OPERATING MANUAL

TE-20D

RF SIGNAL GENERATOR

SPECIFICATIONS

FREQUENCY RANGE ·············· 120 Kc to 500 Mc in 6 bands

Band A 120-320 Kc

Band B 320-1,000 Kc

Band C 1-3.4 Mc

Band D 3.2-11 Mc

Band E 11-38 Mc

Band F 36-130 Mc (Fund.)

F' 100-500 Mc (Harm)

OUTPUT (RF) ·················· High (100,000 μv max)

Low (100 μv max.)

OUTPUT (Audio) ·············· 400 cps., approx. 8v (adjustable)

MODULATION ·················· 400 cps, internal

POWER REQUIREMENTS ········ 105-125 volts, 220-240 v A C, 50-60 cps.

TUBE COMPLEMENT ············ 1-12BH7

1-6AQ5

1-Silicon Rectifier

DIMENSIONS ·················· 140 (H) × 215 (W) × 170 (D)

SHIPPING WEIGHT ·············· 2.8kg

FUNCTIONS OF CONTROLS

A good understanding of the controls is essential if optimum results are to be obtained with this instrument. The function of each control is indicated briefly in Figure 1 and in more detail below.

VERNIER TUNING DIAL

The A~F' bands of frequencies are calibrated on the vernier-controlled tuning dial and cover the total range of 120kc to 500Mc (2nd harmonics) on the lower portion of this scale.

FREQ BAND

This is a rotary switch which selects one of the 6 bands of frequencies on the tuning dial. The switch should be set to the band which includes the desired frequency. Actual frequency selection is then accomplished by means of the tuning dial.

FUNCTIONS

(1) When the Function Switch is moved from POWER OFF position to the right, a pilot lamp remains lit when the set is ON.

(2) In the INT position, the internal 400 cps audio signal modulates the RF output, while in this position, a 400 cps audio signal (up to 8V) is also available at the jacks marked AF and GND.

(3) In the EXT position, the internal audio signal is cut off and the RF output is unmodulated. However, insertion of an external audio frequency (50 cps to 15 kc) between the AF and GND jacks will cause the RF signal to be modulated by the frequency. The audio input level is adjusted by means of the AF IN-OUT control.

(4) This unit is ideally provided with a crystal socket for self-calibration. Install a crystal of optional frequency (FT-243 Type, 500kc~10 Mc) to the socket, and the 0 beat will be delivered through an earphone or a speaker externally connected to the EXT. MOD/AF OUT terminal for audible alignment of this unit.

RF ATT

This control is used to adjust the level of the RF output.

HIGH AND LOW OUTPUTS

Both high and low level jacks are provided on the instrument. The high level jack (H) provides a maximum of 100,000 μv and the low jack (L) 100 μv. The level of both outputs may be adjusted by means of the RF ATT control.

A shielded test cable, terminated at one end with banana jacks and at the other with alligator clips, has been supplied for connection of the signal generator to equipment under test. Always make sure the black shielded plug is connected to the corresponding black GND jack on the generator or damage to the instrument may result.

WARNING

Never connect the shielded lead directly to the chassis of AC/DC equipment. To prevent danger of shock, place a 0.1 μf/400v capacitor in series with the shielded lead before connecting it to such equipment.

USING THE TE-20D

An RF signal generator is an invaluable aid in receiver testing and alignment. For example, by inserting an RF signal at various points in a receiver, the proper functioning of each stage and its associated coupling circuits can easily be determined. This procedure is known as the signal substitution or signal injection method of servicing. The RF signal generator is also universally used for receiver alignment. A superheterodyne receiver may have from three to seven or more tuned circuits, each of which has to be in resonance at its proper frequency for best operation.

The procedure for aligning AM or FM receivers will vary from unit to unit. It is always recommended, therefore, that the manufacturer's service and alignment notes be referred to before attempting alignment. These usually contain specific instructions in the procedure to be followed for optimum results. There are many other uses to which a signal generator may be put, but they are far too numerous to list here.

LOCATIONS AND FUNCTIONS OF CONTROLS

PILOT LIGHT

VERNIER TUNING DIAL

X TAL SOCKET

FUNCTION
Rotary switch selects power ON-OFF. External or Internal MOD. and X tal calibration.

FREQ BAND
Rotary switch selects one of six bands of frequencies.

B   D   E
A   C

For connection of external audio when MOD is set to EXT. When MOD is set to INT. audio available at these jacks.

RF OUT
High or Low RF output at these jacks.

RF ATT
Acts as level control for RF output.

SCHEMATIC DIAGRAM