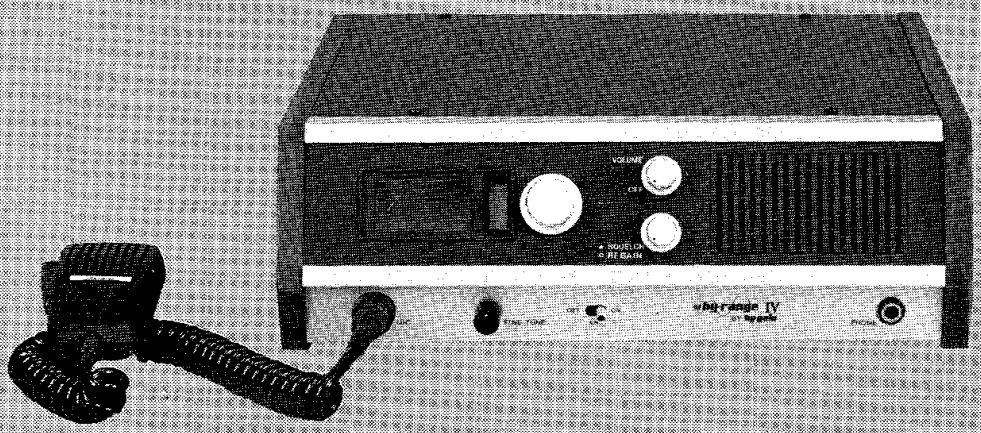
hy-range IV
BY hy-gain

23-CHANNEL
SOLID STATE 5-WATT MOBILE
CITIZENS TWO-WAY RADIO



MODEL 673B

INSTRUCTION MANUAL

General Description

Your Hy-Range Model IV is a full 23-channel transceiver designed and licensed for Class D Citizen Band operation as designated by the Federal Communications Commission (F.C.C.).

The Hy-Range IV is completely solid state compact unit of high reliability and low power consumption. This transceiver utilizes a highly advanced, unique system of frequency synthesization enabling immediate operation on all 23 channels without the need of additional crystals or adjustments. Additional features include an ANL (Automatic Noise Limiter) switch to reduce undesirable noises.

The Hy-Range IV transceiver is designed to operate from 120/240 VAC 50/60 Hz. To obtain the best results from your transceiver, it is suggested that you read all the instructions contained in this manual.

FRONT PANEL

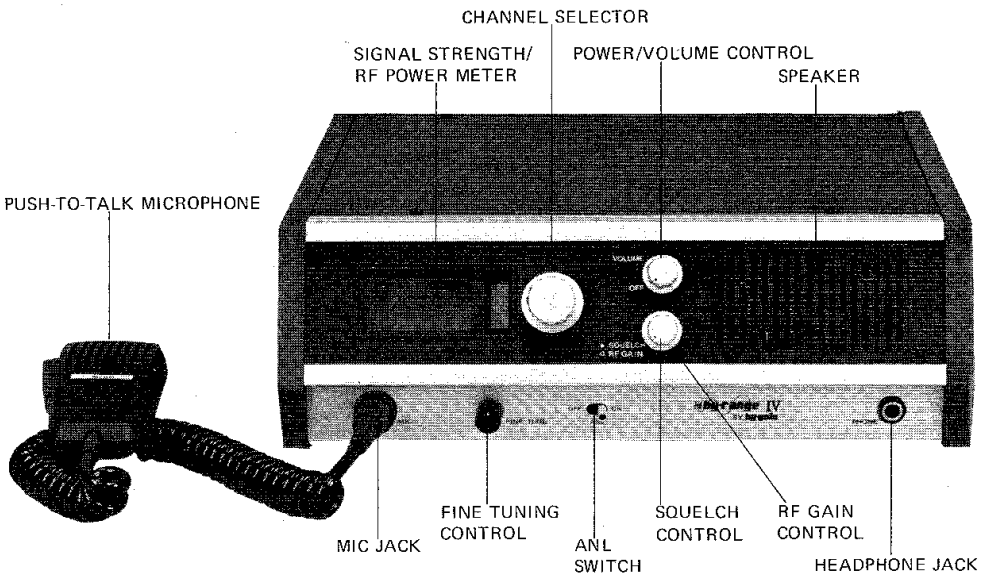


FIGURE 1

REAR PANEL

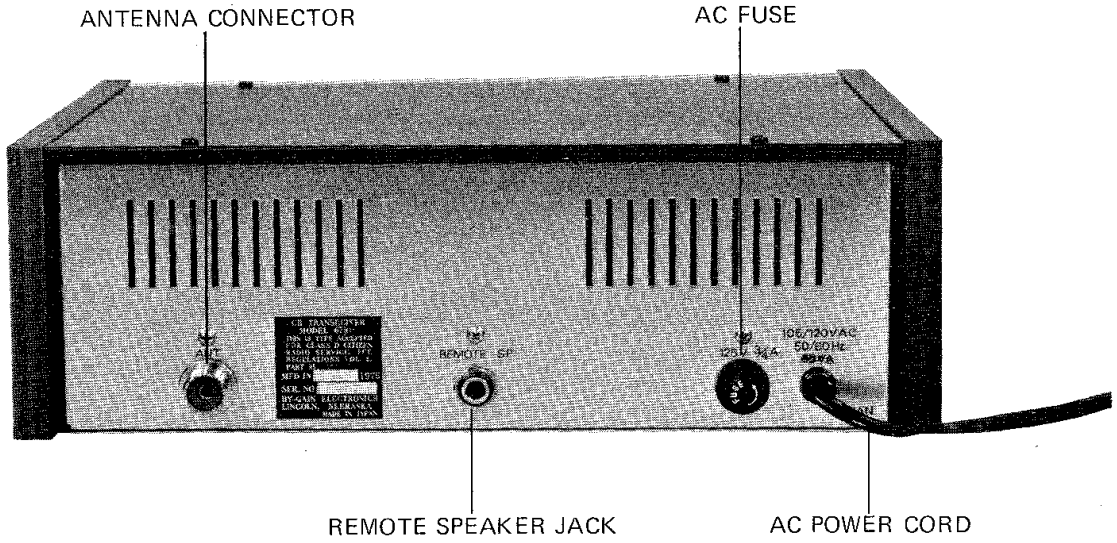


FIGURE 2

Specifications

CB Receiver Section

Circuit type	dual conversion superheterodyne with RF stage and 455 kHz ceramic filter
Frequency	23 crystal-controlled channels in the 27 MHz Citizens Band
Sensitivity	0.7 μV for 10 dB (S + N)/N ratio
IF frequency	1st IF: 11.275 MHz 2nd IF: 455 kHz
Audio output	3 watts maximum
Receiving current drain	about 14 VA on Standby (no signal)

CB Transmitter Section

Frequency	23 crystal-controlled channels in 27 MHz Citizens Band
Power input	5 watts
RF Power output	4 watts
Emission	8A3
Spurious response rejection	all harmonic and spurious suppression better than Federal Communications Commission and Department of Communications (DOC) requirements
Modulation	AM, 90% typical
Range boost	yields high average modulation at average voice levels.
Transmitting current drain	less than 45 W
Antenna	nominal 50 ohms impedance
Power source	120/240 VAC 50/60 Hz

Licensing your Citizens Two-way Radio in the United States

NOTICE: It is illegal to transmit with this transceiver until you obtain your citizens two-way radio Class D license. You are also required to read and understand Part 95 of the Federal Communications Commission rules and regulations before operation of this unit. License application Form 505 is packed with your transceiver and Part 95 of the regulations may be available from your dealer; if not, you may obtain copies from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

It is also prohibited by the F.C.C. to adjust the transmitter circuit of this unit unless you hold a current First or Second Class Radiotelephone License.

We recommend that you refer all servicing of any Hy-Gain products to your nearest Hy-Gain warranty service center or consult your Hy-Gain dealer or distributor for the service center location nearest you. Do not tamper with any internal adjustments or settings - - such tampering can adversely affect the performance of your transceiver or may, in fact, cause your unit to operate beyond the limitations set forth for Class D citizens two-way transceivers by the F.C.C.

Use of Controls

Power/Volume switch.

To turn the power on, rotate the knob clockwise. Further rotation will increase the sound output from the speaker. To turn the power off, rotate the knob counterclockwise until the click is heard indicating the power is turned off from the power supply.

Squelch Control.

This control is used to eliminate annoying background noise at no signal. To adjust the squelch control properly, first turn the knob counterclockwise until background noise is heard. Then, rotate the knob slowly clockwise until the background noise just disappears. At this point, the receiver will be relatively quiet under no signal conditions, but an incoming signal will overcome the squelch action and be heard. Since this control is variable, it can be used to provide varying degrees of sensitivity to incoming signals. As the control is advanced from the extreme counterclockwise position the squelch action is progressively increased and stronger signals are needed to overcome it. To receive extremely weak signals or to disable the squelch circuit, simply turn the control fully counterclockwise.

Fine Tuning.

This will be used for clear reception of stations that are slightly off frequency. Rotate the knob for clearer reception.

ANL (Automatic Noise Limiter) Switch.

This switch, when placed in ON position, reduces undesirable noises. Place the switch in ON position when the unit is used in noisy areas.

Phone Jack.

Use a headphone for private listening. Inserting the headphone plug silences the internal speaker automatically.

MIC Jack.

Connect the push-to-talk microphone or the optional telephone handset.

RF Gain.

This controls RF gain when receiving. To increase RF gain (reception sensitivity) turn the knob clockwise and to decrease turn counter-clockwise.

Channel Selector.

Continuously rotating switch selects any one of 23 channels for transmit and receive operation.

Signal Strength/RF Power Meter.

During reception, the built-in meter provides a relative indication of signal strength in "S" units on the lower scale and offers a comparison between one incoming signal and another.

During transmit, this will provide an indication of antenna RF power on the upper scale. As you speak, the pointer should "flicker" slightly, indicating that you are modulating the RF carrier.

AC Power Cord.

Connect the power cord plug to the AC outlet supplying 120 VAC, 50/60 Hz.

AC Power Fuse.

When replacing the fuse always use the same type fuse, 125 V, 3/4 A.

Remote Speaker Jack.

This will be used to control the built-in speaker when operating the transceiver with the optional telephone handset connected.

Installation

Location

Before installing the transceiver, choose the location which is protected from moisture and excessive heat, and is convenient to operate.

Power Connection

This transceiver is designed to operate from 120/240 VAC, 50/60 Hz. The unit is supplied wired for 120 VAC operation. For 240 VAC operation please consult your dealer. Connect the power cord to an AC outlet supplying 120 VAC.

Antenna Connection

The antenna should be connected to the transceiver by means of coaxial cable. Either RG-58/u or RG-8/u coaxial cable may be used. The cable should be terminated with a PL-259 coaxial connector. Screw the PL-259 coaxial connector onto the antenna jack.

Caution :

Do not try to transmit without an antenna connected to the transceiver.

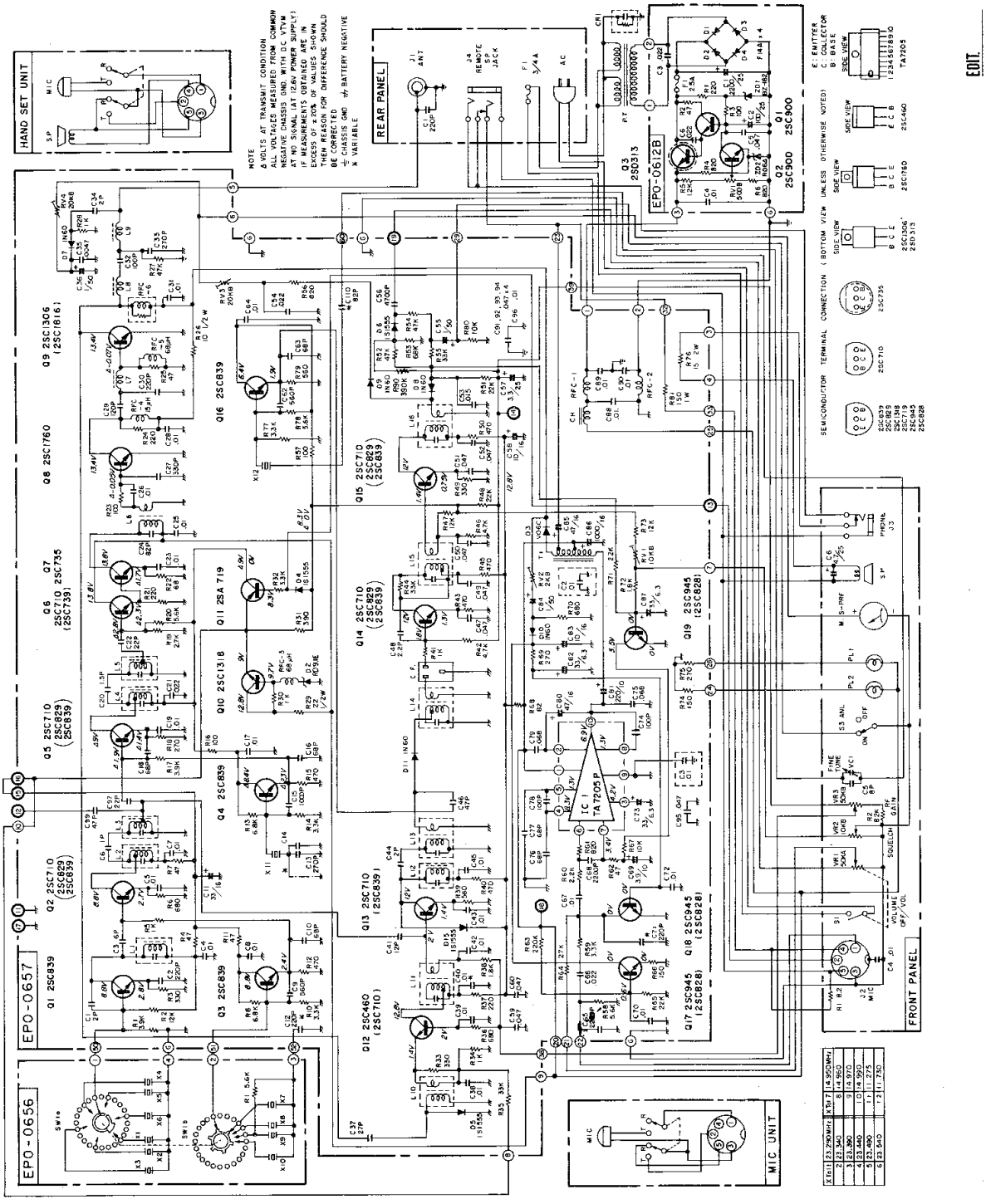
Operation Procedure

CB Transmitter Operation

IMPORTANT: Do not try to transmit without a CB antenna connected to the antenna connector on the rear panel.

1. Connect the microphone to the microphone socket.
2. Turn channel selector to a desired channel.
3. Depress the push-to-talk button on the microphone. Hold the microphone 4 to 6 inches from the mouth. Speak at a normal level. During periods of transmission, the receiver is silenced and reception is therefore impossible. In the same way, your signal can not be heard by another station when he is transmitting. Each must take turns.
4. To receive, simply release the microphone push-to-talk button.

SCHEMATIC DIAGRAM OF MODEL 673B



SERVICE INFORMATION

Warranty Repair

If your receiver should need servicing under the warranty, contact your Hy-Gain dealer for the Hy-Gain Service Center nearest you. Please contact the Service Center before shipping your transceiver to him. All equipment returned for warranty repair must be accompanied by your sales slip or invoice, or a copy of either.

Units that have been modified cannot be accepted for repair.

How to Ship Returns

Include all information requested by the Service Center. Then pack the unit as follows:

Check the unit to see that all parts and screws are in place. Then wrap it in heavy paper or put it in a plastic bag. If the original carton is not available, place the unit in a strong carton that is at least six inches bigger in all three dimensions than the unit. Fill the carton equally around the unit with resilient packing material (shredded paper, excelsior, etc.). Seal it with gummed paper tape, tie it with a strong cord, and ship it by prepaid express, United Parcel Service, or insured parcel post to the Hy-Gain Service Center.

It is very important that the shipment be well-packed and fully insured. Damage claims must be settled between you and the carrier and this can delay repair and return of the unit to you.

Purchase of Parts

Parts can be purchased from the factory Customer Service Department. All parts orders must be prepaid or COD. When ordering, please supply the following information:

1. model number of the unit
2. serial number of the unit
3. description of the part
4. part number. (if available)

Address your letter to:

Hy-Gain Warranty
Service Department
4900 Superior Avenue
Lincoln, Nebraska 68505
Attn: National Service Manager

90-DAY LIMITED WARRANTY

Hy-Gain Electronics Corporation warrants all products manufactured by it and bearing Hy-Gain model numbers to be free from defective material and workmanship under normal use and service and agrees to repair such products. If investigation discloses the defect to be the fault of our manufacture. Hy-Gain's obligation under this warranty is limited to repairing any such product which, upon our examination, proves to be so defective. All products repaired under such warranty must be returned to the Hy-Gain factory, transportation prepaid by the purchaser, within ninety days from the date of purchase. . 9

This warranty applies only to the original purchser. Upon receipt of equipment, the buyer is responsible for checking the contents for damage. Any shipping damage should be referred to the carrier.

This warranty does not apply to any Hy-Gain products which have been repaired, worked on, or altered by persons not authorized by Hy-Gain to do so, or products to which the repair has injured the stability or reliability of such product, or which has been the subject of mis-use, negligence, or accident, or the serial number of which has been removed, altered, effaced, or in any other way rendered unidentifiable. Neither does this warranty apply to any of our products which have been connected, installed, used, or otherwise adjusted other than in accordance with instructions furnished by Hy-Gain. Nor does Hy-Gain Electronics Corporation assume any liability for consequential damages, and in any event, our liability shall in no case exceed the original purchase price of the product.

Accessories supplied by, but not manufactured by Hy-Gain Electronics Corporation, shall carry only such warranty as is available from the manufacturer of such goods and are specifically excluded from Hy-Gain warranties.

This warranty is void if Hy-Gain shall inspect equipment and find that it has been modified, or improperly installed or used. This warranty is expressly in lieu of all other warranties. Expressed or implied, and all other obligations or liabilities on the part of Hy-Gain. No person, including any dealer, agent, distributor, or representative of Hy-Gain is authorized to assume for Hy-Gain any liability on its behalf, or in its name, except to rerer purchasers to this warranty.

All claims of defect or shortage should be addressed to:

Warranty Service Department
Hy-Gain Electronics Corporation
4900 Superior Avenue
Lincoln, Nebraska 68505

You must mail the warranty card in immediately. Then, in making a claim, you need only furnish the model and serial numbers of the unit. However, if for some reason the card was not mailed, a copy of a document, such as a sales receipt, recording the date, place, and proof of purchase may, at the discretion of the service department, serve to establish your warranty. Your warranty claim letter should include all pertinent details, along with the part or item numbers involved. Do not return anything until requested to do so. You must supply the above information.

Any returned items must have prior authorization. Unexpected returns are greatly delayed in handling. These delays can be avoided by writing in advance, furnishing the necessary information.

Hy-Gain reserves the right to make changes in design and improvements on its products without assuming any obligation to install the same on any of its previously manufactured products. Further, Hy-Gain reserves the right to ship new and/or improved products which are similar to the form, fit, and function of products originally ordered.

hy-gain DE PUERTO RICO

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