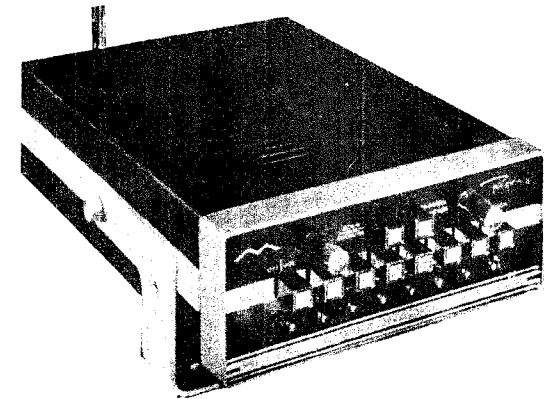


MONITORADIO RECEIVER



MODEL TMR-8H/L

INSTRUCTION MANUAL

UNPACKING

- 1 - Receiver Unit
- 1 - AC Power Cord
- 1 - DC Power Cord
- 1 - Telescopic Antenna
- 1 - Mobile Mounting Bracket
- 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 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 TROUBLE SHOOTING. DO NOT TAMPER WITH INTERNAL ADJUSTMENTS. DAMAGE TO EQUIPMENT AND/OR IMPROPER OPERATION MAY RESULT.

SPECIFICATIONS

DESCRIPTION

The TMR-8 Hi Lo is a programmable, 8-channel, crystal-controlled two band FM Monitor. It is a double-conversion, super-heterodyne 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 30 to 50 megacycles and 148 to 174 megacycles.

This eight channel unit can be programmed internally for any combination of high band (148-174 megacycles) or low band (30-50 megacycles) frequencies.

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 TMR-8 utilizes silicon transistors throughout for dependability. The use of six Integrated Circuits provides for compactness and circuit reliability. In addition, 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, a telescopic antenna, and a mounting bracket for easy installation in a car or truck.

Frequency Range	
Low Band _____	30-50 ¹
High Band _____	148-174
Frequency Separation	
Low Band _____	6 Megacyc
	Model H.L.L. 33-39 ¹
	H.T.M. 37-43 ¹
	H.L.H. 41-47 ¹
High Band _____	8MHz (maximum sensitiv 12MHz (usable sensitiv
Sensitivity	
Low Band _____	0.5 microvolt for 20DB quiet
High Band _____	0.7 microvolt for 20DB quiet
Squelch Sensitivity (Threshold)	
Low Band _____	0.3 Micro
High Band _____	0.4 Micro
Selectivity _____	6DB ± 7 50DB ± 15
Spurious Rejection _____	5
Modulation Acceptance _____	± 7
I.F. Frequencies _____	1st I.F.: 10.7 2nd I.F.: 455KHz (ceramic fi
Scanning Rate _____	Approx. 15 channels per
Audio Output _____	3 Watts ± 5%, or less, distort 5 Watts, maxi
Power _____	105-130 VAC, 60CPS ± 17 watts maxi 11-15 VDC 12 watts maxi

INSTALLATION

117 VAC Installation:

Plug the AC power cable into any 117 VAC, 60 CPS receptacle. The TMR-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 cover 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, a 50 Ω 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 #1 and #2. Then, connect one lead on the external speaker to terminal #1 and its other lead to terminal #4. A 3 to 4 Ω speaker is recommended for optimum performance.

Mobile (12 VDC) Installation:

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. or the manufacturer of this set, be held responsible for its unauthorized installation or use.

The TMR-8 receiver may be used in any car, truck, boat, etc. that has a 12 VDC negative ground system. The red lead with fuse holder must be connected to the positive terminal side of battery. The negative or ground connection is normally made through the mounting bracket. If the mounting bracket is not fastened to 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 #4 on the rear panel and run to the nearest negative or ground point of the system.

A "mobile" antenna, with a Motorola type plug on the 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 #4. 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 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 directly above 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, momentarily, the channel Selector button. Repeat pushing in the Channel Selector button until the red lamp directly below the desired channel number is lighted. Each time the Channel Selector button is pushed in, the Scanner moves over one channel. Thus, if the Scanner was on channel 3 and you wanted to monitor channel 5, you would depress the Channel Selector button two times. The receiver can be either squelched or unsquelched when manual channel selection is used.

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/owner of the unit. Minutaur plug-in crystals are simply installed by inserting them in the receptacles on the circuit board. Because of the crystal accuracy required, Shepherd Industries 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 megacycles of the pre-tuned center frequency for low band and within ± 4 megacycles of 156MHz for high band. However, 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 band, 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 + 10.7MC

Example:

$$\text{Crystal frequency} = 39.5\text{MC} + 10.7\text{MC} = 50.2\text{MC}$$

2. Frequency tolerance of .002%
3. Series resonance - 450 cycles; 3rd overtone
4. Maximum impedance of 35 ohms
5. Holder is an HC-25/u (plug-in type)

B. High Band Crystals

1. Crystal frequency, determined as follows:
Crystal frequency = channel frequency - 10.7MC

Example:

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

2. Frequency tolerance of .001%
3. Series resonance - 150 Hz/3rd overtone
4. Maximum impedance of 35 ohms
5. Holder is an HC-25 (plug-in type)

Prior to installing a crystal, the receiver's cover will have to be removed. To remove the cover, first remove the telescopic antenna if it is installed. Second, unscrew the two large bolts located at the sides of the unit. The cover may then be slipped off by sliding it toward the rear of the unit.

Also, to lessen the possibility of causing damage to the unit, the speaker should be removed. Unscrew the two small metal screws (one located on each side) holding the speaker brackets in place. Then carefully place the speaker assembly along side of the unit.

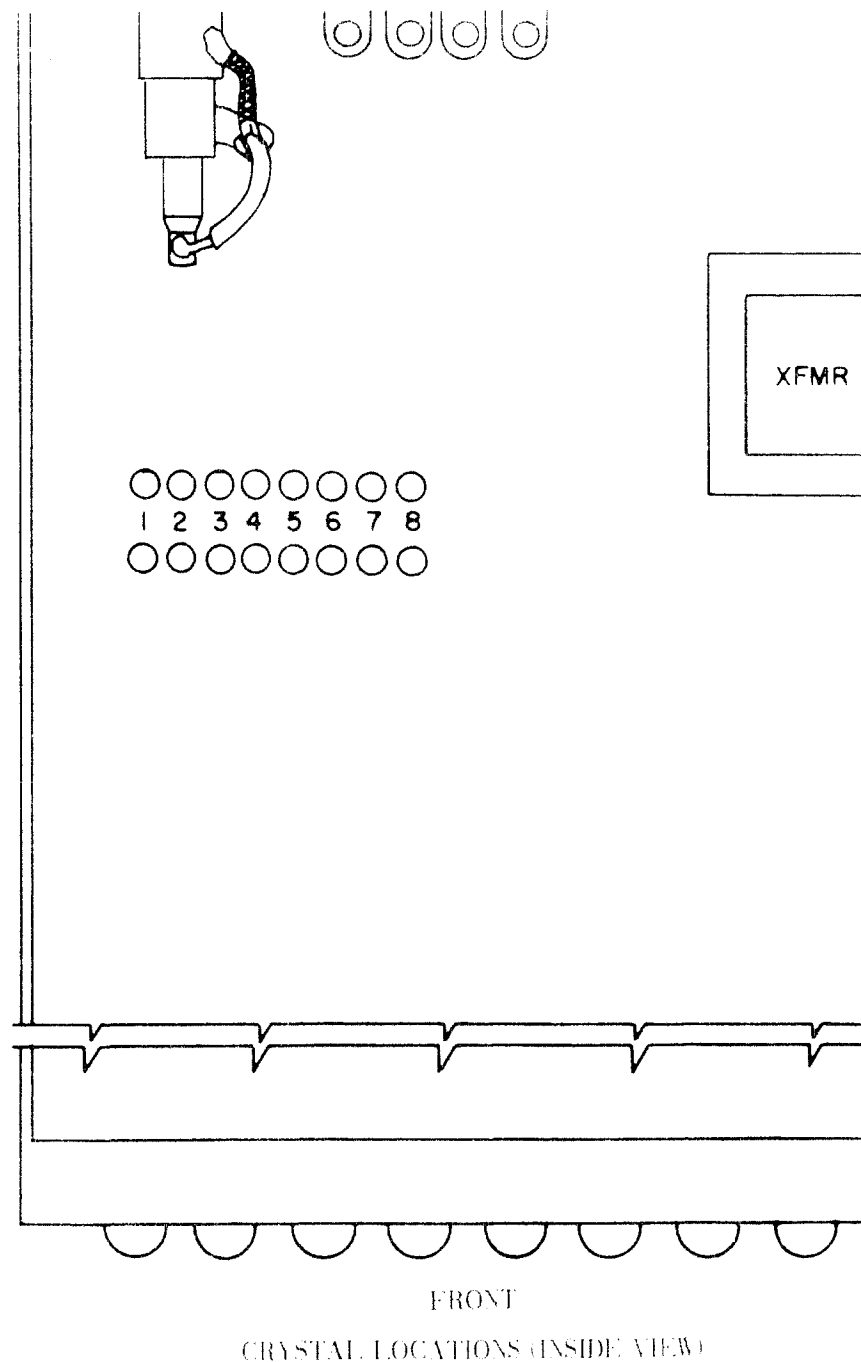
Insert the crystal in the proper socket pins as indicated on the crystal location drawing, page 9.

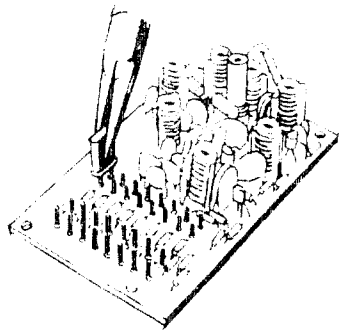
If the crystal inserted is for the High band (148-174 MHz), place the proper color-coded wire and socket onto the proper High band pin; if the crystal is for the Low band (30-50 MHz), place the proper wire and socket onto the proper Low band pin. Pictorial B illustrates how the band selection wires are properly connected. Pictorial C shows an example of a partially programmed board. See page 10.

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.

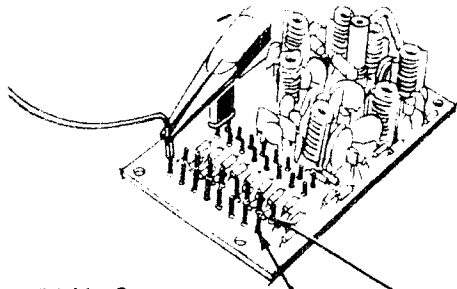
Reinstall the speaker assembly and the cover.





Insert crystal for high or low band frequency of your choice.

PICTORIAL A

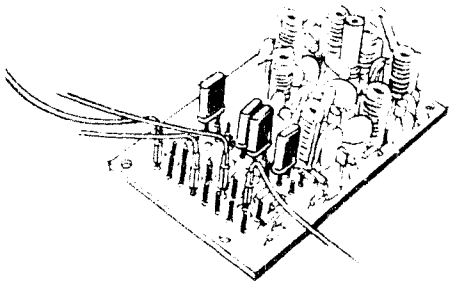


Connect lead to corresponding high or low band terminal programmer.

PICTORIAL B

HIGH BAND

LOW BAND



Repeat procedure for each channel in sequence if your choice.

PICTORIAL C