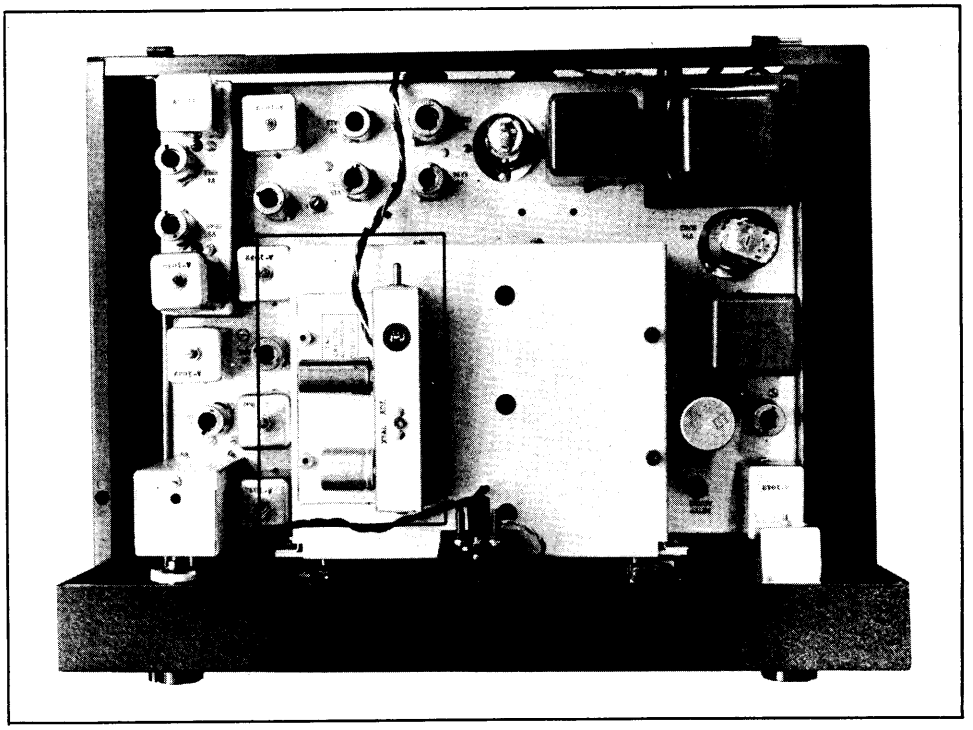
INSTRUCTION SHEET

for

CRYSTAL CALIBRATOR

MODEL GPC



The Model GPC shown installed in the Model GPR-90 Receiver

GENERAL

The Crystal Calibrator, TMC Model GPC is a source of 100 Kc Marker signals of sufficient magnitude to enable the user to check the dial calibration of a communications receiver. Adapted particularly for the GPR-90, it may be used to calibrate other receivers if B+ (250 V.,2 ma) and filament power (6.3 V.,.3 amps) is available. The unit employs an oscillator circuit which provides ample 100 Kc harmonics up to 35 Mc.

INSTALLATION

The GPC may be installed in the GPR-90 with control either from the front panel or from inside the receiver. The latter installation requires no drilling.

For installation and operation from inside the receiver.

1. Mount the GPC on the variable capacitor dust cover, of the GPR-90, under the two knurled nuts on the left side.

2. Plug the octal plug into the "Power Supply Out" socket on the rear of the chassis.

3. Connect the green lead, with the spade lug attached, to the 75 ohm winding of the "Antenna Input" terminals.

The above method of installation requires raising the cabinet lid to throw the switch ON or OFF.

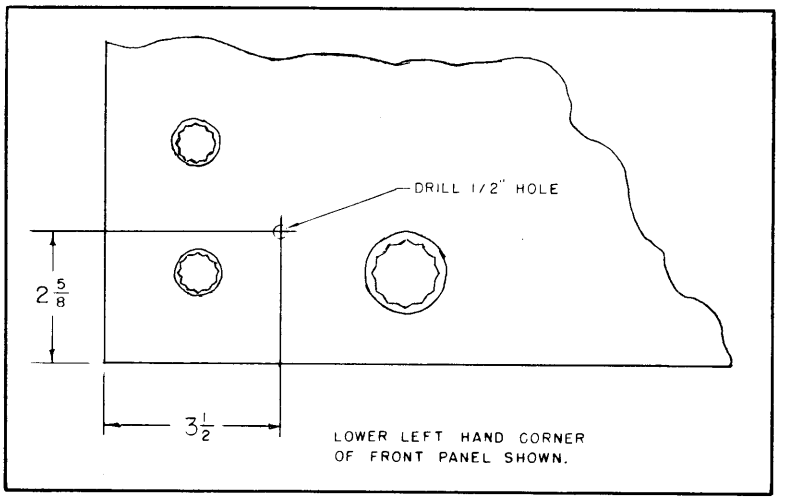
For permanent front panel mounting of the switch on the GPR-90.

1. Drill a 1/2 inch hole at the point on the left side of the front panel as described below.

2. Pass the two leads attached to the extra switch supplied with the GPC, through the grommet on the GPC and solder them to the switch terminals.

3. Mount the switch in the 1/2 inch hole.

The unit is now ready for operation.



Front Panel Installation

OPERATION

With the power switch for the GPC "ON" (up position) for operation. The GPR-90 controls are set as follows: BFO "ON"; AVC-MANUAL to "AVC"; set the "BAND SPREAD" dial at 100 on the log scale. Turn the "MAIN TUNING" dial through its range. A zero beat will be observed every 100 Kc. This may be done on any of the six "MAIN TUNING" bands.

The "BAND SPREAD" dial is checked in a similar manner except that the "MAIN TUNING" dial is first set at the proper Band Set pointer on its dial. The "BAND SPREAD" dial may then be tuned and at every 100 Kc a zero beat will be observed.

FREQUENCY ADJUST

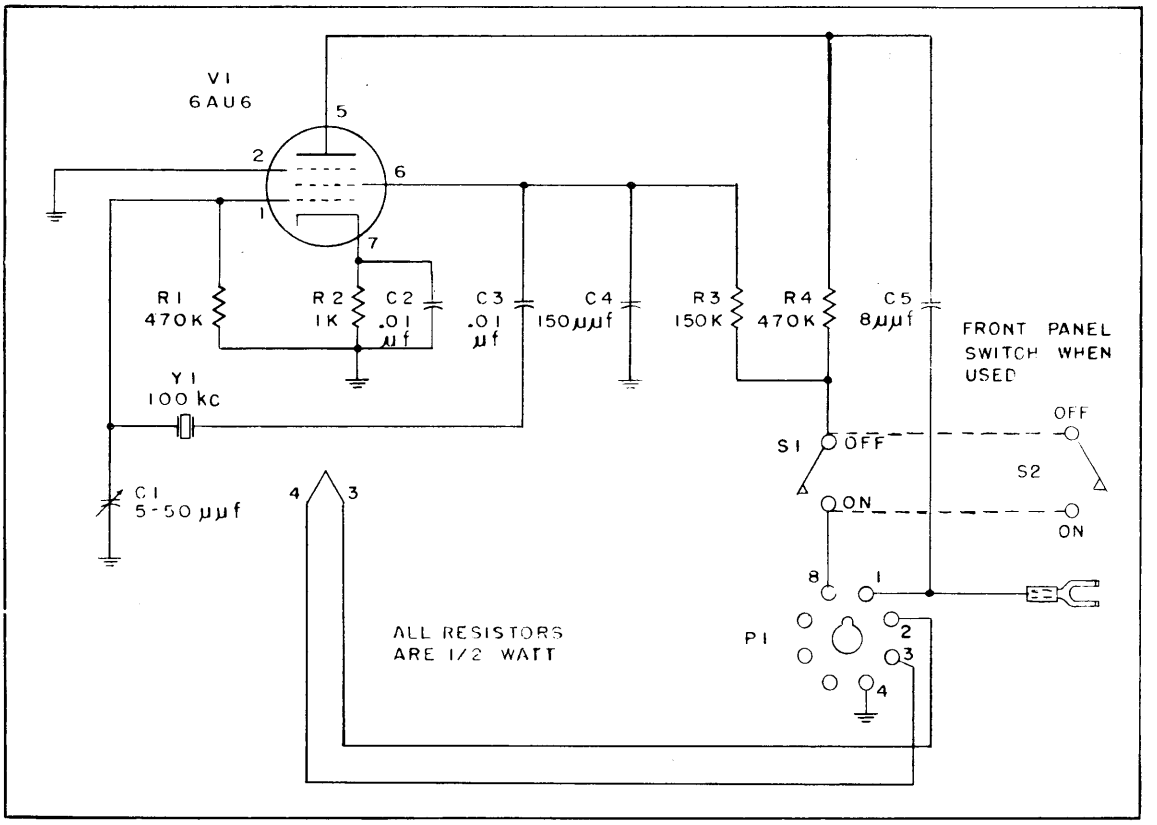
The frequency of the GPC may be adjusted, if necessary, by the "FREQUENCY ADJUST" control on the top side of its chassis. The frequency of the GPC is calibrated at the factory against WWV, National Bureau of Standards.

Calibration is performed as follows: With an antenna connected to the receiver, and the BFO "ON", tune in WWV at 2.5 Mc, 5 Mc, or 10 Mc. Turn on the GPC. The "FREQUENCY ADJUST" control should then be varied until zero beat is accomplished. The GPC is now at resonance with WWV.

PARTS LIST

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
C1	CAPACITOR, variable: air; 3.2-50 mmfd.	Crystal Tuning	CT–104–3
C2	CAPACITOR, fixed: ceramic; .01 mmfd. (GMC), 500 wvds, disc type.	Cathode Bypass	CC–100–16
C3	CAPACITOR, fixed: ceramic; .01 mmfd. (GMC), 500 wvds, disc type.	DC Blocking	CC–100–16
C4	CAPACITOR, fixed: ceramic; 150 mmfd., ±15 mmfd., 500 wvdc.	Screen Bypass	CC–101–2
C5	CAPACITOR, fixed: ceramic; 8 mmfd., ±2%, 500 wvdc.	DC Blocking	CC21SL080G
P1	CONNECTOR: mica; 8 prong with keyed base.	Power	PL–127
R1	RESISTOR, fixed: composition; 470,000 ohms, ±10%, ½ watt.	Grid Leak	RC20GF474K
R2	RESISTOR, fixed: composition; 1,000 ohms, ±10%, ½ watt.	Cathode Bias	RC20GF102K
R3	RESISTOR, fixed: composition; 150,000 ohms, ±10%, ½ watt.	Screen Load	RC20GF154K
R4	RESISTOR, fixed: composition; 470,000 ohms, ±10%, ½ watt.	Plate Load	RC20GF474K
S1	SWITCH, toggle: SPST; 3 amp., 250V.	Power ON/OFF	ST–103–1–62
S2	SWITCH, toggle: SPST; 3 amp., 250V. (Front Panel)	Power ON/OFF	ST–103–1–62
V1	TUBE, electron: 6AU6, min., 7 pin	Oscillator	6AU6

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
XV1	SOCKET, tube: min., 7 pin	Socket for V1	TS102P01
XY1	SOCKET, crystal: ceramic; 487 in., spacing, for .093 in pins.	Socket For Y1	TS–105–1
Y1	CRYSTAL Unit; 100 Kcs, ±.005%	100Kc Crystal	CR–100



Schematic Diagram, Model GPC

CK-315-C

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