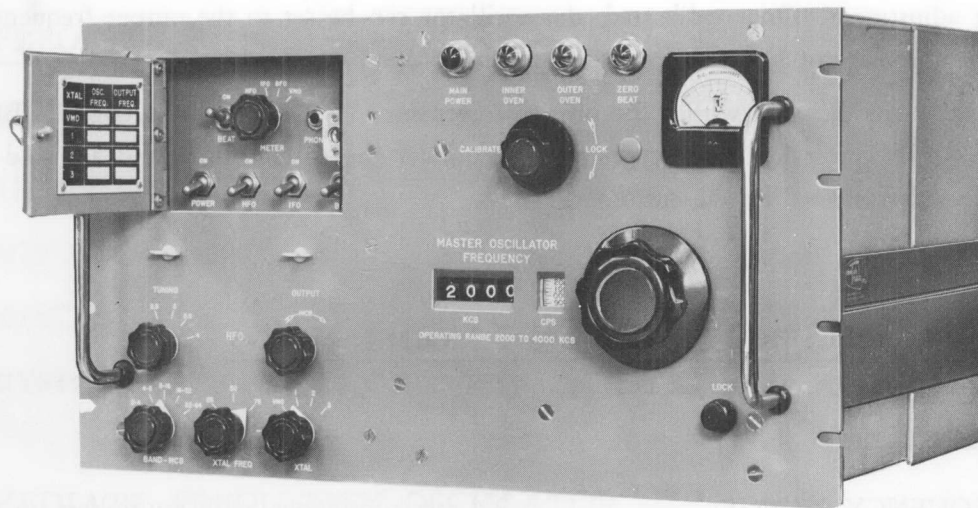


AUG , 8 1964



TECHNICAL BULLETIN NUMBER 2018

Variable Frequency Oscillator
TMC Model VOX-5
(0-330B/FR)



- Stabilize receivers singly or in diversity
- VMO for transmitters
- Lab source of RF frequencies to 64 mcs.
- Highly stable direct reading oscillator
- Thermostatically controlled inner and outer ovens
- Vernier calibrate control

The Technical Materiel Corporation's Model VOX-5, Variable Frequency Oscillator (0-330B/-FR), is a precision oscillator which greatly enhances diversity reception by providing common HFO, IFO and BFO for up to three receivers. There is a direct reading dial that covers the oscillator range of 2 to 4 mcs. with multiplier circuits providing continuously variable output up to 64 mcs. Model VOX-5 is used as a master oscillator for transmitters or as a substitute for almost any crystal requirement in this range. Thermostatically controlled inner and outer ovens, with their high thermal inertia, provide Model VOX-5 with a minimum operating stability of ± 1 part in 10^5 per day after aging.

Variable Frequency Oscillator

Model VOX-5 incorporates a highly stable direct reading oscillator with a large accurate counter type dial. The first four significant figures (Kcs) are large easily read numerals on the counter face, and the last three figures (cps) are read on a clearly engraved dial. This feature completely eliminates the use of charts or interpolations and enables the most inexperienced operator to select the correct frequency without extensive instruction.

Check points against the 100 kc built-in crystal reference are available every 100 kcs., both aurally (phone jacks on front and rear panels) and visually (neon indicator on front panel). The crystal reference is contained within the double oven assembly of the oscillator itself.

A vernier calibrate control has been incorporated in this series, providing a broad, smooth operating adjustment. Once calibrated, the oscillator can be set to the output frequency and the operator can be sure of long term extremely stable output.

Facilities are included within the unit to insert three (3) HFO crystals, two (2) BFO crystals and one (1) IFO crystal. Crystal types are listed under the specifications and are sold separately with frequencies selected by the customer.

TECHNICAL SPECIFICATIONS, TMC MODEL VOX-5

HF OSCILLATOR

FREQUENCY RANGE:	2-4 mcs continuous, with multipliers up to 64 mcs.
OUTPUT IMPEDANCE:	75 ohms coaxial.
OUTPUT LEVEL:	2 watts throughout basic range of 2-4 mcs and 0.5 watts 4 to 64 mcs adjustable.
OUTPUT CONNECTIONS:	Three BNC RF connectors.
CRYSTAL FREQUENCIES:	2-4 mcs for output frequencies of 2-64 mcs.
CRYSTAL:	CR-18/U
CRYSTAL POSITIONS:	3 each, available on front panel switch.
OUTPUT VOLTAGE:	Sinusoidal.
MINIMUM STABILITY:	20 cycles per megacycle for any fixed temperature within the range of 0 to 50° C. 100 cps maximum deviation for ambient temperature change from 0 to 50° C.
CALIBRATION:	Direct reading calibration in cycles per second from 2-4 megacycles.

RESETTABILITY:	± 10 cycles per megacycle to a calibrated frequency.
LINE VOLTAGE CHANGE EFFECT:	5 cycles per mc/s for $\pm 10\%$ change in line voltage.
HUMIDITY EFFECTS:	Average change of 130 cycles at 3 mcs for 50% to 95% humidity change.
HIGH FREQUENCY OSCILLATOR CALIBRATION:	Against 100 kc crystal oscillator at 100 kc points.

BEAT FREQUENCY OSCILLATOR

FREQUENCY RANGE:	300 to 1000 kcs.
OUTPUT LEVEL:	6 volts across 1000 ohms with output level control.
OUTPUT CONNECTIONS:	Three BNC RF connectors.
CRYSTAL TYPE:	CR-46/U
CRYSTAL POSITIONS:	Two, on rear panel, selectable.

INTERMEDIATE FREQUENCY OSCILLATOR

FREQUENCY RANGE:	3.2 to 3.9 mcs.
OUTPUT LEVEL:	2 volts into 75 ohms coaxial.
CRYSTAL TYPE:	CR-18/U.
OUTPUT CONNECTIONS:	Three BNC RF connectors.

GENERAL

ZERO BEAT INDICATOR:	Flashing neon at check points and aural zero beat.
PRIMARY POWER:	115/230v, 50/60 cps, approximately 100 watts average. 250 watts peak during oven heating.
SIZE:	10" \times 16" \times 10½" high. 29" \times 30" \times 20" packed for export.
WEIGHT	67 lbs. net. 157 lbs. packed for export.

Variable Frequency Oscillator

MOUNTING:	Standard 19" relay rack mounting. Available with or without slides.
LOOSE ITEMS:	Three 6 ft. long service cables, TMC CA-108, CA-109, and CA-502, are supplied with each VOX-5.
INSTRUCTION BOOK:	IN-223.
COMPONENTS AND CONSTRUCTION:	Equipment is manufactured in accordance with JAN/MIL specifications wherever practicable.



THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, N. Y.

AND ITS SUBSIDIARIES . . .

TMC (Canada), Ltd., Ottawa, Canada
TMC Industrial Corp., Mamaroneck, N. Y.
TMC Systems, Inc., Alexandria, Va.
TMC Systems, (Texas), Inc., Garland, Texas

TMC Systems, (Calif.), Inc., Oxnard, Calif.
TMC Systems, (Florida), Inc., Pompano Beach, Fla.
TMC Power Distribution, Inc., Alexandria, Va.
TMC Systems, A. G., Luzern, Switzerland
TMC Research Inc., San Luis Obispo, Calif.