



CRYSTAL OSCILLATOR AND HARMONIC GENERATOR

The circuit sketch shown on this page covers a very useful piece of apparatus for the radio serviceman since it provides accurate marker points at 100 and 1,000 kc. intervals over a range between 100 kc. and 60 megacycles approximately.

Details of construction other than the theoretical circuit diagram are not particularly essential since each unit will, undoubtedly, be constructed to fit the space requirements that are available.

Wherever possible, standard parts easily obtainable from our distributors or the factory are utilized in the construction of this unit.

A unit of this type is almost indispensable, following the introduction of band-spread receivers, since the ordinary service oscillator or signal generator is incapable of maintaining the degree of accuracy required for proper scale calibration on such sets.

When carefully constructed with parts of the type specified, the unit, barring accident, should last indefinitely.

Alternate attenuator systems are shown since in some cases it might be desirable to connect the oscillator to a transmission line feeding several working positions, or again it might be desirable to build it into a semi-portable unit where the more elaborate line matching network was not required.

Since the oscillator is electron coupled, variation in the attenuators will have very little effect on the frequency. The only notable condition of change in frequency is that developing when first the unit is placed in operation, and during that interval at which the components are reaching a fixed temperature.

With reference to the inductance T2, Part No. 504-11, the portion of the coil used is that which constitutes the secondary winding and which is located between the upper (grid) tap and the lower (ground) tap (approximately two-thirds of the inductance from the top of the coil).

The crystal used is the type SMC100-1000 and may be obtained from the factory, your local parts distributor or the Biley Electric Company of Erie, Pa.

Since a definite and workable circuit arrangement is shown, it will be impossible to consider requests for additional information covering the use of substitute or alternative parts.