

Hickok 810

THE HICKOK MODEL 810 TRANSISTOR-Radio Tester is one of the most versatile AM radio test instruments made for the technician since the pre-war Meissner Analyst and the RCA-Rider Chanalyst. It is designed especially for servicing transistor radios but is equally useful for tube-type home and auto broadcast receivers.

The 810's functions include audio, i.f. and rf signal tracing; audio, i.f. and rf signal injection; generating signals for i.f. and rf circuit alignment, and transistor testing. The four-tube unit has a 6AB4 cathode-follower probe to minimize tuned-circuit loading, 6X4 full-wave rectifier and a pair of 6AU8 triode-pentodes. The pentode sections are used as rf oscillator and tuned rf amplifiers for signal tracing. The triode sections are used as af amplifier and cathode follower af and rf output.

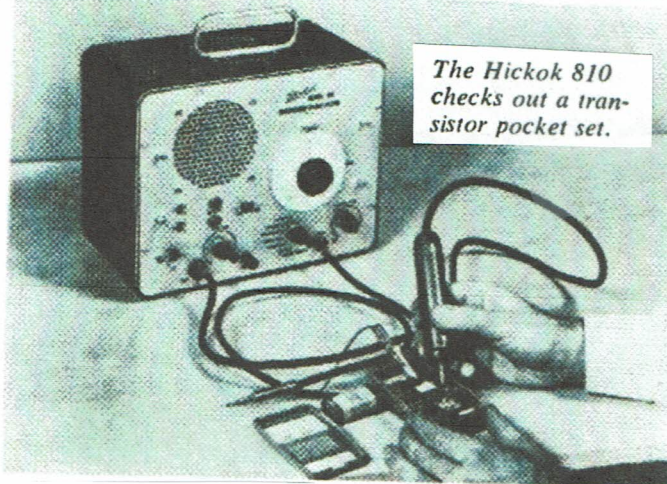
The main control is the FUNCTION SELECTOR. When it is in the 500-1600 KC OSC or 200-600 KC OSC positions, the tester is an rf signal generator covering those ranges. The rf or i.f. output—either modulated or not—is used for signal injection and circuit alignment. The signal level is set by the output attenuator in the grid circuit of the output cathode follower.

Throwing the switch to 500-1600 KC REC converts the circuit to a trf receiver for signal-tracing broadcast antenna and rf circuits or for use as a wide-band AM radio. In the 200-600 KC REC position, the function switch converts the 810 to a i.f. signal tracer or to a simple receiver capable of receiving aircraft weather and other broadcasts in this range. The input sensitivity of the trf circuit is around 200 μ V on both bands.

When using the 810 as a signal tracer, you can follow a signal from antenna to speaker. You simply move the

SPECIFICATIONS

Frequency ranges (trf receiver or rf signal generator):
 Band 1—200 to 600 kc
 Band 2—500 to 1600 kc
Audio signal output: 600-cycle sawtooth, 0 to 2 volts p-p
Audio amplifier: 10 mv input produces audible signal from speaker
Input impedance (cathode follower probe): 5 megohms and 4 pf
Output impedance (rf and audio): 180 ohms
Power input: 105-125 volts, 50-60 cycles, 25 watts at 115 volts
Dimensions: 11 1/4 inches wide, 9 inches high, 7 inches deep



The Hickok 810 checks out a transistor pocket set.

input probe from grid to plate, stage by stage, until the signal disappears, weakens or distorts. The defective stage is the one that produces the faulty signal at its output.

The 600 CPS AUDIO position of the function switch converts the tester to a 600-cycle sawtooth audio oscillator when the modulation switch is on. The tone generator is an NE-2 neon lamp connected as a relaxation oscillator. Level is controlled by the output attenuator.

The AUDIO-AMPL position connects the input probe to a two-stage audio amplifier for signal tracing in audio circuits. The amplified signal is heard in the 810's built-in speaker. Output level is controlled by the INPUT GAIN and OUTPUT ATTEN controls.

A simple transistor tester is an added feature of the 810. Two sockets, for n-p-n and p-n-p transistors, a pair of meter jacks and a GAIN-LEAK switch are on the front panel. The transistor to be checked is plugged into the correct socket—either directly or through small wire leads with alligator clips on one end. The switch is thrown to LEAK and a milliammeter plugged into the jacks. (A 2-ma meter or the equivalent range of a vom may be used.) The meter now reads leakage current.

When testing low-power transistors, leakage current may run as high as 150 μ A but generally it will be lower. Erratic or higher leakage currents generally indicate a defective transistor.

Throwing the switch to GAIN should double the meter reading. A gain reading more than twice the leakage reading indicates that the transistor has extremely high gain. When comparing transistors, the best of the group will have the lowest leakage and highest gain readings.

The leakage current of power transistors may run as high as 1 ma, and the gain factor will only be around 30%. A typical power transistor may have a leakage current of 700 μ A and a gain reading of 1 ma.—Robert F. Scott