OPERATING MANUAL

HMV ROADHOUND

18 Channel SSB/AM

MOBILE CB TRANSCEIVER TX77

Designed to Australian specifications

FRONT PANEL

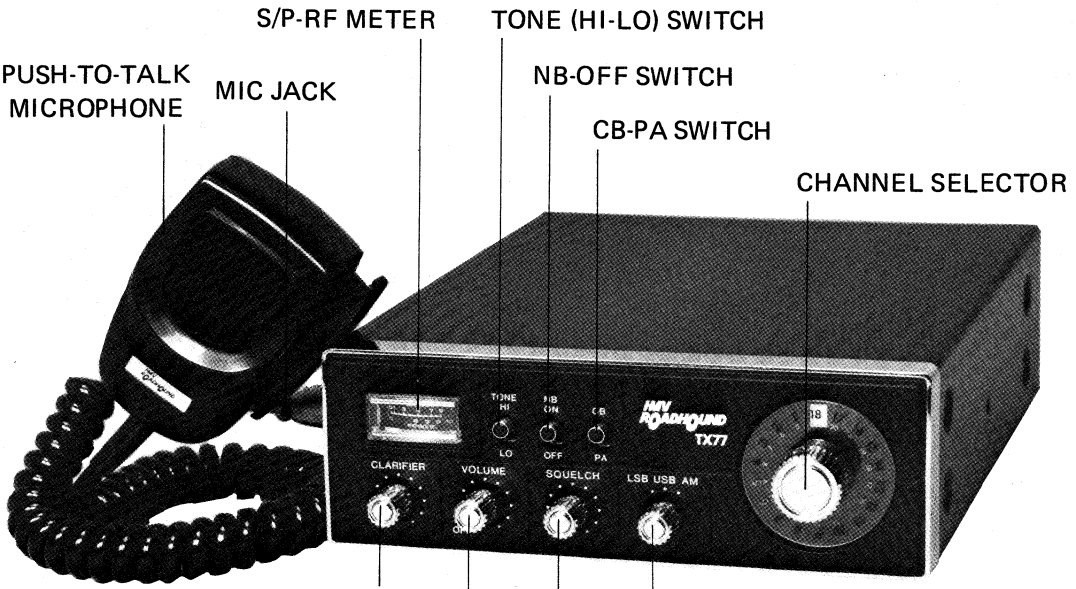
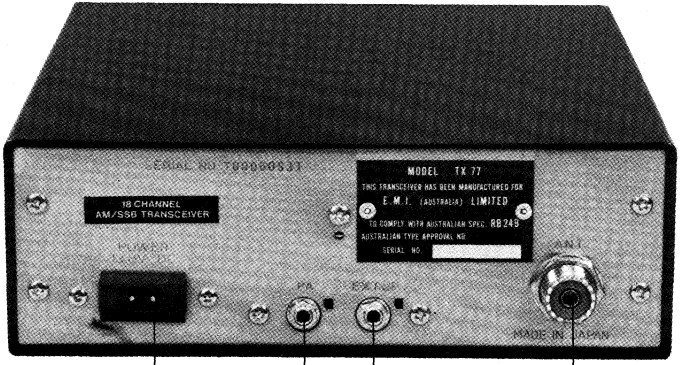


Figure 1.

REAR PANEL



DC POWER CONNECTOR

PA SPEAKER JACK

EXTERNAL SPEAKER JACK

ANTENNA CONNECTOR

Figure 2.

FOREWORD

The HMV Roadhound Model TX-77 is a solid state two-way radio designed and built for licensed C.B. operation assigned by the Australian Postal and Telecommunication Department. You are required to read and understand Licensing Conditions RB14, and to fill out form RB13 to obtain a license prior to operation of this transceiver.
It is the user's responsibility to see that this transceiver is operating at all times in accordance with the Australian Postal and Telecommunication Department rules and regulations.
Do not attempt to make transmitter tuning adjustments to the transceiver as the transmitter's adjustments have been carefully made in the factory to conform to Australian Standards.

GENERAL DESCRIPTION

The TX-77 is a unique, all solid state, professional quality of SSB/AM transceiver providing 18PLL (phase locked loop) synthesizing system controlled channels on Citizens Band of 27.015 to 27.225 MHz. This transceiver has also many features such as variable Clarifier control, 3 function Mode switch, Tone change switch, Noise Blanker circuit and useful Public Address amplifier system. These make the TX-77 very easy to use and most reliable.

OPERATING CONTROLS AND SWITCHES

VOLUME/POWER SWITCH

This turns the power on or off. To turn the power on, rotate the knob clockwise; to turn power off, rotate the knob counter clockwise until a click is heard. Turning the knob clockwise increases the volume from the built-in speaker. This volume does not affect the transmit power.

SQUELCH CONTROL

This silences undesirable background noise when no signal is received. The squelch level can be varied by adjusting the control knob. Usually this will be done as follows:

1. Turn the power on and rotate the VOLUME knob until a background noise is heard.
2. Rotate the SQUELCH control knob clockwise until the background noise disappears.
3. Now you can receive signals without annoying background noises. However, rotating the squelch control too far clockwise decreases reception sensitivity and a very weak station would not be received. Therefore, when you want to communicate with such a station, rotate the SQUELCH control all the way counter clockwise.

CB-PA SWITCH

This selects the mode of operation. For normal CB operation, place the switch in the CB position and place in the PA position when using the transceiver as a Public Address Amplifier.

CHANNEL SELECTOR	This selects one of the 18 channels required.
MODE SWITCH	This selects mode of operation; Lower Sideband (LSB), Upper Sideband (USB) and AM.
NB-OFF SWITCH	In NB ON position, this reduces pulse type noise such as ignition interference.
CLARIFIER	During AM operation, place the control in the "12" o'clock position. However, if a station received is not clear, adjust the control for clearer reception. During SSB operation, this control operates as a voice clarifier; also rotate the control for clearer voice reception.
S/P-RF METER	This indicates incoming signal strength when receiving, and transmitting RF power output when transmitting.
TONE (HI-LO) SWITCH	This changes tonal quality in reception. Placing the switch in the HI or LO position boosts treble or bass sound, respectively.
MIC JACK	This accepts a 4-pin plug from the Push-to-Talk Microphone supplied with the unit.
PA JACK	When you operate the transceiver as a simple Public Address Amplifier, connect a PA speaker of 8 — 16 ohm impedance to this jack.

EXTERNAL SP. JACK

This jack is used for an external speaker (8 – 16 ohms) connection. When the plug is inserted into this jack, the built-in speaker is automatically silenced.

ANTENNA CONNECTOR

This accepts a standard PL-259 type coaxial antenna connector which should be connected to the antenna cable end.

PUSH-TO-TALK BUTTON

The CB receiver and transmitter are controlled by the Push-to-Talk button on the side of the microphone.

DC POWER CONNECTION

The Model TX-77 is designed to be used in a 12 volts DC, either negative or positive ground system. If you are unsure of your vehicle's polarity, ask your dealer or local service station.

First, simply connect the power cable (supplied) to the Power connector on the rear panel.

NEGATIVE GROUND CONNECTION: The red wire from the unit is positive and may be connected directly to the positive (+) battery terminal or to a fuse block or ignition switch or other convenient point.

The black wire is negative or ground and should be connected to a metal part of the vehicle frame or body or (–) battery terminal.

POSITIVE GROUND CONNECTION: The red wire from the unit should be connected to a metal part of the vehicle frame or (+)

battery terminal. The black wire from the unit should be connected directly to the negative or (—) battery terminal or other convenient point.

To insure proper operation, care should be taken in attaching the transceiver and mounting bracket to the car in such a way as to obtain good ground connection at this point.

ANTENNA CONNECTION

Connect your antenna system to the coaxial antenna connector of the rear panel, using 50 ohm coaxial cable with PL-259 male and female coaxial connectors attached to the cable ends.

There is a great variety of antenna system, but for maximum efficiency, a 50 ohm impedance antenna is recommendable, since this unit is designed to match 50 ohm load (antenna). For further information on CB antennas that meets your specific needs, please consult your dealer from which you punchased the unit.

The antenna should be mounted as high as possible for longer communication range.

IMPORTANT: DO NOT ATTEMPT TO TRANSMIT WITH NO ANTENNA OR AN IMPROPER ANTENNA CONNECTED. A GREAT AMOUNT OF ANTENNA REFLECTION LOSSES WILL BE CAUSED AND THIS MAY GIVE UNDESIRABLE EFFECT ON THE RF POWER TRANSISTORS.

OPERATION

MAKE SURE YOUR ANTENNA SYSTEM IS CONNECTED TO THE ANTENNA CONNECTOR ON THE REAR PANEL. DO NOT OPERATE THE TRANSCEIVER WITHOUT CONNECTION OF YOUR ANTENNA SYSTEM.

A. AM Operation

1. Connect the Push-to-Talk microphone to the MIC jack.
2. Place the CB-PA switch in the "CB" position.
3. Turn the power on and increase the sound level.
4. If necessary, adjust the SQUELCH control.
5. Place the LSB-USB-AM switch in the AM position.
6. Select a channel you desire.
7. To transmit: Depress the Push-to-Talk button on the microphone and speak into the microphone at a normal voice, holding the microphone 3 to 6 inches from the mouth. Do not shout or move the microphone too close to your mouth.
8. To receive: simply release the Push-to-Talk button.
9. If necessary, adjust the CLARIFIER control, or place the NB switch in ON position for clearest reception.

B. SSB Reception

1. Turn the power on and rotate the VOLUME control to a proper sound level.

2. Temporarily place the LSB-USB-AM switch in the AM position. If the signal you received is an AM signal, clear voice reception will be obtained. But if the signal produces unintelligible sound, it may be the SSB signal. First place the LSB-USB-AM switch in the LSB or USB position, where clearer voice reception is obtained. Then adjust the CLARIFIER control slowly for better voice reception.

3. If necessary adjust SQUELCH and NB controls.

C. SSB Transmit Operation

1. First select the channel you want.

2. Place the LSB-USB-AM switch in the LSB or USB position.

   NOTE: If you want to communicate with the station transmitting in a mode of LSB (or USB), your transceiver must be set in the same mode LSB (or USB) of operation. To identify the mode of operation (LSB or USB) being transmitted, temporarily try to receive the station as stated under SSB reception (Paragraph "B" above).

3. To transmit depress the Push-to-Talk button on the microphone and speak into the microphone as stated in the step 7 under AM operation.

4. To receive, simply release the Push-to-Talk button.

When using the transceiver as a public address amplifier;

1. Connect a PA speaker (8 — 16 ohms) to the PA jack on the rear prnel.
2. Place the CB-PA Switch in the PA position.
3. Turn the power on.
4. Depress the Push-to-Talk button on the microphone and speak into the microphone as in CB transmitting.

CITIZENS BAND FREQUENCY CHART

Frequency	Australian Channel	U.S. Channel
27.015MHz	1	5
27.025MHz	2	6
27.035MHz	3	7
27.055MHz	4	8
27.065MHz	5 (Emergency)	9
27.085MHz	6 (Calling)	11
27.095MHz	7	—
27.105MHz	8	12
27.115MHz	9	13
27.125MHz	10	14
27.135MHz	11	15
27.155MHz	12	16
27.165MHz	13	17
27.175MHz	14	18
27.185MHz	15	19
27.195MHz	16	—
27.205MHz	17	20
27.225MHz	18	22

SPECIFICATIONS

GENERAL

Circuitry	5 ICs, 2 FETs, 42 Transistors, 51 Diodes
Channels	18
Mode of Operation	LSB, USB and AM
Frequency Range	27.015 – 27.225 MHz
Power Source	13.8 V DC, Positive or Negative ground

AM TRANSMITTER

RF Power Output	4 W at 13.8 V DC (maximum allowed by RB249)
Modulation Level	100 % (maximum allowed by RB249)
Harmonic and Spurious Rejection	More than 60 dB down
Antenna Impedance	50-ohm

SSB TRANSMITTER

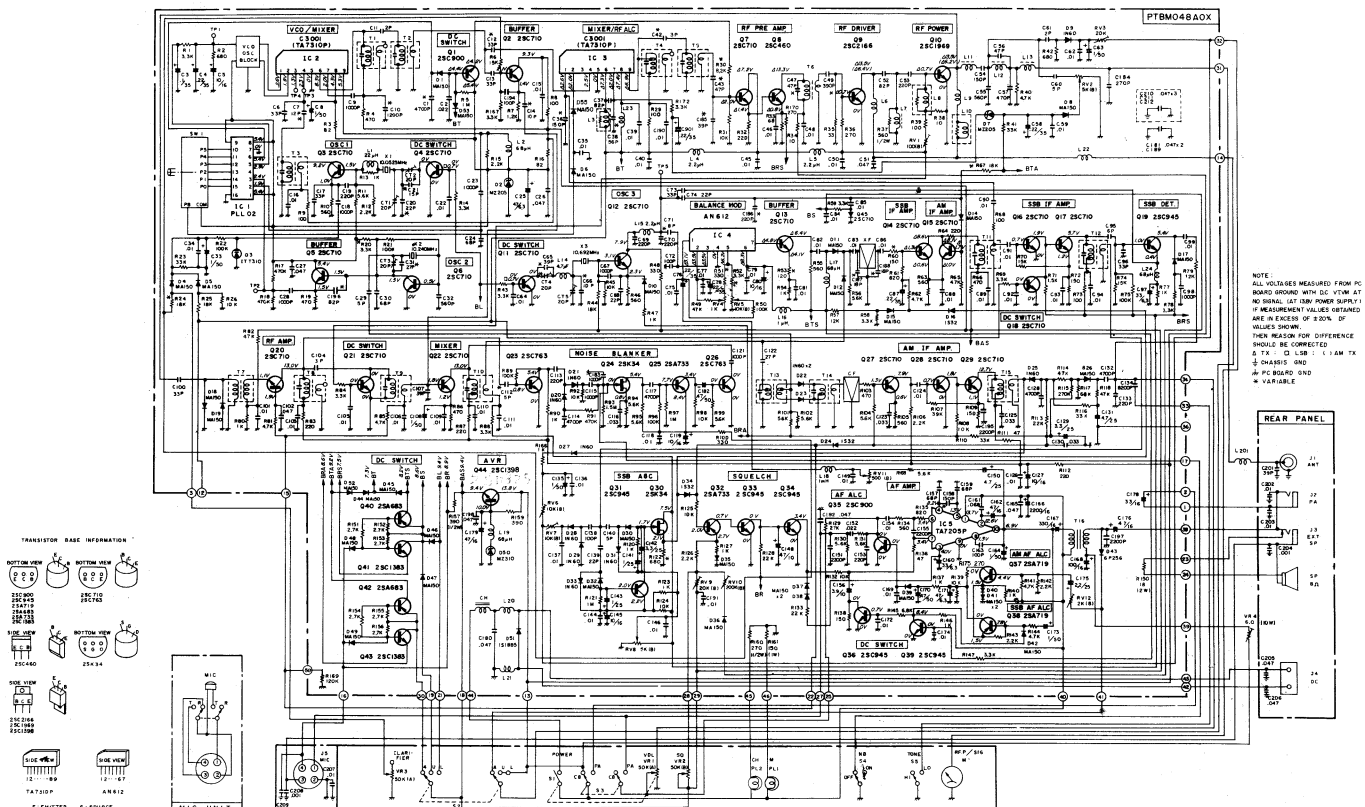
Generation Method	Double Balanced Modulator with Crystal Latice Filter
RF Output Power	12 W PEP at 13.8 V DC (maximum allowed by RB249)

Carrier Suppression	More than 40 dB down	
Unwanted Sideband Suppression	More than 60 dB down	
Harmonic and Spurious Suppression	More than 60 dB down	

RECEIVER SECTION

System	SSB:	Single Conversion Superheterodyne
	AM:	Dual Conversion Superheterodyne
Sensitivity	SSB:	0.3μV for 10 dB S/N
	AM:	1μV for 10 dB S/N
Selectivity	SSB:	2 kHz at 6 dB down
	AM:	6 kHz at 6 dB down
Clarifier	±800 Hz	
Audio Output Power	3 W for 8 ohms	
Squelch Range	0.7μV to 300μV	
Intermediate Frequency	SSB:	10.695 MHz
	AM:	1st – 10.695 MHz, 2nd – 455 kHz

SCHEMATIC DIAGRAM



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MADE IN JAPAN FOR HMV ELECTRONICS DIVISION OF EMI (AUSTRALIA) LIMITED

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