Regency

MONITORADIO RECEIVER

MODEL TME-8H/L

INSTRUCTION MANUAL

UNPACKING

1 - Receiver Unit

1 - AC Power Cord

1 - Telescopic Antenna

1 - Instruction Manual

1 - Frequency/Service Label

1 - Warranty Card

To be filled out and returned to:

Regency Electronics, Inc.

7900 Pendleton Pike

Indianapolis, Indiana 46226

OPERATION

It is highly recommended that the sections on Installation and Operation be read before the initial usage of this unit. A few minutes spent in reading these instructions will certainly reduce the number of questions, and problems, that may arise concerning optimum performance and proper usage.

MAINTENANCE

It is recommended that the services of a qualified electronic technician be used for troubleshooting.

DO NOT TAMPER WITH INTERNAL ADJUSTMENTS------- DAMAGE TO THE EQUIPMENT AND/OR IMPROPER OPERATION MAY RESULT.

DESCRIPTION

The TME-8 Hi/Lo is a programmable, 8-channel, crystal-controlled two band FM monitor. It is a double-conversion, super-hetrodyne receiver designed for use in the narrow band FM channels of the public service communications VHF bands. Police, fire, civil defense, and radio telephone are just a few of the numerous services included in the bands that cover 148-174 megahertz and 30 to 50 megahertz.

This eight channel unit can be programmed internally for any combination of High band (148-174 MHz) to Low band (30-50 MHz) frequencies. Original programming has the first four channels wired for the Low band and the last four channels wired for the High band.

Any combination of one to eight channels can be scanned automatically. Push button controls permit the listener to monitor only those channels of immediate interest, or all eight if he so desires. Manual selection of channels is also provided in case the listener wants to continuously monitor a particular channel.

The TME-8 utilizes silicon transistors throughout for dependability. The use of six Integrated Circuits provides compactness and circuit reliability. A ceramic filter employed in the second I.F. ensures optimum performance in areas of the country where many of the services are very closely grouped together. The two-way power supply permits operation from either 117 VAC or 12 VDC, depending upon the power cable used.

Some extra features include: connections for an external or remote speaker and a telescopic antenna.

SPECIFICATIONS

Frequency Range

Low Band	30-50 MHz
High Band	148-174 MHz

Frequency Separation

Low Band ..... 3 MHz (maximum sensitivity)
6 MHz (usable sensitivity)

High Band..... 8 MHz (maximum sensitivity)
12 MHz (usable sensitivity)

Sensitivity

Low Band..... 0.5 microvolt for 20 DB quieting
High Band.....0.7 microvolt for 20 DB quieting

Squelch Sensitivity (Threshold)

Low Band..... 0.3 Microvolt
High Band..... 0.4 Microvolt

Selectivity..... 6 DB @ ± 7 KHz
50 DB @ ± 15 KHz

Spurious Rejection..... 50 DB

Modulation Acceptance..... ± 7 KHz

I.F. Frequencies..... 1st I.F: 10.7 MHz
2nd I.F: 455 KHz (ceramic filter)

Scanning Rate..... Approx. 15 channels per sec.

Audio Output.....3 Watts @ 5% or less distortion;
5 Watts maximum

Power..... 105-130 VAC, 60 CPS @ 17 watts maximum
12-15 VDC @ 12 watts maximum

INSTALLATION

117 VAC Installation:

Plug the AC power cable into any 117 VAC, 60 CPS receptacle. The TME-8 needs very little ventilation; however, it is good practice to avoid excessively warm locations such as near radiators or heating vents.

For areas with moderate signal strength, the telescopic antenna will be an adequate receiving antenna. Insert it through the hole in the cabinet and screw it onto the 6-32 bolt projecting upward.

In areas of low signal strength, it may be necessary to use a better antenna system for proper reception. An antenna, such as a ground-plane dual band type, mounted as high above the ground as practical will greatly increase the signal strength.

For proper input matching, 50Ω lead-in coaxial cable such as RG 58/U should be used. A Motorola type antenna plug (Cinch-Jones No. 13B or H.H. Smith No. 1200) will have to be installed on the receiver end of the cable in order to utilize the antenna connector located on the rear (back) panel of the unit.

An external (or remotely mounted) speaker can be used by first opening the link between terminals #3 and #4. Then, connect one lead of the external speaker to terminal #1 and its other lead to terminal #4. A 3 to 4Ω speaker is recommended for optimum performance.

Mobile (12 VDC) Installation: (Optional)

NOTE: Mobile reception of a POLICE frequency by UNAUTHORIZED personnel is ILLEGAL in some areas. It is the responsibility of the person making the installation to be sure that the user of this receiver is authorized or cleared through the local police department. Under no conditions can Regency Electronics, Inc., the manufacturer of this set, be held responsible for its unauthorized installation or use.

The TME-8 receiver may be used in any car, truck, boat, etc. that has a 12 VDC negative ground system. Regency part no. 102-359 (an accessory item) should be used for this purpose. The red lead, with the fuse holder, must be connected to the positive terminal side of the battery. The negative or ground connection is normally made through the mounting bracket. If the mounting bracket is not fastened to the metal frame or dash of the vehicle, a separate ground wire will have to be utilized. An 18 gauge conductor, preferably stranded, should be connected to terminal #1 on the rear panel and ran to the nearest negative or ground point of the system.

A "mobile" dual band antenna, with a Motorola type plug on the coaxial cable, will provide suitable reception and still permit easy removal or installation of the receiver.

For a quick and even easier mobile installation, that also performs well, an accessory 12 VDC power cord with cigarette lighter plug (Regency part no. 102-360) can be used. First, plug the 4-pin connector into the unit. Second, connect the spade lug to terminal #1. Install the telescoping antenna and place the unit on the front seat of the vehicle. Plug the cord into the cigarette lighter and with the antenna fully extended, use the receiver as in normal mobile operation.

OPERATION

Programming Buttons:

NOTE: The Scan/Manual and channel switch are push on-push off type push button switches. The Channel Selector switch is a momentary, spring return push button switch.

The Scan/Manual button is pushed in for automatic scanning. To activate a particular channel (provided there is a crystal installed for that channel), the push button di-

rectly below the channel number must also be pushed in. In addition, the receiver must be squelched off for proper scanning action. Turn the squelch control counter-clockwise until all of the "noise" from the speaker is eliminated.

When the Scan/Manual button is out, the channel is selected manually. First, activate the channel you want to monitor. Then, push in the Channel Selector button. Hold the button in until the red lamp directly above the desired channel number is lighted and then release it. Thus, if the Scanner was on channel 3 and you wanted to monitor channel 5, you would depress the Channel Selector button and hold it until the channel 5 lamp was lighted. The receiver can be either squelched or unsquelched when manual channel selection is used.

NOTE: If the unit is setup for Manual Selection and then turned on, occasionally more than one channel lamp may be lighted. If this condition occurs (which may NEVER happen in your particular unit), merely depress the Channel Selector button and hold it in until only one lamp is lighted. Proceed with your channel selection as previously indicated.

Volume Control/Off-On Switch:

This control varies the audio output level for the internal speaker. It also varies the level of audio present at the external speaker connection. Clockwise rotation of this control turns the receiver on and increases the volume.

Squelch Control:

This control eliminates background noise in the absence of a signal. Full clockwise rotation removes all squelch action. Turning this control counter-clockwise until the noise disappears permits the receiver to be "quiet" until an actual signal is received.

Crystal Installation and Band Programming:

Due to the numerous frequencies or channels involved, the crystal is not normally installed by the factory, but by the seller or owner of the unit. Minature, plug-in crystals are simply installed by inserting them in the receptacles on the circuit board. Because of the accuracy required, Shepherd Industries' crystals are recommended. They are usually available at the source from which the radio was purchased. Specify exact frequency.

For good sensitivity, the channel frequencies specified should be within ± 3 megahertz of 39 MHz frequency for the Low band and within ± 4 megahertz of 156 MHz for the High band. However, for channel frequencies outside of these ranges, the unit will still operate, but with some loss in sensitivity. These ranges can be moved up or down in the bands, in which case the RF section of the receiver would have to be realigned.

If desired, the crystals may be purchased from other manufacturers. The following information must be included in the order.

A. Low Band Crystals

1. Crystal frequency, determined as follows:
   = channel frequency + 10.7 MHz

   Example:
   Crystal frequency = 39.5 MHz + 10.7 MHz = 50.2 MHz
2. Frequency tolerance of .002%
3. 3rd overtone; series resonance — 450 Hz
4. Maximum impedance of 35 ohms.
5. Holder is an HC-25/u with pin leads (plug-in type).

B. High Band Crystals

1. Crystal frequency, determined as follows:
   Crystal frequency = $\frac{\text{channel frequency} - 10.7 \text{ MHz}}{3}$

   Example:
   Crystal frequency =
   $\frac{155.55 \text{ MC} - 10.7 \text{ MHz}}{3} = \frac{144.85 \text{ MHz}}{3} = 48.2833 \text{ MHz}$

2. Frequency tolerance of .001%
3. Series resonance - 450 Hz; 3rd overtone.
4. Maximum impednace of 35 ohms.
5. Holder is an HC-25/u with pin leads (plug-in type).

Crystal Installation:

Prior to installing a crystal, the receiver will have to be partially pulled out of its cabinet. First, remove the telescopic antenna if it is installed. Second, remove the two knobs (volume and squelch). Third, remove the rear panel (cover) by removing the four mounting screws. Fourth, remove the four rubber feet by unscrewing each one. The receiver may then be slid rearward from the cabinet until the crystal socket pins are accessible.

Insert the crystal in the proper socket pins as indicated on the crystal location drawing, page 11.

If the crystal inserted is for the High band (148-174 MHz), place the proper color-coded wire and socket onto the proper High band pin; if the crystal is for the Low band (30-50 MHz), place the proper wire and socket onto the proper Low band pin. Pictorial B illustrates how the band selection wires are properly connected. Pictorial C shows an example of a partially programmed board. See page 12.

NOTE: If a particular channel is not used (in other words, there is no crystal installed for that channel), the band selection wire must still be connected to either a High band pin or to a Low band pin. Thus, for proper scanner operation, all of the band selection wires MUST be connected, even though not all channels are used.

After the crystals are installed and any necessary band programming changes are completed, carefully slide the unit back into the cabinet. Screw the four feet back into place and replace the rear panel. Push the Volume and Squelch knobs back on their shafts, install the antenna, and the unit is again ready for operation.

Special Instructions for 162.55 MHz Weather Channel:

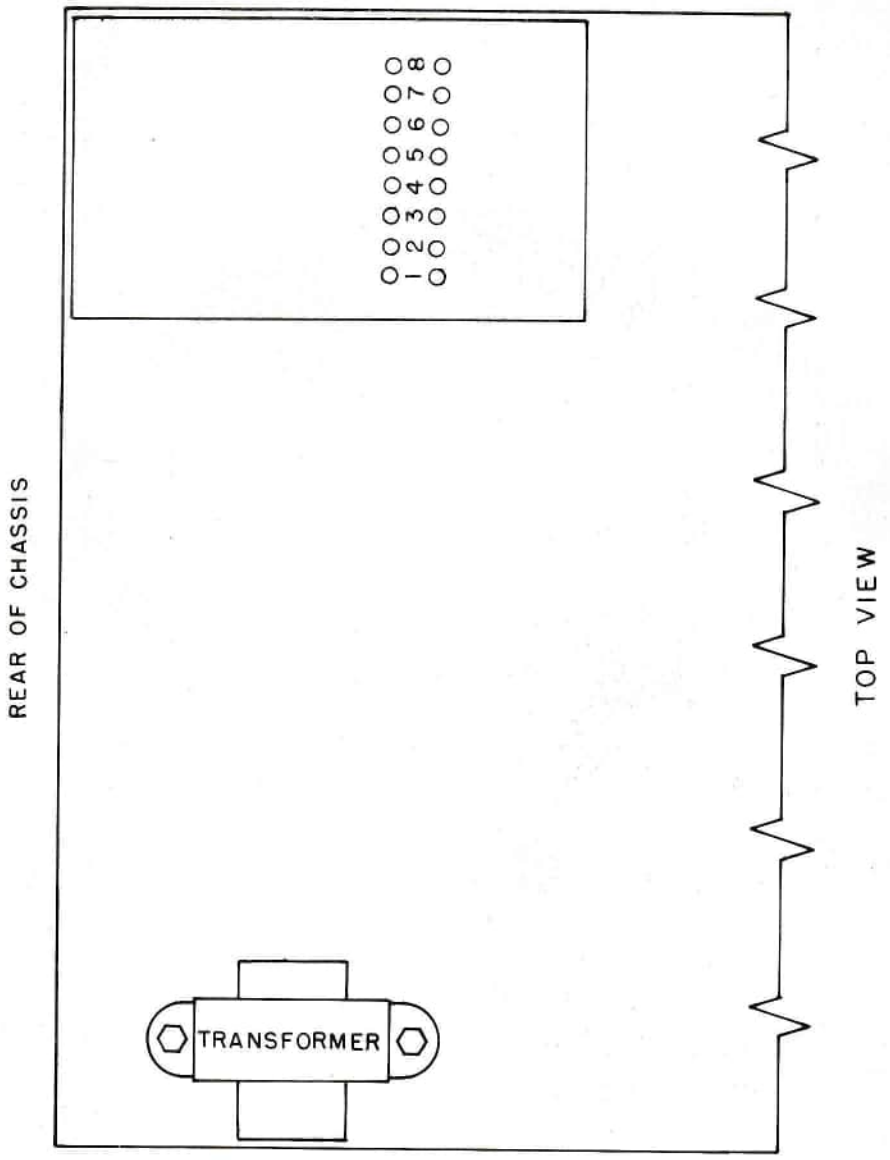
With few exceptions, all licensed transmitters in this band have been restricted to 5 KHz deviation. The TME-8 has been designed for optimum performance with the 5 KHz deviation systems.

However, the weather channel transmitters currently continue to operate at 15 KHz deviation. Until the weather channel transmitters are confined to 5 KHz deviation, monitor the weather channel (162.55 MHz) with squelch control set completely clockwise (no squelch) in order to prevent improper squelch action.

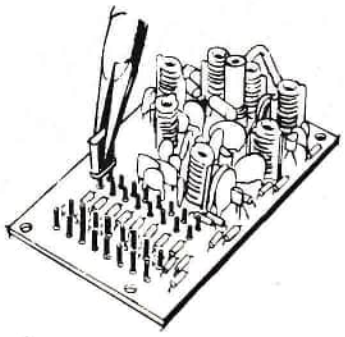
At the time the weather channel transmitters change to 5 KHz deviation, commence monitoring 162.55 MHz with normal squelch control.

The 162.55 MHz weather channel broadcasts a continuous 24 hour carrier signal. When set for automatic scan, your TME-8 will stop and remain on the weather channel un-

til manually "stepped" to another frequency. To prevent automatic locking on the weather channel, deactivate the channel by releasing the push button control for that channel to the "out" position. Then, when you want the weather report, reactivate the channel with the push button control.

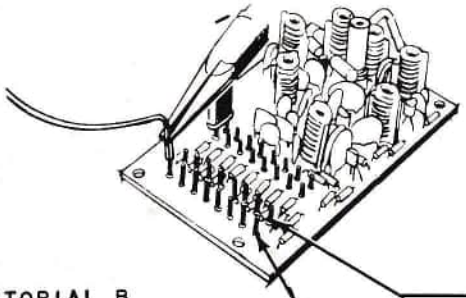


CRYSTAL LOCATION



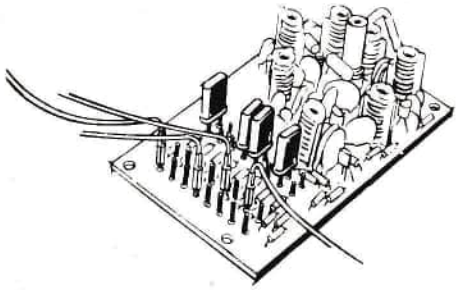
Insert crystal for high or low band frequency of your choice

PICTORIAL A



Connect lead to corresponding high or low band terminal programmer

PICTORIAL B



Repeat procedure for each channel in sequence of your choice

PICTORIAL C