

**KENWOOD**

HF REMOTE VFO

**VFO-240**

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**INSTRUCTION MANUAL**

TRIO-KENWOOD CORPORATION

Your new Model VFO-240 remote VFO has been carefully engineered and manufactured under rigid quality standards, and should give you satisfactory and dependable operation for many years.

### AFTER UNPACKING

#### Shipping Container:

**Save the boxes and packing in the event your unit needs to be transported for temporary operation at a remote location, maintenance, or service.**

### ACCESSORIES

The following accessory items are included with the unit:

|  |          |
|--|----------|
| Instruction manual (B50-2799-00) ..... | 1 copy   |
| VFO cable (E30-1628-15).....           | 1 piece  |
| Ground cable (E30-1623-05) .....       | 1 piece  |
| Extension feet (J02-0049-14) .....     | 2 pieces |
| Screws (N30-4025-46).....              | 2 pieces |

## ■ FEATURES

1. The model VFO-240 is a remote VFO designed for use with the TS-530S, TS-830S transceiver, permitting cross-channel transceive operation.
2. The VFO-240 matches the TS-530S and TS-830S in design and appearance.
3. The FET oscillator circuit assures high stability and distortion-free output.
4. The combination of precision anti-backlash gearing and a linear variable capacitor allows accurate frequency reading. Calibration is at 1-kHz intervals from 0 to 25 kHz. The indented main knob is convenient for rapid tuning.
5. The RIT circuit allows independent receive frequency adjustment without disturbing the main tuning.
6. Transmit frequency can be preset (spotted) by simply pressing the T-F SET switch without using the FUNCTION switch. The VFO is placed in transmit mode during reception.
7. The VFO-240 receives power from its companion TS-530S and TS-830S.
8. The VFO-240 is installed by simply connecting the supplied VFO and ground cables. The VFO cable carries the output, power and control lines.

### CONTENTS

|                            |   |
|----------------------------|---|
| 1. FEATURES .....          | 2 |
| 2. SPECIFICATIONS .....    | 3 |
| 3. SETUP .....             | 3 |
| 4. CONTROLS .....          | 3 |
| 5. OPERATION .....         | 4 |
| 6. SCHEMATIC DIAGRAM ..... | 6 |

## ■ SPECIFICATIONS

|                              |   |
|------------------------------|---|
| Oscillator frequency .....   | 5.50~6.00 MHz   |
| Oscillator circuit.....      | Clapp   |
| Output voltage .....         | 0.2V (across 470 ohm load)  |
| Frequency stability.....     | Within 100 Hz per 30 minutes after 3 minutes warm-up<br>(at room temperature) |
| Solid-state complement ..... | FET: 2<br>Transistor: 2<br>Diode: 6   |
| Power source.....            | From TS-530S or TS-830S   |
| Dimensions .....             | 180 (7-1/8") W × 133 (5-1/4") H × 288 (11-5/16") D mm<br>(inch)               |
| Weight .....                 | 2.9 kg (6.4 lbs)  |

\* Specifications are subject to change for improvement without notice.

## ■ SETUP

### CONNECTION TO THE TRANSCEIVER (Fig. 1)

Connect the VFO cable between the VFO OUT connector on the VFO-240, and the EXT VFO connector on the transceiver. Connect the ground cable between the GND terminals of both units.

**Note:**

The VFO-240 can be operated by simply connecting the VFO cable to the EXT VFO connector on the transceiver.

Connect the ground cable to the GND terminal and the transceiver GND terminal.

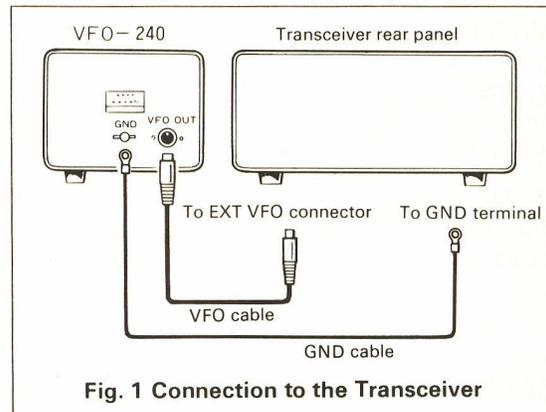


Fig. 1 Connection to the Transceiver

# ■ CONTROLS

## FRONT PANEL

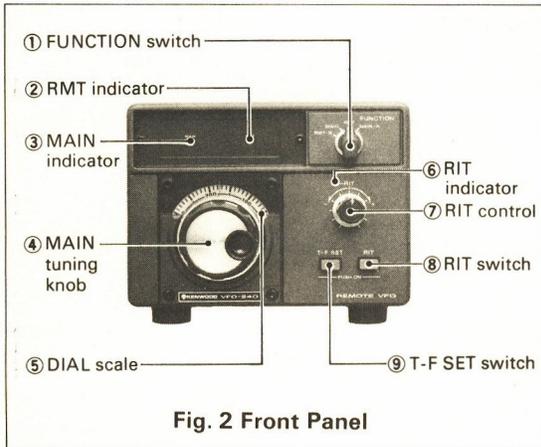


Fig. 2 Front Panel

### 1. FUNCTION Switch

A four-position switch selects the VFO function:

- RMT-R Remote VFO controls reception.
- MAIN Remote VFO stand by.
- RMT Remote VFO controls both transmission and reception.
- MAIN-R Remote VFO controls transmission.

### 2. RMT indicator

This indicator lights when the remote VFO is in operation.

### 3. MAIN indicator

This lights when the transceiver VFO controls operation.

### 4. MAIN Tuning Knob

This knob is calibrated from 0 to 25 kHz at 1-kHz intervals.

The indented knob is convenient for rapid tuning.

**CAUTION: Do not force tuning past the stops; it will damage the dial mechanism.**

### 5. DIAL Scale

This dial is calibrated at 10 kHz intervals from 0 to 500.

It operates with the main tuning knob.

### 6. RIT indicator

This lights when the RIT control is active.

### 7. RIT (Receiver Incremental Tuning) Control

This control is used to vary the receive frequency by approximately  $\pm 2$  kHz, independent of the transmit frequency. It is used when the receive and transmit frequency must be slightly offset or when cross-frequency QSO is desired.

### 8. RIT Switch

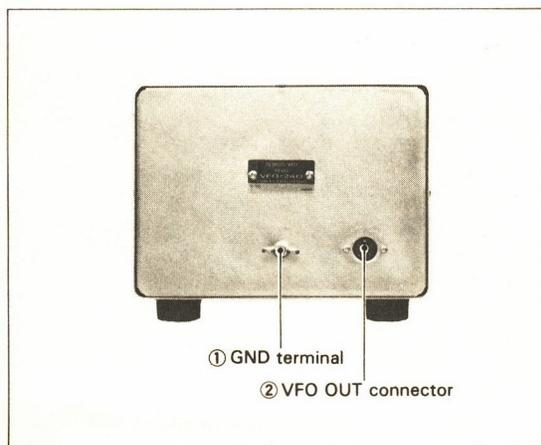
This switch turns the RIT function ON and OFF.

- (OUT) : RIT OFF
- (IN) : RIT ON

### 9. T-F SET Switch

This switch is used to indicate (spot) the transmit frequency. (It will not function during transmission.)

## REAR PANEL



### 1. VFO OUT connector

Connect the VFO cable to this and the transceiver EXT VFO connector.

### 2. GND terminal

Connect the ground cable to this and the transceiver GND terminal.

## ■ OPERATION

### FUNCTION SWITCH OPERATION

#### RMT-R

The transceiver functions for transmission, and the VFO-240 functions for reception.

The MAIN indicator will light during transmission and the RMT indicator during reception.

#### MAIN

The VFO-240 stands by, while the transceiver operates.

The MAIN indicator remains ON.

#### RMT

The VFO-240 functions for both transmission and reception, while the transceiver VFO stands by.

The RMT indicator remains ON.

#### MAIN-R

The transceiver functions for reception, and the VFO-240 functions for transmission.

The MAIN indicator will light during reception, and the RMT indicator during transmission.

Table 1 FUNCTION Switch Operation

| FUNCTION switch position | Transceiver                | VFO-240                    |
|--------------------------|----------------------------|----------------------------|
| RMT-R                    | Transmission               | Reception                  |
| MAIN                     | Transmission and reception | Stand by                   |
| RMT                      | Stand by                   | Transmission and reception |
| MAIN-R                   | Reception                  | Transmission               |

### T-F SET SWITCH OPERATION

1. Depress this push-button switch to select a transmit frequency for cross-frequency operation. With the FUNCTION switch set to RMT-R or MAIN-R, depress the switch and the transmit VFO will energize, and the transmit frequency will be displayed.

Set the transmit frequency by turning the main tuning knob.

#### Note:

Transmit frequency setting should be made with the RIT OFF.

2. With the push-button switch released, the VFO will operate in the mode selected by the FUNCTION switch. This switch is useful for

quick setup of a transmit frequency for DX operation.

3. The T-F SET switch is used only when the FUNCTION switch is set to the MAIN-R or RMT-R (split-frequency QSO where transmit and receive frequencies are independent).

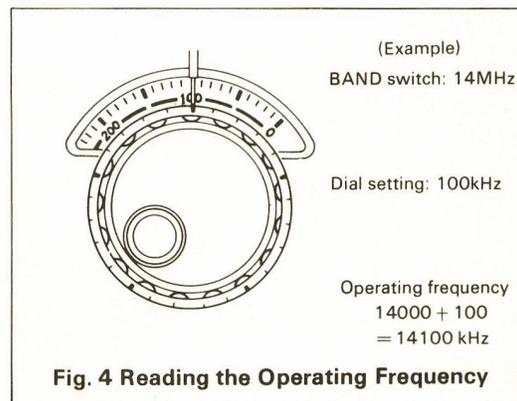
Operating condition can be checked by the LED's, thus preventing misoperation.

### RIT SWITCH OPERATION

Turn the RIT switch ON and the indicator will light. By adjusting the RIT control, the VFO receive frequency can be varied by  $\pm 2$  kHz without affecting the transmit frequency. The transmit frequency remains the same. The receive frequency at RIT "O" is the same as that at RIT-OFF. When a frequency is selected by the main tuning knob at RIT-OFF, it is possible to receive two frequencies by turning the RIT ON and OFF.

### READING THE OPERATING FREQUENCY (Fig. 4)

The dial mechanism of the VFO-240 is the same as that of the TS-530S or TS-830S. The dial is calibrated at 1-kHz intervals from 0 to about 25 kHz (full rotation). The operating frequency can be obtained by adding the frequency (0-500 kHz) read on the dial to the BAND switch frequency (MHz). In SSB mode, the frequency selected indicates a suppressed carrier frequency and, in CW mode, the frequency indicates an operating frequency 800 Hz higher than the receive frequency.



## DIAL CALIBRATION (FIG. 5)

Calibration method is the same as for the transceiver VFO. Set the FUNCTION switch to RMT-R or RMT, and the transceiver CAL switch to ON. By turning the main tuning knob, a beat signal will be heard every 25 kHz.

Adjust the knob for zero beat. Hold the main tuning knob stationary, and slip the dial skirt so the 5-kHz (long line) markings on the dial or the frequency reading on the transceiver digital display is correctly aligned with the dial cursor. (The transceiver MODE switch can be in any position.)

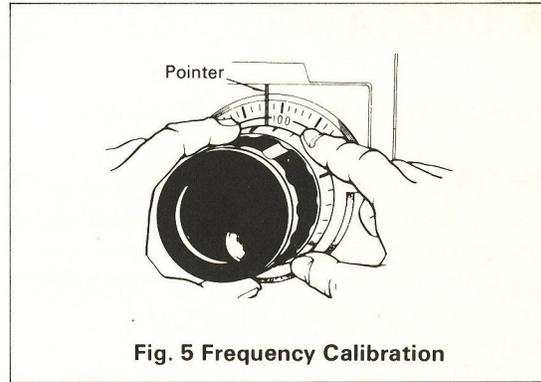


Fig. 5 Frequency Calibration

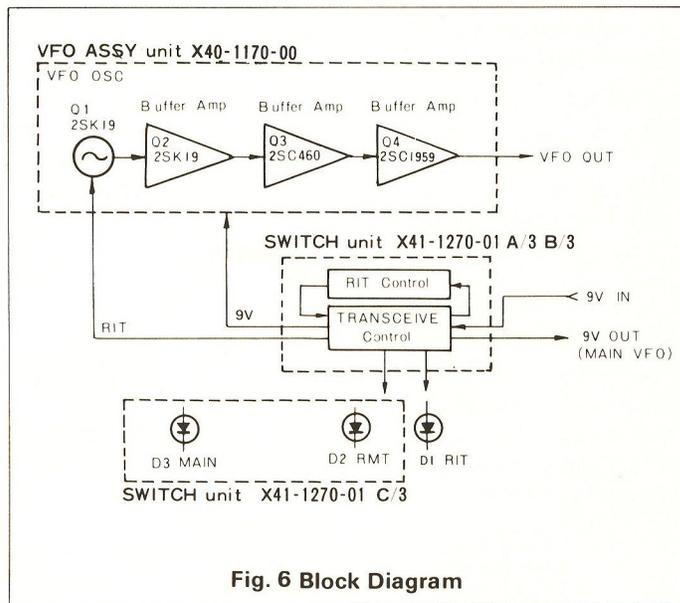
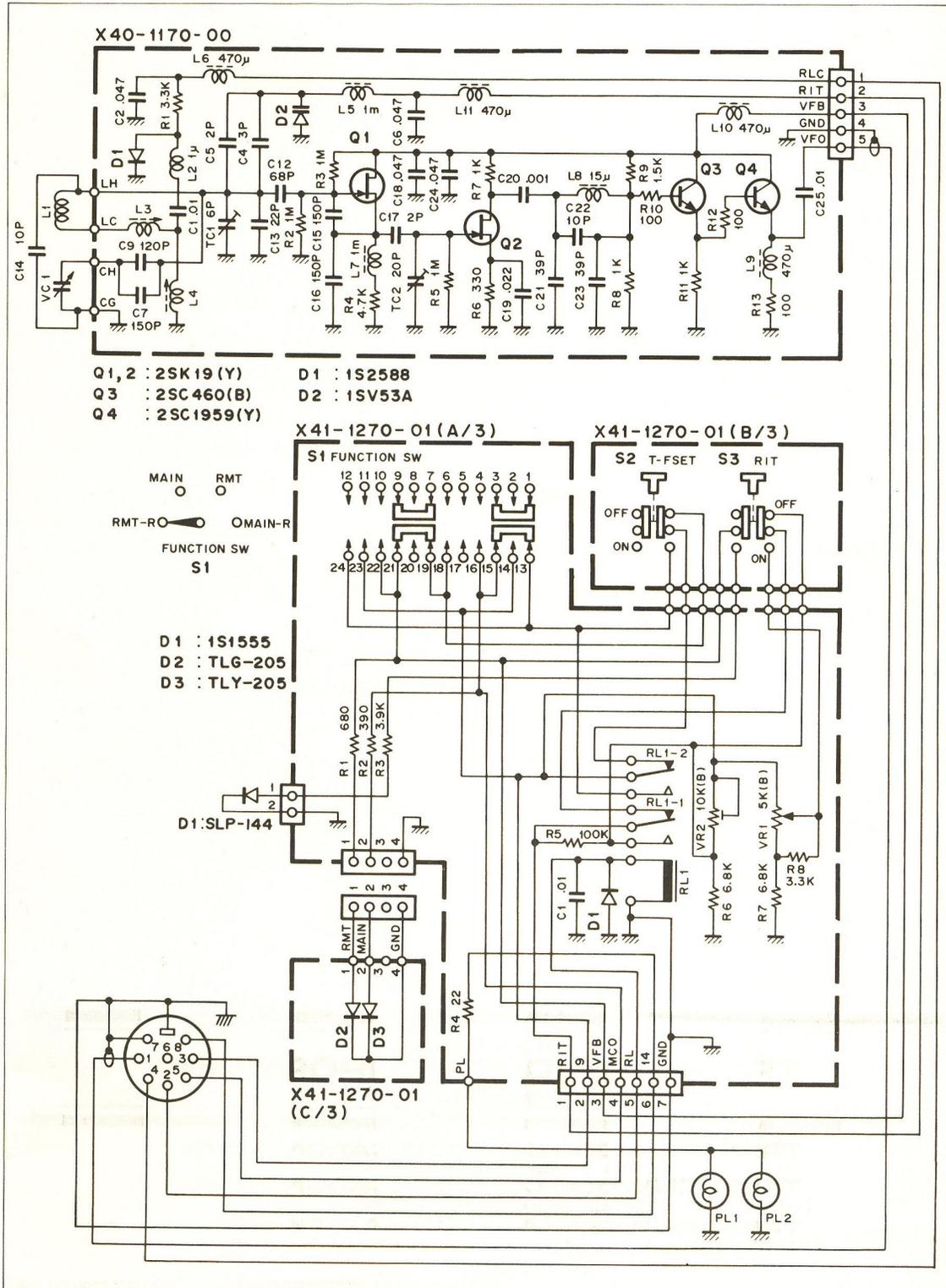


Fig. 6 Block Diagram

# SCHEMATIC DIAGRAM

\* Circuit design and ratings are subject to change for improvement without notice.



Model VFO-240

Serial No. \_\_\_\_\_

Date of Purchase \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Dealer \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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A product of  
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