma at 3VDC. Current Drain (Tone and Light): 340ma at 3VDC. Terminals: Key, Phones. Case: High-impact bakelite. Panel: Satin finish, deep-etched aluminum. Size: 6½" high, 3¾" wide, 2¾" deep. Shipping Weight: 2 lbs.

Even a novice can build this modern American all-transistor superheterodyne portable receiver and be sure of a handsome professional assembly, and outstanding performance. The utilization of transistor circuitry and finest quality parts throughout assures you that your set will not only perform magnificently, but will take the kind of punishment that a portable radio should take.

Here is a portable that gives you a lifetime of big-set radio entertainment wherever you go, indoors or out: on picnics, boating, bicycling, strolling, hiking, horseback riding. Plug in an earphone and listen in complete privacy, without disturbing others, in dormitories, or in hospital rooms.

Developed in EICO's laboratories to meet our traditionally high standards, the RA6 provides unusual sensitivity, selectivity, and high undistorted sound output in a size that's just right for comfortably carrying. An efficient 4" x 6" oval PM speaker driven by a 250 milliwatt push-pull output stage supplies satisfying big-set volume and tone quality.

Operating features include planetary vernier tuning (7:1 reduction) that makes it easy to find and tune in stations properly; a high impedance earphone jack that eliminates the drain of the output stage when an earphone is in use; and a built-in rod-type antenna for good reception in any location. Kit construction features include: the latest type plug-in transistor sockets that prevent overheating the transistors during soldering and provide easy replacement should it ever become necessary; and realigned IF transformers permit top performance to be achieved by a slight touch-up alignment using a radio station broadcast as a reference. The RA6 is housed in a handsome tan simulated leather carrying case with a retractable handle.

New Versatility and Compactness in Professional Test Equipment

AC VTVM & AMPLIFIER #250



kit \$49.95 wired \$79.95

"... high range/accuracy and low price... low price, yet laboratory accurate..." — **ELECTRONIC INDUSTRIES MAGAZINE**

"The instrument must be able to give accurate indications regardless of frequency. Such an instrument has been introduced by EICO... meets most needs of critical audio specialists. Many AC VTVM's fail to provide the sensitivity found in the Model 250." — **PF REPORTER**

The Model 250 is a high sensitivity, wide-band AC VTVM & AMPLIFIER of laboratory accuracy and quality. It measures AC voltage from 100 microvolts to 300 volts in 12 ranges. A function selector switch on the panel converts the instrument to a wide-band amplifier with a gain of 60 db on the 1mv range, and a maximum output of 5 volts RMS.

The instrument responds to the average value of the applied wave and reads in RMS value of a sine wave. The 0-1, 0-3 voltage scales are linear. The decibel scale is based on 0 db = 1 mw in 600 ohms, with 10 db interval between ranges.

features

- Frame-grid triode cathode follower input circuit; frequency-compensated input attenuator, and cathode circuit attenuator
- Use of high-gain frame-grid pentodes permits fewer amplifier stages for less phase shift and greater stability
- Two-stage R-C coupled amplifier, and full-bridge meter circuit in one overall feedback loop
- Single sensitivity adjust
- No response adjustment required in amplifier circuit
- Stabilized power supply incorporates voltage regulator
- DC-biased filaments and hum-adjust pot

specifications

VOLTMETER: Voltage Ranges: 1, 3, 10, 30, 100, 300 RMS millivolts. 1, 3, 10, 30, 100, 300 RMS volts. Decibel Range: -80 to +52 db, in 12 ranges. Frequency Response: ±0 db 10 c to 600 kc. Input Impedance: 10 megohms shunted by 15 mmf. Accuracy: ±3% of full scale.

AMPLIFIER: Max. Output Voltage: 5 RMS volts. Max. Gain (1 mv Range): 60 db. Frequency Response: +0, -3 db 8 c to 800 kc. Maximum Hum & Noise: -40 db with signals above 2 millivolts. Input Impedance: 10 megohms shunted by 15 mmf. Output Impedance: 5K ohms. Tube Complement: 2-6EJ7/EF184 frame-grid pentodes, 1-6FY5/EC97 frame-grid triode, 1-6X4 full-wave rectifier, 1-OA2 voltage regulator. Power Requirements: 105-125 VAC, 60 cps; 15 watts drain. Size (HWD): 8½" x 5¾" x 7". Weight: 7 lbs.

AC VTVM #255



kit \$44.95 wired \$72.95

The Model 255 is a high sensitivity, wide-band AC VTVM of laboratory accuracy and quality. It measures AC voltage from 100 microvolts to 300 volts in 12 ranges.

The instrument responds to the average value of the applied wave and reads in RMS value of a sine wave. The 0-1, 0-3 voltage scales are linear. The decibel scale is based on 0 db = 1 mw in 600 ohms, with 10 db interval between ranges.

features

- Frame-grid triode cathode follower input circuit; frequency-compensated input attenuator, and cathode circuit attenuator
- Use of high gain, frame-grid pentodes permits fewer amplifier stages for less phase shift and great stability
- Two-stage R-C coupled amplifier, and full-bridge meter circuit in one overall feedback loop
- Single sensitivity adjust
- No response adjustment required in amplifier circuit
- Stabilized power supply incorporates voltage regulator
- DC-biased filaments and hum-adjust pot

specifications

Voltage Ranges: 1, 3, 10, 30, 100, 300 RMS millivolts. 1, 3, 10, 30, 100, 300 RMS volts. **Decibel Range:** -80 to +52 db in 12 ranges. **Frequency Response:** ±0 db 10 c to 600 kc. **Input Impedance:** 10 megohms shunted by 15 mmf. **Accuracy:** ±3% of full scale. **Tube Complement:** 2-6EJ7/EF184 frame grid pentodes, 1-6FY5/EC97 frame-grid triode, 1-6X4 full-wave rectifier, 1-OA2 voltage regulator. **Power Requirements:** 105-125 VAC, 60 cps; 15 watts drain. **Size (HWD):** 8½" x 5¾" x 7". **Weight:** 7 lbs.



AC VOLT-WATT METER #261



kit \$49.95 wired \$79.95

"Technicians who do high fidelity and public address service-installation work will find this meter a time-saving addition to their basic collection of test instruments." — **ELECTRONIC TECHNICIAN**

AC voltmeter and load-compensated audio-wattmeter of unique quality and accuracy. Measures AC voltage from 1 millivolt to 1000 volts in 11 ranges, and power from .015 milliwatt to 150 watts, in 7 ranges, across standard loads from 4 to 600 ohms.

The instrument incorporates a tapped power resistor load (4, 8, 16 and 600 ohms) to handle up to 80 watts of power on 8 ohms, and 40 watts on other taps. It may be switched to external load up to 150 watts. The meter is automatically compensated for any load selected, internal or external, to provide a single watt scale for all loads and ranges.

The instrument is an average reading device calibrated in RMS voltage or power of a pure sine wave. The 0-1, 0-3 voltage scales are linear and the single 0-1.5 power scale is quadratic. In wattmeter use, the decibel scale reads directly in dbm with any of the four standard loads selected. In voltmeter use, the decibel scale reads directly in dbm with a 600 ohm load; corrections must be applied for any other load. (0 dbm = 0.775V across 600 ohms). The interval between successive wattmeter or voltmeter ranges is 10 db.

applications

Use it to measure amplifier gain response, amplifier power output, network response, and output level... Use it for null indication, for "Q" measurement, and for comparison measurement of capacity, resistance, and inductance.

features

- 11 Voltage Ranges—7 Power Ranges
- Automatically compensates for any load selected, internal or external, to provide a single watt scale for all loads and ranges
- Voltage-regulated silicon diode power supply
- 1000-Volt range for power transformer checking

specifications

VOLTMETER: Ranges: .01, .03, .1, .3, 1, 3, 10, 30, 100, 300, 1000 RMS volts. **Frequency Response:** ±0 db 10 c to 150 kc, -3 db at 500 kc. **Input Impedance:** 2 megohm shunted by 15 mmf. **Accuracy:** ±4% of full scale.

WATTMETER: Ranges: .15 mw, 1.5 mw, 15 mw, 150 mw, 1.5W, 15W, 150W. **Frequency Response:** ±0 db 10 c to 100 kc. **Accuracy:** ±5%. **Internal Loads:** 4 ohms (40W), 8 ohms (80W), 16 ohms (40W), 600 ohms (40W). **External Loads:** 4 ohms, 8 ohms, 16 ohms, 600 ohms (all to 150W). **Tube Complement:** 6BL8/ECF80 pentode-triode, 12AT7 dual triode, OB2 voltage regulator. **Power Requirement:** 105-125 VAC, 60 cps; 15 watts drain. **Size (HWD):** 8½" x 5¾" x 7". **Weight:** 6 lbs.

METERED VARIABLE AUTO-TRANSFORMER AC BENCH SUPPLIES



New EICO
Engineering
Achievement

"... its versatility is really limited only by the ingenuity of its operator."
—PF REPORTER

Model 1073

(3-ampere current rating)

kit \$35.95 wired \$47.95

Model 1078

(7½-ampere current rating)

kit \$42.95 wired \$54.95

Invaluable for production line testing, quality control, and service work, EICO's new, instrument-styled, fully metered variable AC supply is a must for every engineering bench... Use it to study performance under varying line conditions—to check power consumption—to compensate for power line voltage variations—to expose intermittent components by inducing failure with over-voltage... Available in two models differing only in current rating and ammeter range, the new instrument is rugged and compact in construction and presents an entirely professional laboratory appearance.

features

- 0-140 VAC adjustable output voltage from 120 VAC power line input
- Highly efficient variable auto-transformer of toroidal core design
- Smooth rotary brush-tap controlled by dial on panel
- Linear variation of output voltage, 0-140 volts
- No waveform distortion or significant voltage drop from no load to full load
- Separate output ammeter and output voltmeter
- Dual range ammeter: switching permitted under load
- Auto-transformer and ammeter protected by separate extractor-post fuses on panel
- 2-pole power switch disconnects both sides of power line

specifications

Frequency: Model 1073—60 cycles. Model 1078—60 cycles. **Input Voltage:** 120 VAC. **Output Voltage:** 0-140 VAC (30-140 VAC voltmeter). **Output Current:** 1073—Two ranges: 0-1, 0-3 amperes. 1078—Two ranges: 0-2½, 0-7½ amperes. **Switching:** POWER switch, 2-pole type, disconnects unit from both sides of power line at OFF position. RANGE switch selects lower or higher current range for ammeter. Range may be switched under load. **Meter Accuracies:** ±3% of full scale. **Line Connection:** 2-wire cord and plug. **Load Connection:** 2-wire output receptacle. **Fusing:** Auto-transformer—Model 1073: 3 ampere slo-blo. Model 1078: 7½ ampere slo-blo. Ammeter—1-ampere fuse protects ammeter on both current ranges for Model 1073. 2½-ampere fuse protects ammeter on both current ranges for Model 1078. **Size (HWD):** 8½" x 5¾" x 7". **Shipping Weight:** Model 1073—12 lbs. Model 1078—13 lbs.

VACUUM TUBE VOLTMETER #222

Including
exclusive
Uni-Probe®
(U.S. Pat.)

New EICO
Engineering
Achievement



kit \$27.95 wired \$42.95

"The instrument incorporates such features as better-than-usual accuracy on lower ranges, low ohmmeter voltage, and the EICO UniProbe."

"The Model 222 is useful in the service shop as a general-purpose VTVM. The voltage ranges are chosen to provide for accurate low-voltage measurements in transistorized equipment, and to extend the high-voltage range to facilitate measurements in communications or industrial equipment."

"When calibration was completed, one characteristic of the instrument was readily apparent: We noted very little 'needle shift' when switching from range to range or from function to function."

"The AC-voltmeter function of the Model 222 is particularly useful to the audio technician because the frequency response is compensated to be flat from 30 cps to 3 mc. In fact, the instrument we tested in the lab exceeded this specification, demonstrating a flat response even beyond 3 mc."

"Thus, the thoughtful service technician can find many additional uses for this instrument."
— PF REPORTER

Provides entirely electronic, direct-reading measurement of ac and dc voltages (up to 1500 volts in five ranges) and resistance on a rugged, highly-legible 4½" meter... Invaluable for signal tracing, for alignment, for voltage and resistance measurements in television, AM/FM radio, and hi-fi, for checking frequency response and continuity, and for testing many types of electrical equipment.

features

- Calibration without removing from cabinet
- Complete electronic overload protection (plus fuse)
- Input impedances of 11 megohms on dc and 1 megohm on ac to eliminate errors caused by circuit loading
- 1% precision ceramic resistors
- Transformer operation for isolation and safety
- On ohmmeter ranges, high sensitivity of dc amplifier allows resistance measurements up to 1000 megohms using only 1½-volt battery—thus eliminating danger to delicate apparatus
- Positive and negative dc positions on function switch eliminate need to reverse test leads when measuring negative dc voltage
- One zero-adjustment for all functions and ranges
- Zero-center scale included on meter facilitates discriminator alignment in tv, fm, and afc circuits
- Dual-purpose AC/DC Uni-Probe® — exclusive with EICO: Terrific timesaver: a half-turn of probe-tip selects DC or AC-Ohms

specifications

DC VOLTMETER: Ranges: 0-3, 15, 75, 300, 1500 volts (to 30 kv with HVP probe using 1090 megohms Multiplier Resistor). **Input Impedance:** 11 megohms. **Accuracy:** ±3%.

AC VOLTMETER: Ranges: 0-3, 15, 75, 300, 1500 volts. **Input Impedance:** 1 megohm. **Accuracy:** ±5%. **Frequency Response:** 30 cps to 3 mc (up to 250 mc with PRF probe; peak-to-peak readings directly on dc scale possible with PTP probe).

OHMMETER: 0.2 ohms to 1000 megohms in 5 ranges.

Tube Complement: 12AU7, 6AL5. **Battery:** 1.5 volts. **Size (HWD):** 8½" x 5¾" x 7". **Weight:** 5 lbs. **Power Requirements:** 117V, 60cps; 5 watts drain.

extra-low-ripple 6- and 12-volt BATTERY ELIMINATOR AND CHARGER #1064

New EICO
Engineering
Achievement



kit \$45.95 wired \$54.95

1064: "Our checks showed the instrument's residual ripple to be low enough to permit its use with any transistorized device from the pocket portable to automobile hybrid receivers."
— ELECTRONICS ILLUSTRATED

Delivers the smooth, undistorted DC necessary for servicing transistorized equipment, or for any application where minimum ripple is mandatory. The extra-low-ripple output is achieved through the use of a special L-C filter circuit consisting of a very heavy-duty iron choke and a dual 5000 mf 20 Volt electrolytic filter capacitor. The ability of this circuit to handle the full continuous as well as the higher intermittent rated current output of the instrument, without danger of overloading or burnout—on both current ranges—ensures that the many advantages of its highly filtered DC output are available for all conceivable applications.

features

- Two DC voltage ranges: 0-8 volts and 0-16 volts
- Simultaneous monitoring of both voltage and current on both ranges
- Exclusive: Automatic switching of appropriate ammeter range as you select either of the 2 voltage ranges
- Separate voltmeter and dual-range ammeter for more accurate readings
- Continuous voltage adjustment with variable-type transformer
- Fused transformer primary
- Transformer secondary also protected by means of automatic re-set overload relay
- Extra heavy-duty selenium rectifiers
- All parts operated well below their stated ratings for voltage and current
- Compact, professional appearance

applications

Operating 6- or 12-volt transistor, tube, or "hybrid" auto or portable radios under repair... Charging 6- or 12-volt storage batteries... Simulating various battery operating voltages for detecting intermittents and shorts in radio equipment... Supplying DC for filament voltages in high gain audio circuit work... Determining starting point of vibrators... Determining voltage operating range of oscillator circuits... Running small electrical appliances (shavers, trains, etc.).

For marine use: Operating boat lights, radio-phone, amplifiers, transmitters, bilge pump and other electrical utility units while at dockside, eliminating the need for installing a costly secondary AC lighting system.

specifications

DC Output Voltage Ranges: (Range selected by 6V-12V toggle switch) 0-8 volts, 0-16 volts. **Current Ratings:** 0-8 volt range: 10 amps continuous, 20 amps intermittent; 0-16 volt range: 6 amps continuous, 10 amps intermittent. **AC Ripple:** 0-16 volts range: 0.3% @ 2 amps, 1% @ 6 amps, 1.5% @ 10 amps; 0-8 volt range: 1.5% @ 2 amps, 2% @ 6 amps, 4.5% @ 10 amps. **Meters:** Voltmeter—0-20 volts. Ammeter—0-10, 0-20 amps. **Power Requirements:** 105-125 volts AC, 60 cps; 150 watts. **Size (HWD):** 8½" x 5¾" x 7½". **Weight:** 14 lbs.

peak-to-peak VTVM #232

complete with UNI-PROBE® (U.S. Pat.)

kit \$29.95 wired \$49.95



for COLOR &
MONOCHROME
TV SERVICING

† Calibration without
removing from
cabinet

**Dual-purpose
AC/DC UNI-PROBE
— exclusive with
EICO: Terrific
timesaver! A half-
turn of probe-tip
selects DC or AC-
Ohms

DELUXE vacuum tube VOLTMETER #214

kit \$34.95 wired \$54.95



vacuum tube VOLTMETER #221

kit \$25.95 wired \$39.95



The established leader in professional peak-to-peak VTVMs. You could spend 2 and 3 times more and not get all the advanced engineering features of this precision instrument. By far the best professional VTVM value in electronics. Up-to-the-minute in circuitry, design, functional simplicity and modern styling, with high sensitivity and precision, wide ranges and versatility—and day-in day-out dependability. Nobody but EICO brings you such outstanding instrument performance for so low a price!

applications

For all TV/FM/AM/electronic servicing with highest accuracy... true peak-to-peak measurement of complex voltage waveforms (necessary in TV servicing) and both peak-to-peak and RMS measurement of sine wave AC voltages on separate scales, plus DC voltage and resistance measurements... precision dynamic DC voltage measurement with negligible circuit loading... frequency response measurement... output meter... servicing electrical equipment.

features

New balanced bridge circuit for exceptional stability and accuracy • High impedance input for negligible circuit loading • Large 4½" meter in can't-burn-out circuit • 7 non-skip ranges on every function • 4 functions: + DC Volts, — DC Volts, AC Volts, Ohms • Uniform 3 to 1 range ratio for extreme wide-range accuracy • Zero-center for TV-FM discriminator alignment • One zero-adjustment for all functions and ranges • 1% precision ceramic multiplier resistors • Smart professional styling — satin finish etched aluminum-panel, grey wrinkle steel case • Transformer-operated for isolation and safety.

specifications

Peak-to-Peak AC Voltmeter Ranges: 0-4, 14, 42, 140, 420, 1400, 4200 volts. RMS Sine Voltage Ranges: 0-1.5, 5, 15, 50, 150, 500, 1500 volts. DC Voltage Ranges: 0-1.5, 5, 15, 50, 150, 500, 1500 volts. Reads up to 30,000 volts with HVP probe* using 1090-megohms Multiplier Resistor. Frequency Response: 30 cps to 3 mc (up to 250 mc with PRF probe)*. Ohmmeter: 0.2 ohms to 1000 megohms in 7 ranges. Tube Complement: 12AU7, 6AL5, selenium rectifier. Battery: 1.5 v. Weight: 7 lbs. Power Requirements: 105-125 VAC, 60 cps; 5 w. Size (HWD): 8½" x 5" x 5".

All the versatility and performance-proven features of #221—Plus the extra convenience and legibility of its big 7½" meter.
Size: (HWD): 9" x 13¼" x 6". Weight: 11 lbs. Power Requirements: 105-125 volts AC, 50/60 cps, 10 watts. Lifetime deep-etched aluminum panel; rugged grey steel case.

DELUXE peak-to-peak VTVM #249

with 7½" Meter & exclusive Uni-Probe

kit \$39.95 wired \$59.95



for COLOR &
MONOCHROME
TV SERVICING

Dual-Purpose AC/DC Uni-Probe
Terrific time-saver! Only 1
probe performs all functions —
a half-turn of probe-tip selects
DC or AC-OHMS!

ALL THE OUTSTANDING AND EXCLUSIVE FEATURES OF #232 — PLUS THE EXTRA CONVENIENCE AND READABILITY OF ITS BIG 7½" METER. AN IDEAL BENCH INSTRUMENT.

Size: (HWD): 8½" x 13" x 5". Weight: 9 lbs. Power Requirements: 105-125 volts AC, 60 cps, 5 watts.

• Smart professional styling — satin finish etched aluminum panel, grey wrinkle steel case

All the modern advanced features you need for all-around efficiency of electronics servicing... versatility, rugged construction, life-time dependability—all at EICO's amazing low price.

applications

The famous EICO performance-proven Vacuum Tube Voltmeter—OVER 100,000 in use the world over—an excellent rugged instrument for field, shop, laboratory or production line use. Entirely electronic measurement of a-c voltage, d-c voltage, decibels and resistance... precision dynamic d-c voltage measurement with negligible circuit loading... all TV, radio and electronics servicing... frequency response measurement... output meter... checking continuity... servicing electrical equipment.

features

Improved, double triode, balanced bridge circuit for accuracy and stability • High impedance 25 megohm input for negligible circuit loading • 1% precision ceramic resistors • Large 4½" meter in CAN'T-BURN-OUT CIRCUIT • Center scale zero adjustment for TV & FM alignment • DB scale for gain measurement • Transformer-operated for isolation and safety • Accessory probe kits available*.

specifications

DC Voltmeter: Ranges: 0-5, 10, 100, 500, 1000 volts. To 30 kv with HVP probe* using 740-megohms. Multiplier Resistor. Input Resistance: 25 megohms. Accuracy ±3%. AC Voltmeter: Ranges: 0-5, 10, 100, 500, 1000 volts. Input Resistance: 3 megohms. Accuracy ±5%. Frequency Response: 20-200,000 cps; up to 200 mc with PRF accessory probe*. Peak-to-peak with PTP accessory probe*. DB Ranges: 20 to +55 db in 5 ranges. Ohmmeter: Ranges: 0-1000 ohms, 10,000 ohms, 1 megohm, 10 megohms, 100 megohms. Accuracy: ±3%. Multiplier Resistors: ±1% precision ceramic. Tubes: 1-6H6, 1-6SN7, 1-6X5. Batteries: 1½ V flashlight cell. Power Requirements: 105-125 VAC, 60 cps, 10 watts. Size (HWD): 9-7/16" x 6" x 5". Meter Size: 4½". Weight: 7 lbs. Lifetime deep-etched aluminum panel; rugged grey steel case.

VISU-TRONIC® Aids for Electronic Teaching

Now you can dramatically demonstrate and teach the principles of electronics utilized in test equipment and receiver circuits. Visu-Tronic® teaching aids speed your students' understanding of theory, practice, schematics and symbols.

- Components snap in and out quickly to allow easy substitution and trial troubleshooting.
- Circuits silk-screened on durable masonite, protected by transparent lacquer coating — enclosed in wood frame.
- Equipped with mounts for wall and legs for desk-top use.
- 27¾" H x 40¾" W x 3½" D.



VISU-TRONIC®
VTVM Demonstrator
#249D \$89.95

A complete schematic of EICO's Model 249 7½" meter VTVM. Complete with all necessary parts to build a working model of a VTVM, including UNI-PROBE®, in kit form.



VISU-TRONIC®
6-TRANSISTOR RADIO
DEMONSTRATOR
#RA6D \$79.95

Complete, working demonstrator of EICO's RA6 transistor radio. All necessary parts included.

DYNAMIC VTVM DEMONSTRATOR
#221D \$10.00



Realistically reproduces the entire front panel of the famous EICO VTVM #221 — two-and-a-half times as big as life, for clear legibility and easy viewing, even from the back of the room. Function and range knobs click convincingly into place when turned. Dial may be set by turning Zero Adjust or Ohms Adjust knob, just as on an actual VTVM. SPECIFICATIONS: Punched holes for easy hanging • Rugged steel cabinet, brushed aluminum panel • 13" meter scale • 23" high, 14¾" wide, 3½" deep.



**SUPERIOR
CIRCUIT
TECHNIQUES**

**ALL THE
CONTROL
FACILITIES AND
PERFORMANCE
QUALITY OF
SCOPES
COSTING MANY
TIMES MORE**



**ADVANCED GENERAL PURPOSE
5" OSCILLOSCOPE #427**

kit \$69.95 wired \$109.95

The Model 427 is a general purpose oscilloscope employing advanced, high-quality circuit techniques refined and cost-reduced through years of development work by EICO. While low-priced enough for beginners, the Model 427 has all the control facilities and performance quality demanded in general laboratory work, production testing, audio and ultra-sonic development and servicing, ham shacks, and advanced home workshops. Rugged, simple mechanical construction, plus clean, open circuit layout make this scope easy to build even by a novice.

features

Vertical amplifier direct-coupled for minimum phase distortion, and push-pull for maximum linearity, throughout (6 stages in 3 push-pull pairs) • Choice of direct or capacitive input coupling • One internal bias adjust, and a dc balance adjust on the panel, for simple adjustment to optimum performance • Four-position (plus CAL) frequency compensated vertical input attenuator • Saw-tooth (sweep voltage) output jack on panel for connection to vertical input jack when adjusting the frequency compensation trimmers • INTENSITY, FOCUS, and ASTIGMATISM controls on the front panel • Sharp, clean trace-free of blooming • Instantaneous, drift-free positioning permits centering and part of a trace expanded to 30cm vertically or 20cm horizontally • Easy, direct connection to vertical deflection plates without need of removing and replacing shorting links or wires • Rest leads are simply plugged into rear jacks, and switch turned from AMPLIFIER to DIRECT PLATES.

specifications

Vertical Amplifier: Flat from DC to 500kc, —6db at 1Mc; sensitivity 10mv p-p or 3.5mv rms per cm; direct or capacitive input coupling; fine attenuator, plus a four position, frequency compensated coarse attenuator providing sensitivities of 10mv p-p/cm, 100mv p-p/cm, 1V p-p/cm, 10V p-p/cm one calibration voltage input position at which a 60cps 100mv p-p square wave is injected; input impedance 1M ohms shunted by 30mmf on all attenuation ranges; positioning range permits centering any part of trace expanded to three times CRT diameter. Horizontal Amplifier: Flat from 2cps to 450kc; sensitivity 0.5V p-p or 0.18V rms per cm; cathode follower input with fine attenuator in output; input impedance 10M ohms shunted by 40mmf. Positioning range permits centering any part of trace expanded to 2X CRT diameter. Sweep Circuit: Recurrent sweeps from 10cps to 100kc in four overlapping ranges; minimum ratio of forward sweep time to retrace time 15:1, synchronization may be internal pos., internal neg., 60cps, or external; synchronization is fully automatic on all ranges and modes; full retrace blanking. Calibrator: 60cps square wave, 100mv p-p. Tubes: 2-6BL8, 2-12AT7, 1-6C10, 1-12AU7, 5DEPI CRT (NE2 Neon Calibrator). Power Supply: 1-6X4 low-voltage rect.; 1-1V2 high voltage rect. Power Requirements: 105-125V 60cps; 55W drain. Size (HWD): 12½" x 8½" x 16¼". Weight: Approximately 28 lbs.

ELECTRONIC SWITCH #488

kit \$23.95 wired \$39.95

Makes your 1 scope more useful than 2 in many cases! Simultaneously observe 2 patterns on 1 scope: compare voltage and current amplitudes, waveforms, freqs. and phase relationships. Continuously variable switching rates from less than 10 cps to over 2000 cps. Very useful as square wave generator over same range.



Approximate Switching Rates (also Square Wave Generator Range): Low Range: less than 10cps to 100cps continuously variable; Middle Range: 50cps to 400cps continuously variable; High Range: 250cps to 2000cps continuously variable. Signal Amplifiers: (2). Frequency Response (sinusoidal): DC to 30,000 (—2db); useful to 300,000cps. Maximum Gain: 10 times (continuously variable gain control with negligible phase distortion to 25kc). Input Impedance 100,000 ohms. Max. Input at Greatest Attenuation: 400 volts peak-to-peak (142v rms). Output Impedance: 50,000 ohms. Power Requirements: 105-125 volts AC, 60 cps, 25 watts. Overall Size: 6" high x 8" wide x 6" deep. Weight: 7 lbs. Smart professional styling—satin finish deep-etched aluminum panel, grey wrinkle steel case.

COLOR
& black & white
lab & tv service
5" SCOPE
5 mc bandwidth
& dc amplifiers
#460
kit \$89.95
wired \$129.50



applications

Ideal for COLOR and BLACK-AND-WHITE TV servicing; electronic and industrial research, development, maintenance and production line work; all audio testing and experimentation; reproduction of 3.58mc sync burst and 3.58mc oscillator signals in color TV sets; DC amplifiers give zero tilt on low frequency square waves.

features

Flat from DC to 4.5mc for reproduction of 3.58mc sync burst and oscillator signals in color TV sets • V amplifier direct-coupled, and push-pull throughout; with gradual roll-off beyond 4.5mc and useful response at 10mc achieved in part by cathode-follower coupling between stages • High vertical sensitivity; 25 millivolts per inch • Choice of direct coupling (DC) or capacitive coupling (AC) • Balanced or unbalanced inputs • 4-step frequency-compensated attenuator in both AC and DC positions • Calibrator position injects accurately adjusted reference voltage into V amplifier to permit direct peak-to-peak voltage measurement • Automatic sync limiter and amplifier—anything visible on screen is synchronized automatically; eliminates sync voltage adjustment and prevents oversync • Pre-set TV V and H sweep positions (30cps and 7875cps) • Edge-lit lucite graph screen with dimmer control; filter; standard bezel fits standard photographic equipment • Important adjustments: all accessible without cabinet removal • No difficult or super-critical adjustments; all wiring points easily accessible. Excellent mechanical construction and layout so that it can be built at home without special equipment or special knowledge.

An oscilloscope engineering achievement unmatched anywhere in the industry! Surpasses in conveniences, features and performance wired scopes selling for 2 and 3 times the kit price. A professional 5mc bandwidth scope, featuring DC amplifiers, that's EICO-designed for laboratory precision and EICO-priced for lowest cost. The acknowledged leader in professional 5mc oscilloscopes!

specifications

Vertical Amplifier
Frequency response: flat from DC to 4.5mc, down approx. 10db at 10mc • Sensitivity: 25rms millivolts/inch • Rise time: 0.06 microseconds or less • Overshoot: 8% or less • Input coupling: Direct or capacitive • Attenuator (switch type): By factors of 1, 10, 100, and 1,000; frequency-compensated • Input Impedance: 3 megs shunted by 35mmf • Positioning: instantaneous, drift-free; permits centering any part of trace expanded to undistorted maximum.

Horizontal Amplifier
Frequency response: flat 1cps to 400kc • Sensitivity: 0.6rms volt/inch • Input Impedance: approximately 5 megs shunted by 35mmf (at 1kc) • Attenuator: low impedance type in cathode follower output • Positioning: 2X full screen to permit examination of any part of trace even with full horizontal gain • All on front panel: intensity modulation, saw-tooth output, 60cps test signal, external sync, external capacitor jacks • Sweep frequencies: 10cps to 100kc; plus low frequency sweep with external capacitor • Filter screen: edge-lit plexiglass, with variable illumination • Bezel: designed to fit standard photographic equipment • Deep-etched satin aluminum panel; grey wrinkle steel cabinet • Tube complement: SUP1CRT, 2-6AU8, 2-6CB6, 1-12AU7A, 2-6J6, 1-6AX5, 1-1V2 • Over-all size: 13" high x 8½" wide x 16" deep • Shipping weight: 29 lbs. approx. • Power requirements: 105-125VAC, 60 cps, 95W.

NOTE:

The #460 possesses a higher ratio of parts cost to final price than any comparable scope on the market today.
For example: Note the direct-coupled vertical amplifier which requires a considerably costlier power supply than conventional ac amplifiers. Note, too, that the DC stage and that the two stages of push-pull amplification are cathode follower tube distortion and minimized phase shift at both the low and high frequency graph screen with dimmer control; the professional convenience features of edge-lit lucite designed to fit standard photographic equipment.
There are many more such examples in the #460. They all add up to one important thing for you . . . from concept to final product, the #460 brings you the highest possible quality at the lowest possible price.

VOLTAGE CALIBRATOR #495

kit \$19.95 wired \$24.95



Multiplies oscilloscope usefulness—makes your scope a wide-range, accurate, peak-to-peak AC electronic voltmeter. Excellent for COLOR & MONOCHROME TV servicing. It generates virtually perfect square wave signals of known value to calibrate oscilloscope displays and to ascertain the value of unknown signals by the comparison method.

specifications

Output: Waveshape—semi-square (clipped sine wave); frequency—line; ranges—0-0.1, 0-1, 0-10, 0-100 volts peak-to-peak; dial reading accuracy—±5% of full scale on all ranges. Tube Complement: 1-0C3, 1-6AL5; selenium rectifier. Power Requirements: 105-125 volts AC, 60 cps; 5 watts. Overall Dimensions: 5" high, 7½" wide, 4" deep. Weight: 4 lbs. Lifetime deep-etched aluminum panel; rugged grey steel case.

Add 5% in the West. Slightly higher in Canada.



Only the EICO #1060 has all these important features:

1. Separate voltmeter and dual-range ammeter for more accurate current readings
2. Simultaneous monitoring of both voltage and current on both ranges
3. Exclusive automatic switching of appropriate ammeter range as you select either of the 2 voltage ranges
4. Built-in special filter circuit is safely rated to take the full continuous and intermittent rated current output on both voltage ranges — without danger of overloading or burn-out
5. Exclusive sloping front panel for wide-angle vision and easy-to-read meters
6. Exclusive all-around heavy-gauge steel case in gray crackle finish — for extra ruggedness and long life
7. Exclusive: optional wall-mounting feature in the durable well-ventilated steel case
8. Exclusive: the industry's lowest price

additional outstanding features

1. Two DC voltage ranges: 0-8 volts and 0-16 volts
2. Continuous voltage adjustment with variable-type transformer
3. Extra heavy-duty selenium rectifiers
4. Fused transformer primary
5. Transformer secondary also protected by means of automatic re-set overload relay
6. All parts are finest quality
7. For additional safety, all parts are operated well under their stated ratings for voltage and current

applications

Work bench voltage supply for operating 6-volt or 12-volt transistor, tube, or "hybrid" auto radios under repair... charging 6-volt or 12-volt storage batteries... operation or servicing of battery operated transmitters, amplifiers, marine, and aviation equipment... simulation of various battery operating voltages for detection of intermittents and shorts in radio equipment... DC substitution voltage... excellent DC supply for filament voltages in high gain audio circuit work... determination of starting point of vibrators... determination of voltage operating range of oscillator circuits... runs many small electric appliances such as shavers, trains, etc... for marine use, it operates boat lights, radio-phone, bilge pump and other electrical utility units, while at dockside; also, it completely eliminates the need for costly installation of 110 VAC secondary lighting system.

specifications

DC Output Voltage Ranges: (Range selected by 6V-12V toggle switch) 0-8 volts, 0-16 volts. AC Ripple: 12V range — 0.3% @ 2 amps, 1% @ 6 amps, 1.5% @ 10 amps. 6V range — 1.5% @ 2 amps, 2% @ 6 amps, 4.5% @ 10 amps. Current Ratings: 0-8 volt range: 10 amps continuous, 20 amps intermittent. 0-16 volt range: 6 amps continuous, 10 amps intermittent. Meters: Voltmeter—0-20 volts. Ammeter—0-10, 0-20 amps. Power Requirements: 105-125 volts AC, 60 cps; 150 watts. Size: 8¾" high, 10½" wide, 7¾" deep. Weight: 17 lbs.

specially designed for servicing
transistorized equipment
 as well as vacuum-tube equipment

LOW RIPPLE 6-volt and 12-volt BATTERY ELIMINATOR AND CHARGER #1060

kit \$39.95 wired \$49.95

The EICO #1060 is the most modern and versatile of battery eliminators. It incorporates an extra low-ripple filter circuit so that it can power both the newest all-transistor 6- and 12-volt equipment as well as the "hybrid" transistor-and-vacuum-tube or all-vacuum-tube equipment. In order to extend the many advantages of this highly filtered DC output to all applications of the #1060, its special filter circuit is comprised of a very heavy-duty iron choke and a dual 5000 mf-20v electrolytic filter capacitor — which are designed to take the full continuous as well as higher intermittent rated current output of the instrument.

More exclusive features, more versatility, more ruggedness — and yet, the lowest in price — these are the reasons why the EICO #1060 is without question the best value in modern professional battery eliminators.



MODEL 1020 POWER & BIAS SUPPLY FOR TRANSISTORIZED EQUIPMENT

kit \$23.95 wired \$29.95

"The output... is well filtered and therefore ideally suited for powering ripple-sensitive transistorized equipment." — PF REPORTER

"A fine investment" — POPULAR ELECTRONICS

Highly versatile, stable and reliable, the Model 1020 is a completely transistorized, very low ripple, portable DC power and bias supply providing continuously variable output voltage monitored by a dual range voltmeter (0-6, 0-30 VDC). It comprises a power transformer, full-wave silicon diode rectifier circuit, electrolytic capacitor input filter followed by a two-power transistor (2-2N256) cascaded filter circuit which provides extraordinary ripple rejection. The maximum permissible load current varies from 150 ma in the 0-12 V. range to 300 ma in the 24-30 V. range. The maximum ripple (120 cps) at full load is only 0.005%. The unit is housed in a rugged grey wrinkle steel case 5" x 4" x 5½" (HWD) and is fused for protection against short circuits.

Applications include: a universal power supply for operating transistor radios, hearing aids, preamplifiers, instruments, and other transistor devices under repair, development, or study; a variable bias supply to bias transistors or vacuum tubes in circuit development or study; in service work, to offset AVC and AGC voltages in the alignment of TV and radio receivers or to cut off the color burst amplifier in color TV adjustment; a dc filament supply or a filament bias source, to check the operating voltage or current of high resistance relays, to recharge small storage batteries, or to do light electro-plating.

Specifications

Output Voltage Range: 0-30 VDC, continuously variable.

Max. Output Current Capacity (Continuous): 150 ma from 0-12 V., 200 ma from 12-24 V., 300 ma from 24-30 V.

Fuse: ½ amp. will blow in case of short circuit to protect unit. Pilot lamp will remain lit even when fuse is blown but voltmeter will read zero.

Ripple: (120 cps): 0.005% at full load.

Power Requirements: 117V, 60 cps.

Size (HWD): 5" x 4" x 5½".

Weight: 5 lbs.

SERIES/PARALLEL R-C COMBINATION BOX #1140

kit \$14.95 wired \$19.95

U.S. Pat.

A combination of Models 1100 and 1120 (see page 23) with switching facilities permitting selection of any R alone, any C alone, or 1350 combinations of same in series or parallel. Open and short circuit positions provided. Standard E.I.A. values, 10% accuracy. Convenient jack-top binding posts. Size: (HWD) 6¾" x 5¼" x 2¾". Weight: 3 lbs.



Only
 EICO
 has it!



6V and 12V BATTERY ELIMINATOR & CHARGER #1050

kit \$29.95
 wired \$38.95

This modern battery eliminator fulfills all the needs for a dependable 6-volt and 12-volt DC supply source for servicing vacuum tube auto radios and all other battery-powered equipment where the AC ripple component is not an important consideration. It will do all that the #1060 above accomplishes, except that it is not recommended for transistor work.

features

- Two DC voltage ranges, 0-8 volts and 0-16 volts
- Continuous voltage adjustment with variable-type transformer
- Separate voltmeter and ammeter for simultaneous readings of both voltage and current
- Heavy duty selenium rectifiers
- Fused primary; automatic reset overload relay for secondary
- Rugged, well-ventilated steel cabinet; may be wall mounted

specifications

DC Output Voltage Ranges: (Range selected by 6V-12V toggle switch).....0-8 volts, 0-16 volts

Current Ratings: 0-8 volt range: 10 amps continuous, 20 amps intermittent. 0-16 volt range: 6 amps continuous, 12 amps intermittent

Meters: Voltmeter0-20 volts
 Ammeter0-20 amps

Power Requirements:105-125 volts AC, 60 cps; 150 watts

Size:8¾" high, 10½" wide, 7¾" deep

Weight:13 lbs.



BATTERY ELIMINATOR ACCESSORY FILTER #1055

kit \$11.95 wired \$15.95

This modern heavy-duty L-C filter provides additional filtering of the DC output of the EICO #1050 Battery Eliminator above, or similar low-voltage power supplies, when they are to be used for powering transistor or "hybrid" auto radios or similar electronic equipment requiring extremely low AC ripple. The #1055 works on both the 6V and 12V ranges of the battery eliminator and can remain in use for all functions of the battery eliminator. Weight: 7 lbs.



DYNAMIC CONDUCTANCE TUBE AND TRANSISTOR TESTER #666

kit \$69.95

wired \$109.95

Complete with rugged steel carrying case, matching steel cover and carrying handle for easy portability.

Speedy, simple operation, close simulation of actual tube operating conditions, unexcelled thoroughness, sensitivity and accuracy of test, excellent electrical and mechanical design—these are the superb advantages of the #666.

APPLICATIONS: Ideal for COLOR AND MONOCHROME TV servicing: Tests all receiving tubes including 4, 5, 6 and 7-pin, octal, loctal, miniature 7 and 9-pin, subminiature 5, 6, 7-pin (in-line base) and 8-pin (circular base) receiving tubes, many small transmitting and special-purpose tubes, voltage regulators, cold-cathode rectifiers, electron-ray indicators, ballast tubes, and BLACK-AND-WHITE TV picture tubes with accessory adaptor. Tests n-p-n and p-n-p transistors.

electrical characteristics

TRANSISTOR TEST: Dependable industry-approved two-step test on both n-p-n and p-n-p transistors, using internal dc power supply: (1) leakage measurement of collector current and (2) direct reading of current amplification factor or Beta.

DYNAMIC CONDUCTANCE TUBE TEST: Composite indication of mutual conductance (Gm), plate conductance (Gp) and peak emission capability. Test accuracy is assured by the following:

- Multi-circuit lever switch for speedy simultaneous selection of any one of 4 combinations of 3 plate, 3 screen and 3 ranges of control grid voltages.
- Grid voltage variable over each range with a 5% accurate wire-wound potentiometer.
- 5 ranges of meter sensitivity using 1% carbon-deposited shunts and 5% accurate wire-wound meter range potentiometer.
- 200 ua meter provides unusual sensitivity for checking tubes with low cathode current.
- Rectifiers tested near maximum rated current for extra accuracy.

Leakage Test: Direct-reading of inter-element leakage in ohms, with these features:

- Sensitive 200 ua meter permits accurate readings up to 20 megohms.
- DC leakage test voltage always applied in correct polarity to eliminate emission effects from readings.
- Accurate heater-cathode leakage achieved by isolation of heater and cathode from remaining tube elements during test.
- 10 push-button switches permit rapid insertion of alternate tube elements in leakage test circuit.



NEW TRANSISTOR & CIRCUIT TESTER #680

kit \$25.95 wired \$39.95

The Model 680 Transistor and Circuit Tester provides accurate measurement of basic transistor and diode characteristics required for quality testing, plus the VOM facilities normally required for testing and trouble-shooting transistor circuits. Transistor measurements include ICBO and ICEO, with separate test positions for signal and power transistors, DC Beta, and simulated AC Beta. Simple criteria for all measurements are included in the instruction manual and no charts are used or needed. The VOM facilities include five DC current ranges down to 50µA full scale, two DC volt ranges at 20,000 ohm/volt, and three resistance ranges. The tester is self-powered by five inexpensive standard batteries, and is housed in a sturdy bakelite case and brushed aluminum panel.

features

- 50µA, 3½" face D'Arsonval meter movement of 2% accuracy
- 1% meter multiplier and shunt resistors
- ICBO and ICEO are measured accurately on the microammeter, ranges with sensitivity to 50 microamps full scale
- ICBO and ICEO measurements can be made on all types of transistors. Separate test positions are provided for signal and power transistors
- DC Beta for signal transistors given directly by reading base current on a reciprocal scale (multiplied by appropriate range factor) to establish standard 1 ma collector current indexed on scale
- AC Beta for signal transistors determined by reading base current settings required to establish two standard collector currents 0.75 and 1.25 ma indexed on the scale (500µA shift), and dividing 500 by the base current difference in µA, or referral to a chart in the manual which gives the result without calculation
- DC Beta for power transistors can be approximated by calculating ratio of ICBO to IBE0
- Quality of selenium rectifiers, germanium and silicon diodes determined by measurement of forward and reverse currents
- DC volts ranges are 20,000 ohms per volt, minimizing loading of the circuits under test
- Convenient MODE switch sets up instrument for PNP transistors, NPN transistors, or VOM use
- β CAL/O ohm adjust (Beta calibrate or zero ohms) not only provides essential control functions for operation of the instrument, but also prolongs the useful life of the internal batteries.

specifications

DC Current: 50µA, 500µA, 5ma, 50ma, 500ma • **DC Voltage Ranges:** 5V, 50V Resistance Ranges: R x 1 (0 to 2KΩ, 12Ω center scale), R x 100 (0 to 200KΩ, 1200Ω center scale), R x 10K (0 to 20 Megohm, 120KΩ center scale) • **Transistor Measurements:** ICBO, ICEO for signal transistors; ICBO, ICEO for power transistors; DCβ, directly, in 2 ranges: 2 to 30, 20 to 300; ACβ, indirectly • **Accuracy:** 1% resistors and 2% meter for overall accuracy of 3% • **Connectors:** Three permanently connected clip-on test leads (C, B, E) or a panel socket for transistor connections; two banana jacks for VOM use • **Controls:** RANGE switch (ranges above), MODE switch (NPN, PNP, VOM), TEST switch (ICBO, ICEO, PWR ICBO, PWR ICEO, βCAL READβ), βCAL/OΩ adjust control • **Batteries:** 4 Size AA, 1 Size C Meter: 50µA movement, 3½" face (clear plastic case) • **Panel:** Brushed aluminum, two-color deep-etched nomenclature • **Case:** Highly polished black bakelite • **Size (HWD):** 6¼ x 5¼ x 3 inches • **Shipping Weight:** 3 lbs.

TUBE TESTER ADAPTOR #610 kit \$5.95 wired \$11.95



Adapts EICO Models 625 or 666 tube testers for testing the following new construction tube types: Nuvistor, 5 pin; Nuvistor, 7 pin; Novar; 10 pin miniature; Compactron, 12 pin.

The adaptor cable plugs into the 9-pin socket of the tube tester; a tenth connection is provided by a cap terminal on the adaptor for connecting a grid cap lead from the tube tester. Included with the #610 are roll-chart supplements for both the 625 and 666 tube testers covering tubes of the types listed above. The adaptor is housed in a rugged grey wrinkle steel case and a deep-etched brushed aluminum panel. **Size (HWD):** 1¼" x 2½" x 6".

Each active tube element can be individually connected to any of the following buses: plate voltage, screen voltage, grid voltage, filament voltage, ground (cathode and filament return), no connection.

Multi-section tubes have each section individually tested by rapid push-button selection—while all sections are simultaneously drawing full-rated current... Pentodes are tested as pentodes, with no "lumping together" of tube elements.

Filament switch provides selection from 20 filament voltages: adequate for all older tube types in use as well as for the new 600, 450 and 300 ma series string tubes. **Line voltage** may be read directly off the dial of the line-adjust rheostat on the panel with good accuracy.

Rollchart is extensive, up-to-date, and includes settings for all new series string type tubes.

Power: operates from 105-130 volts AC line, 60 cps. Provided with pilot lamp and fused for safety.

Exceptional control accuracy makes possible a very easy method for developing accurate test settings for new tube types before such data is published on a new roll chart (annually) or on a supplement.

Snap-in roll chart windows for easy entry of new test data.

specifications

Components specifically selected for ruggedness in day-after-day servicing. New gear-driven rollchart mechanism is easily assembled, provides smooth trouble-free operation. Snap-in windows permit settings for new tubes to be entered on rollchart without disassembly. The 10 individual element push-buttons are ganged on one easily-mounted assembly through which they are interlocked mechanically and inter-connected electrically to simplify mounting and wiring and assure safer operation. The 10 SIX-position lever switches plus the two lever switches for meter shunt, and plate, screen, and range of grid voltage selection, are all ganged together to form one quick-mounting assembly for not only very rapid settings but easier wiring for the kit constructor. The only internal adjustments in this tester are two calibrating rheostats for the line adjust and leakage measurement circuits. All the equipment required to calibrate the tester is one voltmeter of any type. The "Tube Merit" Switch, through which plate, screen, and grid voltages are applied to the tube under test, is of the spring-return type to eliminate the possibility of damage to the tube tester by continuous operation of a defective tube. Deep-etched, heavy gauge, brushed satin aluminum panel; 4½", 200 ua D'Arsonval meter movement, in clear lucite case; rugged grey wrinkle steel carrying case with matching steel cover and carrying handle for easy portability. **Size:** HWD: 12" x 15" x 4½". **Weight:** 20 lbs.



TUBE TESTER #625

kit \$34.95

wired \$49.95



- Simple test set-up procedure for checking emission, shorted elements, open elements, and continuity
- 10 individual lever-type element switches for complete flexibility and guarantee against obsolescence
- 4½" rugged, bakelite-cased meter with 3-color REPLACE-WEAK-GOOD scale, 0 to 100 scale for matching
- Tests new 600 mil series string type tubes
- Pilot light test socket (contact type)
- Brightly illuminated, gear driven, "SPEEDROLL" roll chart with special anti-backlash design
- Protective overload bulb shows transformer overloads and acts as fuse
- Line adjust control
- Two grid caps for extra convenience
- Spare blank socket for future tube types
- Roll charts kept up-to-date periodically by EICO's Engineering Department

specifications

Type of Tube Tester: Cathode Conductance (Emission) • **Tube Condition Indicator:** 4½" meter with both English and numerical scales • **Tube types that may be tested:** 4, 5, 6, large and small 7, octal, loctal, noval, hytron, VR, magic eye, and pilot lamps (also blank spare socket for future types) • **Individual element tests:** short and continuity (neon lamp indicator) open (meter indicator) • **Method of line voltage adjustment:** power rheostat in transformer primary with meter as indicator • **Rectifier for line voltage adjustment:** 6H6 tube for stability and easy replacement • **Overload indicator and fuse:** panel lamp in primary of transformer • **Filament voltages available:** 0, .75, 1.4, 2.0, 2.5, 3.3, 5.0, 6.3, 7.5, 12.6, 25, 32, 50, 70, 110 • **Individual tube settings:** read from built-in illuminated gear driven "SPEEDROLL" roll chart with special anti-backlash design • **Power Requirements:** 105-125 volts AC, 60 cps, 6 watts • **Overall Dimensions:** 9½" high, 12½" wide, 4¼" deep • **Weight:** 11 lbs.

also available

#625CK Tube Tester Kit with Counter Display Case \$44.95
#625C, as above, factory wired \$59.95
Lid for your EICO Tube Tester \$3.98

TV PICTURE TUBE TEST ADAPTERS



#CRA: Wired \$4.50

Checks all sizes of TV picture tubes as fast and easily as ordinary tubes. Use with #625, #666 and similar tube testers.

#CRA-110: Wired \$3.95

For 110° deflection TV picture tubes. Use with #625, #666 and similar tube testers.

Add 5% in the West. Slightly higher in Canada.



Only Eico Probes Have All These Features*

*pat. app. for

- fully shielded • rugged terminal board mounting of all parts • shock-mounted floating construction
- swivel action for ease of handling • color-coded for identification • easy accessibility of all parts

SCOPE ACCESSORY PROBES

oscilloscope demodulator probe #psd
kit \$3.95 wired \$5.95

For signal tracing and checking of TV/radio RF and IF stages. Permits your scope to be used as a waveform tracer, gain analyzer and alignment indicator in all these stages. Demodulates amplitude-modulated carriers between 150 kc and 250 mc. Audio response practically flat from 20 cps to 6 kc, includes both high and low-frequency components of demodulated 60-cycle square wave—making this probe particularly good for observation of sweep curve response.

oscilloscope direct probe #pd
kit \$2.95 wired \$3.95

Direct test probe for use in low-frequency or low-impedance circuits where direct connection to the test point is required so as to utilize maximum scope sensitivity—and where the added input capacity contributed by the coaxial cable is not important. Eliminates stray pick-up and signal re-radiation.

oscilloscope low capacity probe #plc
kit \$3.95 wired \$5.95

Specially designed for TV sync signal tracing and general tests in video, sync and sweep circuits. High impedance—low capacity probe is extremely useful for tracing waveforms in high impedance, high frequency and wide-band circuits (such as found in TV) without distortion from overloading or frequency discrimination. A built-in but externally accessible variable ceramic capacitor provides adjustable frequency compensation.

VTVM ACCESSORY PROBES

peak-to-peak vtvm probes

#ptp-11 or ptp-25
kit \$4.95 wired \$6.95

For accurate reading of peak-to-peak voltages directly on the DC scales of your Vacuum Tube Voltmeter. Excellent for tracing complex AC waveforms through TV receiver deflection systems. Operate efficiently over the entire frequency range of 5 kc to 5 mc to cover all TV servicing requirements. Use with any 11 or 25 megohm VTVM.

rf vtvm probes model prf-11 or prf-25
kit \$3.95 wired \$4.95

For radio-frequency voltage measurements up to 250 mc. Very useful for measurements in all TV and radio RF and IF stages. Accuracy $\pm 10\%$. Use with any 11 or 25 megohm VTVM.

high voltage probe #hvp-2 wired \$4.95

For safe measurement up to 30,000 volts dc with any VTVM or 20,000 ohms/volt VOM. Ideal for TV high voltage measurement. Light-weight, low-cost. Includes a choice of high quality multiplier resistor to match most popular instruments.

high voltage probe #hvp-1 wired \$6.95



EXCLUSIVE†UNI-PROBE®
kit \$4.95 wired \$6.95

It performs all functions—a half-turn of probe—tip selects DC or AC-OHMS! It adapts to your EICO #221 VTVM and other VTVMs in just 15 MINUTES. Complete instructions supplied.

† U. S. PAT.

CATHODE RAY TUBE CHECKER #630



kit \$19.95 wired \$27.95

Engineered for fast, easy, dependable testing of all sizes TV picture & oscilloscope type CR tubes, right in the set or carton. Bridge measurement of peak beam current (proportional to screen brightness) using neon lamp as sensitive balance indicator. Balancing control calibrated directly in terms of tube condition. Overall size: $9\frac{1}{2}$ " high, $6\frac{1}{2}$ " wide, 3" deep. Weight: 5 lbs. Power Requirements: 117V, 60cps.

FAST TUBE & CRT FILAMENT TESTER #612



kit \$4.95 wired \$6.95
including batteries

Permits FAST filament checking of TV and radio tubes in an inoperative series string. Merely remove each tube from set, plug into appropriate tester socket while observing indicator lamp; then re-insert into set if O.K. No fiddling with controls or switches. Sockets are provided for 9-pin, octal, loctal, 7-pin

portable and line-operated receiver tubes. 7-pin and 9-pin miniature tube pin straighteners also provided. Adapter plug permits filament checking of 14-pin, 12-pin and 8-pin (110°) picture tubes. Also checks bayonet and screw-type base pilot lamps, and cartridge fuses. Self-powered by internal batteries for convenience and safety. Deep-etched brushed aluminum panel; hi-impact molded bakelite case. Compact: $6\frac{1}{4}$ " H x $3\frac{3}{4}$ " W x 2" D. Weight 2 lbs.



READI-TESTER

#540
kit \$12.95
wired \$15.95

Designed expressly for "do-it-yourself" home appliance & auto repair—easily finds defects in irons, fans, heaters, TV & radio tubes, batteries, ignition coils, etc. It is an all-in-one MULTI-RANGE AC/DC voltmeter, ammeter, ohmmeter, wattmeter, leakage checker. Extremely versatile, dependable, low in cost.

features

All voltage ranges (0-7.5, 15, 150, 300 volts) and current range (0-15 amps) are ac/dc.

Direct-reading ohms range 0-1000 ohms.

Neon lamp ac leakage test circuit permits continuity check of resistors between 1000 and 2,000,000 ohms and capacitors above .0005 mfd; also filament continuity and leakage between elements in radio and TV tubes.

Direct reading of power line voltage up to 300 volts ac/dc at any outlet with attached line cord (2 ranges: 150 and 300 volts).

Panel outlet permits metering current up to 15 amps drawn by any appliance, motor or other device. Switch permits checking effect on line voltage. Kilowatts scale permits direct reading of power consumption.

Provides "GOOD-BAD" readings on 6V and 12V automobile storage batteries, and permits checking of individual cells.

Deep-etched brushed aluminum panel.

$3\frac{1}{2}$ " meter in modern clear lucite case.

Handy size ($3\frac{3}{4}$ " x $6\frac{1}{2}$ " x $3\frac{1}{2}$ "), rugged, high impact, polished black bakelite case. Weight: 3 lbs.



BATTERY TESTER #584

kit \$9.95
wired \$12.95

For fast running check of battery stock, testing of batteries commonly in portable vacuum tube & transistor radios, hearing aids, flash-lights, photo-flash equipment, etc. Versatile, dependable, at a typical low EICO price.

features

• Accurately tests all A and B portable radio batteries in or out of the receiver

• Also tests lantern batteries, and may be adapted to other types

• Provides true dynamic tests as follows: Rotary switch selection of the exact voltage of the battery under test inserts the proper resistor in series and in shunt with the meter. Therefore the battery's internal resistance reduces its terminal voltage exactly as occurs under actual operating conditions.

specifications

Test Positions (Volts): 1.5, 4.5, 6.0, 7.5, 9.0, 22.5, 45, 67.5, 75, 90, plus Spare Position.

Size: $6\frac{1}{4}$ " high x $3\frac{3}{4}$ " wide x 2" deep.

Weight: 2 lbs. Test leads provided.

Case: high-impact Bakelite.

Panel: Satin finish deep-etched aluminum panel and gray wrinkle steel case.



EIA RESISTANCE SUBSTITUTION BOX #1100

kit \$7.95 wired \$12.95

A handy, versatile, time-saving instrument having a wide variety of applications. Helps to ascertain the value of an unmarked or illegible resistor. You can change resistor values in a circuit during actual operation for optimum performance. In service or development work, the use of several #1100's provides the flexibility needed to change circuit values quickly.

Enables rapid substitution of wide range of EIA resistance values from 15 ohms to 10 megohms in decade multiples of 15, 22, 33, 47, 68, 100 ohms. Uses standard 1 watt, $\pm 10\%$ EIA resistors. Convenient 5-way, jack-top binding posts. Size $3\frac{3}{4}$ " high x $6\frac{1}{2}$ " wide x $3\frac{1}{2}$ " deep. Weight: 2 lbs.

• Handsome satin aluminum front panel



EIA CAPACITANCE SUBSTITUTION BOX #1120

kit \$6.95 wired \$10.95

The EICO #1120 is an excellent and logical companion to the #1100, and it affords the same multiplicity of servicing, development and time-saving advantages for capacitors as the #1100 does for resistors. Here, too, the price of the #1120 kit is less than the retail value of the capacitors alone!

Enables rapid substitution of a wide range of EIA capacitance values from 0.0001 to 0.22 mfd in an operating circuit to determine value needed for optimum performance and to find value of badly damaged or illegible capacitors. Minimum accuracy $\pm 10\%$. Uses silver-mica and molded plastic (or impregnated and sealed in plastic) capacitors, most conservatively rated at 600 volts. Convenient 5-way jack-top binding posts. Size: $3\frac{3}{4}$ " high x $6\frac{1}{2}$ " wide x $3\frac{1}{2}$ " deep. Weight: 2 lbs.

• Smart professional styling—satin finish aluminum panel



DECADE CONDENSER BOX #1180

kit \$17.95
wired \$24.95

applications

General design and development work... useful in every laboratory as tuned circuit elements, bridge impedances, filter elements or components of any circuit where a wide-range variable capacitor is necessary... useful for rapid experimental determination of proper capacitance values required in a circuit.

specifications

Range: 100 MMF to .111 MF in increments of 100 MMF

Voltage Ratings: 350 VDC continuous, 500 VDC intermittent, 1000 VDC test

Dielectric: silvered mica

Accuracy of Incremental Capacity: $\pm 1\%$ (accuracy of capacitors used)

Zero Capacitance: approximately 7 MMF with all switches set at zero

Insulation Resistance of Capacitors Used: none under 50,000 megohms, most well over 250,000 megohms

Power Factor of Capacitors Used: better than .001

Switches: positive detent, ceramic wafer

Terminal Board: low loss lucite

Binding Posts: 5-way jack-type

Overall Dimensions: 9" long, $3\frac{1}{2}$ " wide, $3\frac{1}{2}$ " deep

Weight: 3 lbs.

Smart professional styling—satin finish deep-etched aluminum panel, grey wrinkle steel case



DECADE RESISTANCE BOX #1171

kit \$24.95
wired \$29.95

applications

General design and development work... known resistance in bridge circuits... ohmmeter calibration... determining exact values required for meter or instrument multiplier resistors... determination by actual substitution of resistance values required in electronic circuits... determine value of badly burned or otherwise illegible resistors by substitution.

features

• Extremely wide range of 0-99,999 ohms in 1-ohm steps with 5 decades

• $\frac{1}{2}\%$ accuracy at any setting

• Comparator Position permits instant substitution of actual equivalent component of the resistance value indicated on the box

• Rugged, trouble-free construction

• Smart professional styling—satin finish deep-etched aluminum panel, grey wrinkle steel case

specifications

Resistors used: $\frac{1}{2}\%$ accuracy, 1 watt rated power dissipation

Overall Dimensions: 12" long, $3\frac{1}{2}$ " wide, 3" deep

Weight: 3 lbs.

Heavy-gauge, quality steel cabinet

Quality switches

rf signal GENERATOR #320



kit \$24.95
wired \$33.95

Designed primarily for general service requirements where an easily controllable source of modulated or unmodulated variable frequency is needed. Precision-wound and calibrated RF oscillator coils assure maximum accuracy and simplified calibration. Since the coils, band switch and tuning condenser mount as a turret assembly, short wiring leads and easy mounting of parts are the advantageous results. Continuously variable attenuators for both RF and audio are on the front panel.

The #320 has long been popular with beginners and professionals alike—thousands are in use. The reason is simple: The #320 delivers the most professional generator performance at the industry's lowest price!

applications

Radio servicing... AM and FM IF stage alignment... checking RF stages... marker generator for TV alignment... 400 cps sine wave audio testing... laboratory and experimental work.

features

- Fundamental frequency range of 150 kc to 34 mc plus powerful calibrated harmonics to 102 mc
- RF output attenuator
- 6 to 1 vernier dial ratio for more accurate, easier settings
- Turret-mounted coil sub-assembly
- Precision wound coils
- Hartley RF oscillator circuit
- Colpitts oscillator 400 cps sine wave output
- Modulated or unmodulated RF output
- Power supply with full-wave rectification for greater stability

specifications

Frequency Range:

Fundamentals—Band A: 150 kc to 450 kc
Band B: 450 kc to 1250 kc
Band C: 1.25 mc to 4 mc
Band D: 4 mc to 12 mc
Band E: 11 mc to 34 mc

Calibrated Harmonics—Band F: 22 mc to 68 mc
Band G: 33 mc to 102 mc

RF Output: Over 100,000 microvolts

Audio Modulation Frequency: Approximately 400 cps

Audio Output: 1½ to 2 volts

Tube Complement: 1-6SN7, 1-6X5

Power Requirements: 105-125 VAC, 60 cps

Overall Dimensions: 8" high, 10" wide, 4¾" deep

Weight: 8 lbs.

Lifetime deep-etched aluminum panel; rugged grey steel case.

deluxe rf signal GENERATOR #315



kit \$49.95
wired \$69.95

applications

Deluxe in every professional feature and detail, yet rock-bottom in cost—one more EICO champion instrument value!

Radio servicing... laboratory precision AM and FM IF stage alignment... checking RF stages... highly accurate marker generator for TV alignment... 400 cps sine wave audio testing... excellent calibration accuracy for laboratory and experimental work.

features

- Accuracy of frequency dial reading better than 1% on all 7 ranges
- Bandsread vernier tuning for precise adjustment of frequency
- Illuminated dial and gear-driven, anti-backlash, hair-line pointer protected by glass
- VR tube regulated power supply for unfailing accuracy and stability
- Fully shielded copper-plated chassis, attenuation controls and line filter for extremely low leakage output
- Internal 400 cps sine wave audio generator with attenuator for RF modulation and external audio testing

specifications

Frequency Range: Fundamentals 75 kc to 50 mc in 5 ranges. Calibrated Harmonics 13 mc to 150 mc in 2 ranges.

RF Output: over 100,000 microvolts.

Audio Modulation Frequency: 400 cps

Provision for external modulation

Tube Complement: 1-6C4, 1-6X5, 1-7F7, 1-VR150.

Power Supply: 105-125 VAC, 60 cps

Overall Size: 13" high, 12" wide, 7" deep.

Weight: 18 lbs.

Lifetime deep-etched aluminum panel; rugged grey steel case.

tv-fm sweep GENERATOR #360



kit \$39.95
wired \$59.95

applications

Complete, accurate alignment of VHF-UHF TV and FM receivers... video IF alignment and response curve adjustment... sound IF and sound detector alignment.

features

Every advanced feature you need for quick, easy, and correct professional alignment of TV and FM receivers... all at lowest cost in the industry—only from EICO!

- Complete coverage of all VHF TV and FM channels on fundamentals... as well as all IF frequencies.
- 30 mc maximum sweep width obtained with mechanical inductive sweep.
- Continuous sweep width control from 0-30 mc.
- Continuously variable shielded output attenuator.
- 6 to 1 vernier dial ratio.
- Crystal marker oscillator with variable amplitude control.
- Precision 5 mc and 4.5 mc crystals available, each \$3.95 (see below).
- Variable phase, 60 cps output available at panel jack to allow single trace adjustment.
- Provision for connection of external marker generator.

specifications

Frequency Range: 500 kc to 228 mc

Sweep Width Range: 0 to 30 mc

Crystal Marker Oscillator: marker frequencies depend upon fundamental frequency of crystal used; 5.0 and 4.5 mc crystals available

Tube Complement: 1-2C22/7193, 1-6C4, 2-6J5, 1-6X5

Power Requirements: 105-125 VAC, 60 cps

Overall Dimensions: 8" high, 10" wide, 6¾" deep

Weight: 11 lbs.

Lifetime deep-etched aluminum panel; rugged grey steel case.

rf signal GENERATOR #322

kit \$27.95 wired \$38.95

In addition to all the outstanding laboratory precision qualities of the famous EICO Model 320 (see above), this improved RF-AF signal generator features the individual calibration of each of its 5 bands.



5MC CRYSTAL #C-5
4.5MC CRYSTAL #C-4.5 (not kits)
ea. only \$3.95

Highest quality precision crystals; fit standard socket on all instruments requiring their use, including the EICO #360 TV-FM Sweep Generator.



#352 BAR GENERATOR
kit \$19.95
wired \$29.95

specifications

Operates on TV channels 2-6. 16-23 vertical bars to check horizontal linearity, 13-22 horizontal bars to check vertical linearity. Panel switch provides "stand-by" position, "Vertical Bars" or "Horizontal Bars." Output Voltage: 400,000 microvolts. Tube Complement: 1-12AU7, 1-6C4; selenium rectifier. Power Supply: Transformer operated—half-wave selenium rectifier circuit; 115 VAC, 60 cps. Weight: 4 lbs. Overall Size: 7½" wide, 5" high, 4½" deep. Smart professional styling—satin finish deep-etched aluminum panel, grey wrinkle steel case.

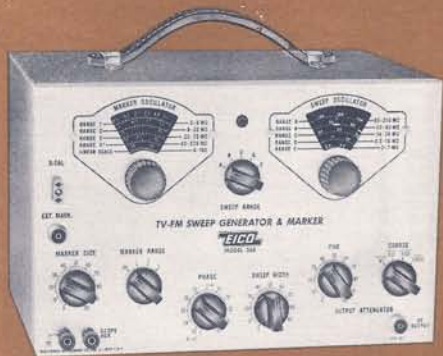
applications

Easily portable, light-weight, simple to operate—a really handy time-saver that is practically a necessity to servicemen now that station-transmitted test patterns are harder to find.

features

Produces a series of vertical or horizontal bars on the TV screen when connected to the antenna terminals of any TV set. Since these bars will be equally spaced on a correctly adjusted set, a quick indication is obtained of the picture linearity in the set under test. Also gives indication of overall picture size and vertical and horizontal sync circuit stability.

tv-fm sweep
GENERATOR & MARKER
#368



kit \$69.95
wired \$119.95

for color and monochrome tv servicing

To our knowledge the #368 is the finest and most highly perfected instrument of its type presently available in either kit or factory-wired form at ANY price! Not only does it embody new features never before offered in this price range, but it also provides more ranges and better performance than any competitive unit.

applications

Outstanding ease and accuracy in complete alignment of all FM and TV Monochrome and Color receivers.

features

- Entirely ELECTRONIC sweep circuit; no moving parts, hum, or mechanical vibration.
- Accurately biased sweep circuit inductor assures excellent linearity on both sides of center frequency.
- Extremely flat RF output provided by newly-designed AGC circuit which automatically adjusts oscillator for maximum output on each band with minimum amplitude variations. Resonance-free RF choke eliminates "suck-out" points.
- Double pi isolation filter.
- Exceptional tuning accuracy: edge-lit hairlines eliminate parallax.
- Extremely high RF output permits "cold" alignment of all circuits.
- Advanced wiring techniques and heavy filtering eliminate hum and leakage.

specifications

- 5 Fundamental Sweep Ranges: 3-216 mc.
- 3 Fundamental Plus 1 Harmonic Marker Ranges: 2-225 mc.
- Crystal Marker: 4.5 mc crystal included. Panel mount permits use of other crystals.
- External Marker: mixable with crystal and variable markers for up to 3 marker pips on 1 trace; external connection for separate uses.
- Attenuators: continuously variable separate marker size control; 4-step decade "coarse" and "fine" for both sweep and marker output together.
- Complete 2-Way Blanking eliminates return trace. Narrow range PHASING CONTROL for accurate alignment.
- Sweep Width: 0-3 mc lowest max. deviation to 0-15 mc highest max. deviation.
- Output Impedance: 50 ohms, terminated at both ends of output cable.
- Cables: output cable, scope horizontal cable & compensated scope vertical cable.
- Tube Complement: One each 12AV7, 12AT7, 12AX7, 6AU6, 12B4, 6X4; plus selenium rectifier for bias voltage; transformer-operated.
- Power Requirements: 105-125 VAC, 60 cps; 50 watts.
- Size: 8 3/4" high x 13 1/2" wide x 7 1/4" deep. Wt. 16 lbs.
- Handsome lifetime deep-etched satin aluminum front panel; rugged grey wrinkle steel case.

rf signal
GENERATOR #324



kit \$28.95
wired \$39.95

one generator covers
the whole range of
150 kc to 435 mc

The latest generator achievement created by EICO's service-minded engineers—hailed as the best generator buy in the world. More features, more versatility, more range, more accuracy—from input to output, more instrument—than many generators at 3 to 4 times its cost.

applications

IF-RF alignment, signal tracing and trouble-shooting of TV, FM and AM sets, all on fundamentals; marker generator for alignment of new high-frequency as well as older low-frequency TV IF's; 400 cps sine wave audio testing; laboratory and experimental work.

features

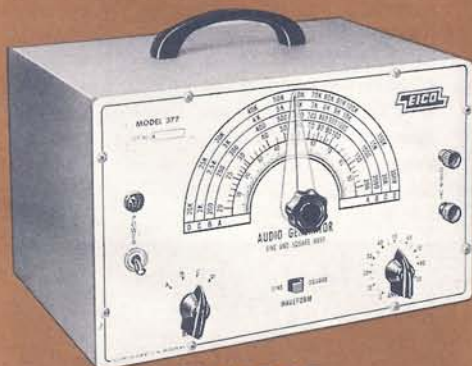
- One generator covers the whole range of 150 kc to 435 mc.
- ±1.5% frequency accuracy
- 6:1 vernier tuning knob and excellent spread at most important alignment frequencies
- Etched tuning dial, plexiglass windows, edge-lit hairlines—for utmost accuracy, convenience and professional appearance

- Colpitts RF oscillator directly plate-modulated by cathode follower for improved modulation
- Variable depth of internal modulation 0 to 50% by 400 cps Colpitts oscillator
- Variable gain external modulation amplifier—only 3.0 volts needed for 30% modulation
- Turret-mounted, slug-tuned coils for maximum accuracy
- Fine and Coarse (3-step) RF attenuators; 50-ohm output impedance

specifications

- 6 fundamental bands: 150-400 kc, 400-1200 kc, 1.2-3.5 mc, 3.5-11 mc, 11-37 mc, 37-145 mc; one harmonic band, 111 mc-435 mc
- RF output 100,000 microvolts; AF output to 10 volts
- Tube complement: 12AU7, 12AV7, selenium rectifier; transformer-operated
- 5-way jack-top binding posts for AF in/out; coaxial connector and shielded cable for RF out
- Handsome satin aluminum front panel and grey wrinkle steel case
- Power requirements: 105-125 VAC, 60 cps
- Over-all size: 8" high, 10" wide, 4 3/4" deep. Weight 8 lbs.

sine & square wave
AUDIO GENERATOR
#377



kit \$37.95
wired \$54.95

The EICO #377 is expressly designed to fill the test instrument needs of the audio engineer, high-fidelity enthusiast and the radio-TV Serviceman. Its many modern features and its advanced circuitry and design make it particularly suitable for electro-acoustic experimentation, development work, as well as for TV service and wide-band amplifier work.

The #377 is another EICO exclusive instrument achievement. It is the equal in quality of separate professional sine and square wave generators each costing more than the #377 alone!

applications

Audio amplifier testing and design... determining radio receiver fidelity and loudspeakers response... square wave testing of TV receivers... development of filter or compensating circuits... frequency measurement in conjunction with an oscilloscope.

features

- High design standards met by costlier components and circuitry
- Resistance-capacitance (Wien Bridge) oscillator circuit with 1% precision resistors.
- Excellent calibration accuracy, stability, and purity of waveform
- Choke filtering in power supply for minimum hum level
- High power output over wide range of loads
- Constant output over wide frequency range

specifications

- Frequency Range: Sine wave, 20-200,000 cps in 4 bands. Square wave, 60-50,000 cps. (5% tilt at 60 cps, 5% rounding at 50,000 cps).
- Calibration Accuracy: ±3% or 1 cps, whichever is greater
- Frequency Response: ±1.5 db, 60-150,000 cps
- Output Voltage: 10V across 1000 ohms rated load (100 milliwatts); drops to 8V across 500 ohms, rises to 14V across 10,000 ohms or higher
- Distortion: Less than 1%
- Hum: Less than 0.4% of rated output
- Tube Complement: 2-6K6, 1-6SN7, 1-6SJ7, 1-6X5, and 1-3S6 3-watt lamp
- Power Requirements: 105-125 VAC, 60 cps, 50 W.
- Size: 7 1/8" high, 11 1/8" wide, 7 5/8" deep.
- Weight: 13 lbs.
- Smart professional styling—satin finish deep-etched aluminum panel, grey wrinkle steel case.

Add 5% in the West. Slightly higher in Canada.

20,000 ohms/volt

V-O-M #565

kit \$24.95

wired \$29.95



The famous performance-proven EICO Multimeter design with world-wide recognition for excellence in both laboratory and field work. Engineered for maximum versatility, it is a valuable professional instrument for the accurate servicing of radio, TV and electronic apparatus. Being completely battery-operated, it is ideal for portable applications, field work and remote locations. It measures AC and DC voltage, DC current, resistance and decibels. The circuitry, ranges and physical layout have been carefully "serviceman-designed" for new convenience, ease and speed of operation. Note, too, how the advanced simplified "open" construction effects a far greater accessibility of all components for easier maintenance and replaceability. The beautiful, gleaming high-impact black bakelite case is a dust-free seal for the meter and a new high in styling that is both handsome and functional.

applications

Accurate TV, FM and AM radio servicing... high current range for complete appliance testing... wide-range DC voltage measurement at 20,000 ohms/volt sensitivity... wide-range AC and output voltage, decibel, and resistance measurement... testing commercial and amateur transmitters (since its accuracy is unaffected by RF fields)... checking automobile electrical wiring, generators, starters, batteries... movie, marine, aircraft and air conditioning equipment... any application where measurement of voltage, current or electrical continuity is needed.

features

- 31 RANGES for maximum versatility
• DC Sensitivity of 20,000 ohms/volt—minimizes circuit loading
• Large 4 1/2", 50 ua meter movement; 2-color scale—easy-to-read
• Beautiful, gleaming case, molded of high-impact black bakelite
• Factory-adjusted, wire-wound potentiometers compensate for individual rectifier characteristics to assure accurate measurement
• Output voltage ranges for measuring signal voltages in circuits where DC is present

specifications

DC Voltage: Ranges 0-2.5, 10, 50, 250, 1000, 5000 volts
Sensitivity: 20,000 ohms/volt
AC/Output Voltage: Ranges.....0-2.5, 10, 50, 250, 1000, 5000 volts
Sensitivity: 1000 ohms/volt
DC Current: 0-100 ua, 10 ma, 100 ma, 500 ma, 10 amp
Decibels: -12 to +55 db in 5 ranges
Resistance: Ranges: 0-2000 ohms, 0.2 megohms, 20 megohms (.2 ohms to 20 megohms)
Meter: 4 1/2" size, 50 ua movement
Size: 6 3/4" high, 5 1/4" wide, 3" deep. Wt.: 3 lbs.

1,000 ohms/volt

V-O-M #536

kit \$14.95

wired \$18.95



FOR THE FIRST TIME, a 1000 ohms/volt Multimeter so brimful of extra-extended ranges and special features that it's the "tops" of its type.

Only EICO gives you 7 full-scale AC/DC ranges to 5000 volts. The #536 is the only 1,000 ohms/volt Multimeter with a full scale zero-to-one-volt range! This makes possible accurate low-volt readings. For example, a half-volt on a 10-volt scale of an instrument whose lowest scale is 10V deflects the meter needle only 1/20th of the scale, where readings are inaccurate; but a half-volt on the 0-1 volt scale becomes mid-scale deflection with resultant high precision in reading.

Additional outstanding advantages include: compact, portable construction—in beautiful, rugged high impact bakelite—makes it easy to carry around in coat pocket, tool box or auto glove compartment; advanced new AC rectifier circuit employs a high-quality rectifier in a dual half-wave hook-up, which provides excellent linear characteristics. Indeed, every modern feature required in an instrument of this kind has been built into the #536. But—YOU compare it with so-called "look-alikes". You'll see why we say EICO gives you the best—and for less!

applications

Wide-range AC voltage and current, DC voltage and current, decibel and resistance measurements... servicing of portable, ac-dc, transformer-operated, or car radios... appliance servicing... continuity checking... electrical repairs in the home or car.

features

- 31 RANGES for maximum versatility
• 1000 ohms/volt sensitivity on both AC and DC
• Large 3" 400 ua meter with easily-read, 2-color scales
• New, high quality instrument rectifier in dual half-wave hook-up
• Both shunt and series rectifier compensation for uniform accuracy
• One set of precision divider resistors on both AC and DC minimizes switching
• Beautiful, gleaming, black case molded out of high-impact bakelite

specifications

AC/DC Voltage Ranges: 0-1, 5, 10, 50, 100, 500, 5000 volts
AC/DC Sensitivity:1000 ohms/volt
AC/DC Current Ranges: 0-1 ma, 10 ma, 0.1 amp, 1 amp
Ohms Ranges:0-5000 ohms, 100K ohms, 1 megohm
DB Ranges:-20 to +69 in 6 ranges
Meter:3" size, 400 ua movement
Size: 6 1/2" high, 3 3/4" wide, 2 3/4" deep Wt.: 2 lbs.

1,000 ohms/volt

V-O-M #566

kit \$16.95

wired \$22.95



The EICO #566 Volt-Ohm-Milliammeter is essentially a larger version of the #536. It possesses all the latter's excellent circuitry and application advantages plus 7 extra ranges (output) and plus the extra convenience and legibility of its large 4 1/2" meter with 2-color scales. Note, too, that in the #566 EICO offers you the important full-scale zero-to-one-volt range for high-accuracy readings of low volts. You need only examine the #566 side by side with any comparable instrument to agree that it is one more EICO "best buy" in professional service instruments.

applications

Wide-range AC voltage and current, DC voltage and current, decibel and resistance measurements... servicing of portable, ac-dc, transformer-operated or car radios... appliance servicing... continuity checking... electrical repairs in the home or car.

features

- 38 RANGES for maximum versatility
• 1000 ohms/volt sensitivity on both AC and DC
• Large 4 1/2" 400 ua meter with easily-read, 2-color scales
• New high quality instrument rectifier in dual half-wave hook-up
• Both shunt and series rectifier compensation for uniform accuracy
• One set of precision divider resistors on both AC and DC minimizes switching
• Beautiful, gleaming black case molded out of high-impact bakelite

specifications

AC/DC/Output Ranges: 0-1, 5, 10, 50, 100, 500, 5000 volts
AC/DC Sensitivity: 1000 ohms/volt
AC/DC Current Ranges: 0-1 ma, 10 ma, 0.1 amp, 1 amp
Ohms Ranges:0-5000 ohms, 100K ohms, 1 megohm
DB Ranges:-20 to +69 in 6 ranges
Meter:4 1/2" size, 400 ua movement
Size: 6 3/4" high x 5 1/4" wide x 3" deep Wt.: 3 lbs.

20,000 ohms/volt

V-O-M #555

kit \$29.95

wired \$34.95

Same as #565 above, but with 1% precision resistors

1,000 ohms/volt

V-O-M #526

kit \$15.95

wired \$19.95

Same as #536 above, but with 1% precision resistors

1,000 ohms/volt

V-O-M #566

kit \$18.95

wired \$25.95

Same as #566 above, but with 1% precision resistors

deluxe
MULTI-SIGNAL TRACER
#147A
kit \$29.95 wired \$44.95



A professional deluxe instrument crammed with unsurpassed facilities and conveniences for extra-easy, extra-fast profitable servicing of AM, FM and TV receivers. Here's one of the most useful and convenient instruments the serviceman can use in the servicing of TV, FM, AM, audio and electronic equipment. The #147 is a deluxe signal tracer brought up-to-date by EICO engineers in the light of servicemen's latest needs for this type of all-purpose instrument. Two separate input channels assure maximum adaptability for both RF and audio work; and RF gain is so high you can trace right up to the antenna terminals of the set under test. Now you can both see and hear the signal level in each stage—the eye tube and speaker give you both aural and visual monitoring. The valuable noise locator and calibrated wattmeter turn suppositions into certain answers—and fast! The #147 has everything you could ask for in a modern, up-to-date professional signal tracer, and then some more features no other tracer gives you. It's one more champion precision instrument, at lowest cost... from EICO.

applications

For signal tracing and trouble-shooting in RF, IF and audio stages in AM, FM and TV sets... locating noisy components... checking equipment power consumption.

features

Two input channels: high-gain RF and low-gain audio. RF channel gain more than adequate for tracing up to receiver input • Both visual and aural signal monitors (eye tube and speaker). Visual monitor permits estimation of signal strength and gain-per-stage • Shielded RF crystal demodulator and direct probes. Individual panel receptacles provide easy change-over from RF to audio tracing or vice versa • Valuable noise locator applies DC test voltage to suspected component and amplifies effect—ferrets out noisy controls, resistors, capacitors, coils, transformers, cold solder joints, etc. • Calibrated wattmeter reveals abnormal power consumption in set under test—valuable preliminary check. Detects B+ short, intermittent filament circuit, defective filter or bypass capacitors, etc. Fused for safety • May be connected as substitute speaker, amplifier, or output transformer • Output for VTVM or oscilloscope • Transformer-operated for isolation and safety.

specifications

Tube complement: 1-12AX7 as dual amplifier; 1-6AQ5 as beam power amplifier; 1-1629 electron-ray indicator; 1-6X4 as full-wave rectifier. **Power requirements:** 105-125 volts AC, 60 cps, 40 watts. **Cabinet:** Satin finish deep-etched aluminum panel and grey wrinkle steel case. **Size (HWD):** 8" x 10" x 4 3/4". **Shipping Weight:** 10 lbs.

LOW-COST MULTI-SIGNAL TRACER #145A
kit \$23.95 wired \$32.95



High gain RF and low gain audio input channels for signal tracing and trouble shooting RF, IF, and audio stages of AM, FM, and TV receivers. More than enough RF gain to trace up to receiver input; signal is heard through built-in 5" PM speaker. Shielded RF crystal demodulator and direct probes supplied. Individual panel receptacles make for easy change-over from RF to audio tracing or vice versa. Noise localizer circuit applies DC test voltage through probe to suspected component and simultaneously picks up and amplifies effect. May be connected as test speaker, amplifier or output transformer. Output for VTVM or scope. Also excellent as null detector, scope preamp, etc. Remarkably compact. Entire unit is transformer-operated for maximum isolation and safety.

specifications

Tube Complement: 1-12AX7 dual triode as voltage amplifier, 1-6AQ5 beam power amplifier, 1-6X4 full-wave rectifier • **Power Requirements:** 105-125 VAC, 60 cps, 40 watts • **Cabinet:** satin finish deep-etched aluminum panel and rugged grey wrinkle steel case • **Size (HWD):** 7-13/16" x 5-9/10" x 5-1/16" • **Weight:** 7 lbs.

FLYBACK TRANSFORMER & YOKE TESTER #944
kit \$23.95 wired \$34.95



Now one of the most difficult TV service jobs becomes quick and easy as A-B-C! Here's fast, positive testing of flybacks and yokes, in or out of the set... at lowest cost!

features

Positive check of all types of flybacks and yokes, in or out of set—in just seconds • Operates on the extremely sensitive grid-dip principle—shows up even 1 shorted turn! • Exclusive separate calibration for air-core and iron-core flybacks assures accuracy for testing all types • Large easy-to-read 4 1/2" meter • 3 separate colored scales • New compact size for extra-easy portability • Smart professional styling—satin finish aluminum panel, grey wrinkle steel case.

applications

specifications

Tube Complement: 1-6K6
Size (HWD): 7" x 5" x 4"
Weight: 5 lbs.
Power Requirements: 105-125 VAC, 60 cps.



IN-CIRCUIT BRIDGE-TYPE CAPACITOR TESTER #955

kit \$19.95 wired \$39.95



"In actual use, tests were simple, fast and clearly indicative. But for the capacitance-measuring function, nothing more than a simple switch need be operated. . . . Part of the manufacturer's new line of industrial equipment, the 955 is sturdily and attractively housed."—ELECTRONICS WORLD

The Model 955 is a truly advanced, highly dependable in-circuit and out-of-circuit capacitor tester. In addition to providing extraordinarily sensitive short and open tests, the Model 955 includes a Wien Bridge for capacity measurements, with a unique shunt resistance balancing provision* that permits in-circuit measurement even when the shunting resistance is comparatively low.

facilities

Indicator: Electron-ray tube EM84/6BG6. Bright bar pattern gives sharp, unmistakable indications.

Test Selector: Three-position switch—SHORT, CAPACITY, OPEN.

Test Leads: One coax-type for all tests; detachable, with mic connector coupling to unit.

Short Test: Out-of-circuit or in-circuit short check with shunt resistance as low as 1 ohm. Reliable up to 2000 μ f. Closed bars indicate short. 60 cps test frequency. Max. test voltage 6.3VAC (open leads), decreasing with decreasing impedance.

Open Test: Out-of-circuit or in-circuit open test of capacitors as small as 15 μ f with instrument adjusted normally. (With constant voltage supply, internal adjustment can be made for 5 μ f sensitivity). For in-circuit testing, shunt resistance may be as low as 35 ohms for capacitors above 250 μ f (7K ohm at 15 μ f). Closed bars indicate open. Test frequency approximately 19mc, very low voltage.

Capacity Measurement: From 0.1 to 50 μ f using Wien Bridge with unique shunt resistance balancing* permitting $\pm 10\%$ accuracy at any point on the capacity dial in either in-circuit measurement. The capacity scale is screened on a 4" diameter, heavy-gauge lucite disc. The reading point is just above the center of the indicator bar-pattern. Operating frequency of the bridge is 60 cps.

The $\pm 10\%$ accuracy is achieved by a sharp null indication (closed bars) when shunt resistance is balanced by the RC BALANCE control, and the .1-50mf CAPACITY dial is set at the correct capacitance value. The RC BALANCE control is calibrated in RC product (equivalent shunt resistance in kilohms multiplied by the capacitance in microfarads) in two ranges, 0.6 to 10.5 and 7 to infinity, selected by the RC RANGE switch. The very wide RC product range provided, with excellent spread permitting easy setting to any value, is the key to the accurate capacity measurement provided either in or out of circuit. For out-of-circuit measurements, the RC product value can be translated into dissipation or power factor by means of conversion charts in the manual.

Line Voltage: 105 to 130VAC, 60 cps; 8 watts drain. A LINE ADJUST control on the panel permits adjustment to maximum sensitivity regardless of line voltage variation within this range.

Miscellaneous: Exceptionally attractive, professional laboratory styling. Transformer-operated and protected by fuse in extractor-post mount.

Tubes: 1-6C4, 1-EM84/6FG6.

Size (HWD): 8 1/2" x 5 3/4" x 6".

Weight: 6 lbs.

*patent applied for

resistance-capacitance bridge & R-C-L

COMPARATOR #950B
kit \$23.95
wired \$29.95



4 separate Capacity ranges and 4 separate Resistance ranges! The only instrument of its kind with a Comparator Range for measurement of capacitance, resistance and inductance with a complementary component as a standard! You can depend on the EICO #950 for rapidity and precision in the measurement of unknown resistors and condensers. You make your readings directly on the calibrated front panel—without the need for complex and time-consuming computations. The transformer-operated power supply assures safety of operation.

Here's a precision professional instrument that should be standard equipment in every laboratory and service shop. With the extremely valuable COMPARATOR RANGE—exclusive with EICO at this outstanding low price—the #950 is one more "best buy" from the serviceman-minded electronics laboratories of EICO.

applications

Capacitance measurement of paper, mica, electrolytic and ceramic capacitors . . . resistance measurement . . . comparison measurement of resistance, capacitance and inductance with a complementary component as a standard . . . power factor measurement on electrolytics . . . finding leaky and shorted capacitors (built-in source of continuously variable polarizing voltage).

features

Direct reading scales for measurement of capacitance and resistance • Direct reading ratio scale for comparison measurement of capacitance, inductance and resistance • Extremely sensitive leakage indication directly on eye tube • Sensitive magic eye tube null indicator • Continuously variable polarizing leakage test voltage from 0 to 500 volts DC $\pm 10\%$.

specifications

Capacity: 4 ranges, 10 μ f to 5000 μ f. **Resistance:** 4 ranges, 0.5 ohms to 500 megohms. **Comparator:** 1 range, ratio from .05 to 20 (400 to 1). **DC polarizing voltage:** 0 to 500 volts DC (continuously variable) $\pm 10\%$. **Tube Complement:** 1-1629, 1-6X5. **Power Requirements:** 105-125 volts AC, 60 cps. **Size (HWD):** 8" x 10" x 4 3/4". **Weight:** 8 lbs. **Smart professional styling—satin finish deep-etched aluminum panel, grey wrinkle steel case.**



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• esthetic harmony • ease of assembly*

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