



Frequency characteristic of the multiplier.

SPECIFICATIONS:

Multiplier Ratio: 10 to 1, within $\pm 1\%$.
Input Impedance: From 1 Mc to 100 Mc, the input impedance is effectively that of a $4.5 \mu\text{mf}$ condenser of less than 0.5% power factor.

Frequency Error: The frequency error is shown in the plot. No appreciable error occurs between 1 Mc and 100 Mc. The multiplier is not recommended for frequencies below 1 Mc.

Net Weight: 12 ounces.

Type	Code Word	Price
726-P1 Multiplier.....	ALoud	\$18.00

Add 10% to price listed above.

IMPROVEMENTS IN THE PRECISION WAVEMETER

The tuned-circuit wavemeter, long since displaced for highly precise work by crystal standards, nevertheless remains one of the most useful general-purpose instruments in the radio laboratory. This is particularly true of the TYPE 724 Precision Wavemeter, which has been for many years an accepted standard in the industry.

For such applications as the preliminary line-up of radio transmitters and the rapid checking of oscillator frequencies, this precision wavemeter fills a definite need in the frequency measurement field. The variable capacitor is a General Radio TYPE 722, specially designed for the purpose, with plates shaped to give a scale that is linear in frequency. The precision of setting is better than one part in 25,000. The plug-in coil mounting allows the coil to be rotated to obtain different degrees of coupling.

Newly developed crystal rectifiers and

newly derived design formulae for inductors have made it possible to improve the performance of the wavemeter considerably. In the latest model, TYPE 724-B, the vacuum-tube detector has been replaced by a germanium crystal, thus eliminating the need for batteries and considerably simplifying the maintenance problem. Both selectivity and sensitivity are enhanced owing to a 2:1 improvement in the loading effect of the detector on the tuned circuit.

Selectivity and sensitivity are also greatly improved by a complete redesign of the inductors to obtain higher values of the storage factor, Q . All inductors have considerably higher Q 's than formerly, with the greatest gain obtained on the 16 to 50 kilocycle coil, where the improvement is of the order of 6:1. As a result, this coil is now calibrated to the same accuracy as the others, namely, 0.25% .



SPECIFICATIONS

Frequency Range: 16 kilocycles to 50 megacycles.

Accuracy: $\pm 0.25\%$.

Calibration: The calibration is supplied in the form of a table of calibrated points. Linear interpolation between these points is used to obtain settings for other frequencies.

Condenser: Precision worm-drive type similar to TYPE 722. The condenser setting is indicated on the dial and drum and is controlled from the front of the panel. There are 7500 divisions for the entire 270-degree angular rotation of the condenser rotor. The precision of setting is better than one part in 25,000. The plates are shaped to give an approximately linear variation in frequency with scale setting.

Inductors: Coils are wound on isolantite forms and enclosed in molded phenolic cases. Seven

coils are used to cover a frequency range between 16 kilocycles and 50 megacycles.

Resonance Indicator: A germanium crystal rectifier is used with a microammeter to indicate resonance. The indicator is coupled to the tuned circuit through a capacitive voltage divider.

Crystal: TYPE 1N34 germanium crystal rectifier is used.

Mounting: A wooden storage case, fitted with lock and carrying handle, is furnished. This has compartments for holding the condenser, inductors, and calibration charts.

Dimensions: Carrying case, $17\frac{1}{8} \times 13 \times 12\frac{1}{2}$ inches, over-all.

Net Weight: With carrying case, $35\frac{1}{4}$ pounds; without carrying case, 20 pounds.

Type	Code Word	Price
724-B Precision Wavemeter	WOMAN	\$230.00

Add 10% to price listed above.

The TYPE 724-B Precision Wavemeter is identical in appearance with the TYPE 724-A shown here.

