

### Magic-eye Wide-range G.D.O.

Even in these days of semiconductor test instruments, a "magic-eye" tuning unit still offers advantages as a g.d.o. The unit in Fig. 58 was designed by F. A. S. Sterrenburg, who writes:

"The 'magic eye' is not only much cheaper than the combination of meter, amplifier and detector plus r.f. generator normally employed, but is also more rugged and easier to read. The design shown reduces the number of components to an absolute minimum. Since solid-state dippers also include a battery and meter they are rarely any smaller or more compact than this EM87 unit which in my case measures 9 by 6 by 4 cm. Of course one requires a cable connection to a power supply, but that is less objectionable than one might think.

"In fact when the system was found to work my existing solid-state dipper was immediately scrapped. I found the 'magic eye' dipper to provide the following advantages: (1) despite the rather large tuning capacitor, it was possible to achieve results up to 160 MHz without spurious dips (a smaller-value capacitor might be preferable if the unit was required for v.h.f. only); (2) the lowest frequency attainable with a standard 104 mH r.f.c. is 60 kHz (even lower frequencies could be achieved with a suitable choke if required).

"The incorporation of low-frequency ranges permits the checking of low-frequency crystals (for example FT241 crystals cannot be checked with many dippers), alignment of 450-470 kHz i.f. stages, and the lower second or third i.f. sections of such receivers as the BC453 and various National, Hammarlund, etc. models. In the original article 11 coils on octal valve sockets are specified for the full coverage of 60 kHz to 160 MHz."

writes: "The value of this unit as a checker and time saver cannot be over-emphasized. It is my observation that people who scoff at its simplicity do not understand its purpose, or appreciate the wide application and useful results that can be obtained from it. I firmly believe that every home constructor would find it invaluable."

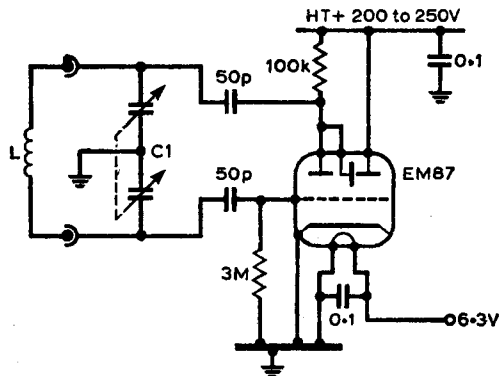


Fig. 58. The wide-range "magic eye" grid dip oscillator described by F. A. S. Sterrenburg in *Radio Electronica*. It is simpler, more compact and more effective than many solid-state dippers although it requires an external 6.3-volt, 200-volt power source. Coils (L) as required, the original model uses 11 coils wound on octal tube sockets to cover 60 kHz to 160 MHz continuously. C1 is Jackson type 0-0 (2 by 176 pF).