amat

294

40 CHANNEL CITIZENS BAND TRANSCEIVER

INSTRUCTION MANUAL

GENERAL DESCRIPTION

Thank you for your confidence in selecting the **294** Transceiver. We know you will find your transceiver as exciting as it is practical. We have combined superb workmanship and modern styling with the very latest start-of-art circuitry to bring you the new **294** Citizens Band Slimline Transceiver. It has been especially designed to give you maximum performance and reliability. Your **294** is completely factory aligned and quality assurance tested. To obtain the maximum benefit and pleasure from your **294** please read the contents of this manual very carefully before attempting to install or operate the transceiver.

FEATURES

CHANNEL DISPLAY: A large green LED display indicates the channel selected by rotary channel selector control.

CHANNEL SELECTOR CONTROL: An oversize channel knob makes it easy to select any of the 40 channels.

VOLUME WITH POWER ON/OFF CONTROL: Turn the unit on or off and adjust the level of sound.

SQUELCH CONTROL: Adjust this control to reduce excessive noise when no signal is being received.

CHANNEL 9 SWITCH: This switch gives instant access to the emergency channel 9.

S/RF METER: An accurate LED meter indicates RF power output and received signal strength.

TX INDICATOR: Indicate transmission.

FULL 40 CHANNEL OPERATION: PLL frequency synthesized circuitry allows transmission and reception on all 40 channels of the 27 MHz Citizens Band Radio Service.

YOUR 294 TRANSCEIVER comes complete with: P.T.T. hand microphone, D.C. lead, transceiver and microphone mounting brackets and all mounting hardware.

RECEIVER

The receiver is a sensitive and highly selective dual-conversion superheterodyne type providing crystal-controlled PLL operation on all 40 channels. The circuit incorporates a number of features designed to provide optimum reception. The receiver incorporates an effective audio stage. A ceramic filter provides sharp selectivity and high adjacent channel rejection. As a result, transmission on adjacent channels causes minimum interference. A variable squelch control is incorporated to "silence" the receiver when no signals are being received. The squelch circuit is adjustable providing varying degrees of sensitivity to incoming signals.

TRANSMITTER

The transmitter offers stable operation delivering a full 4 watts RF output. High efficiency transistors IC chips and low loss components are used for high reliability.

POWER SUPPLY

The transceiver is ready for connection to a 13.8V DC, negative ground system. DC power is provided to the transceiver by means of a fused power lead.

SPECIFICATIONS

GENERAL

1) Power Supply: 13.8 Volt DC negative ground
2) Power Connsumption: Receiver 400 mA
   Transmitter 1000 mA
3) Weight: 1 lb 6 oz
4) Dimension: 121(W)×165(D)×37(H) mm

RECEIVER

1) Sensitivity: 1 μV for 20 dB (S+N)/N
2) Intermidiate Frequency: Double Conversion Superheterodyne
   1st IF-10.695 MHz
   2nd IF-455 KHz
3) Selectivity: 6 dB at 7 KHz, 60 dB at 10 KHz
4) Audio Output Power: 1.8 Watt 8 ohm (10% THD)
5) Distortion: Less than 6 %, 1 KHz

TRANSMITTER

1) Transmitter Power Output: 4 Watts Max.
2) Modulation: 2 KHz ±0.2 (F3E)
3) Frequency Response: 300 to 2500 Hz
4) Antenna Impedance: 50 Ohms, Unbalanced

IGNITION INTERFERENCE

Normally the suppression on modern automotive engines is adequate to prevent annoying interference to your transceiver.

If it does not, consult your dealer who will recommend additional suppression measurements.

OPERATING INSTRUCTIONS

IMPORTANT **NEVER ATTEMPT TO TRANSMIT WITHOUT AN ANTENNA CONNECTED TO THE TRANSCEIVER, OTHERWISE DAMAGE MAY OCCUR TO THE OUTPUT TRANSISTORS WHICH WOULD VOID THE WARRANTY.**

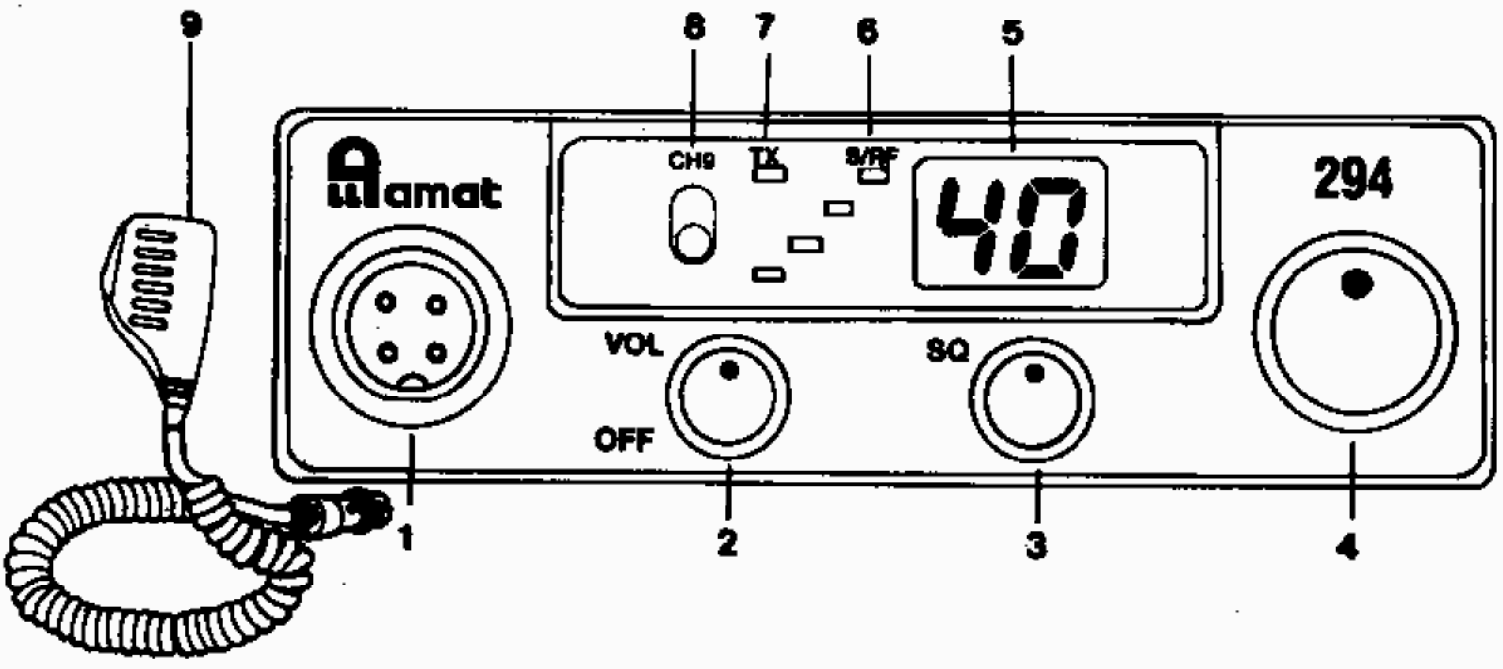
RECEIVE operating procedure

1. Turn the set on by turning the VOLUME WITH POWER ON/OFF CONTROL (2) clockwise, past click.
   NOTE: Microphone must be plugged in for receiver to operate.
2. Set the VOLUME WITH POWER ON/OFF CONTROL (2) for a comfortable audio level.
3. Listen to the background noise from the speaker. Turn the SQUELCH CONTROL (3) slowly clockwise, until the noise just disappears. The squelch is now properly adjusted. The receiver will remain quiet until a signal is received. Do not advance the control too far, as some of the weaker signals will not open the squelch.
4. Select your desired channel by tunning the Channel Selector Control clockwise (up) or counter-clockwise (down).

TRANSMIT operating procedure

1. Set the CHANNEL SELECTOR CONTROL (4) to the desired channel.
2. If the channel is clear, depress the push-to-talk button on the microphone and speak into the microphone in a normal voice.
3. When you are transmitting, the receiver is silenced and reception is therefore impossible. To receive again, simply release the microphone push-to-talk button.

Figure 1



OPERATING CONTROLS

(1) **MICROPHONE CONNECTOR:** Standard 4 pin screw-in type receptacle for push-to-talk microphone.

(2) **VOLUME WITH POWER ON/OFF CONTROL:** This control turns the unit on and off and adjusts the level of sound from the speaker. Turning the control clockwise past the click-stop position will supply power to the unit and further clockwise rotation will increase the volume from the speaker. Counter clockwise rotation will decrease the volume until the unit is turned off past the clock-STOP.

(3) **SQUELCH CONTROL:** The squelch control is designed to reduce excessive noise (such as power line interference, ignition noise, etc.) when no signal is being received. To set the squelch control, turn it fully counterclockwise and increase the volume until noise is heard. When only noise (no signal) is present, slowly turn the squelch control clockwise just to the point where the noise is blanked out. Incoming signals will now be heard but there will be no noise between transmissions.

(4) **CHANNEL SELECTOR CONTROL:** This control is selected your desired channel by tunning clockwise (up) or counter-clockwise (down).

(5) **GREEN LED CHANNEL DISPLAY:** Cleary displays the channel selected by use of the channel selector control.

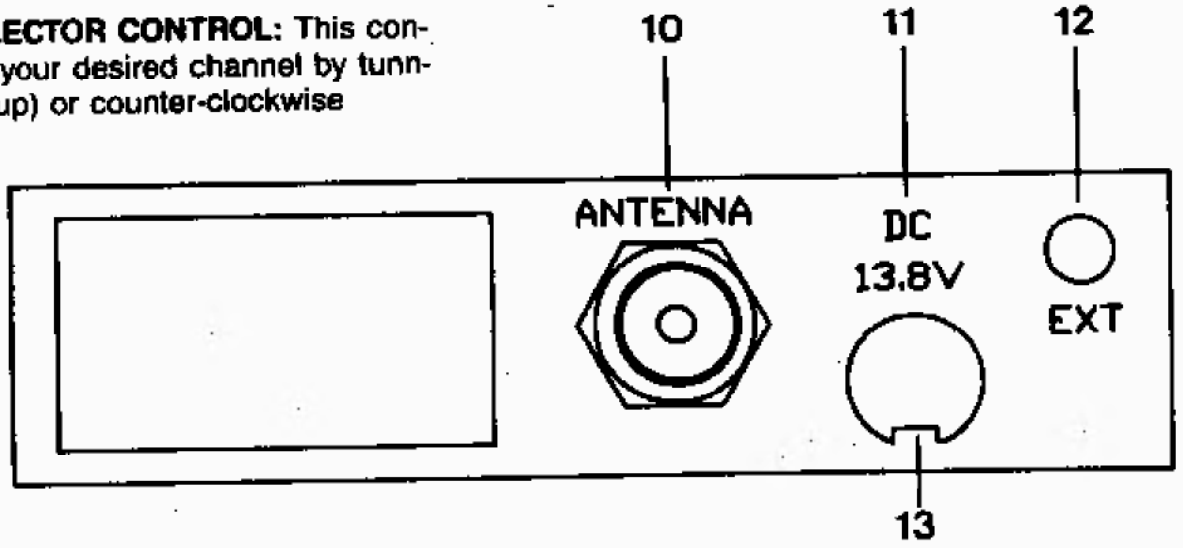
(6) **S/RF LED METER:** This highvisibility meter is used two ways. When receiving, it gives the relative strength of incoming signals. When transmitting, is shows the amount of power output of your transmitter.

(7) **TX INDICATOR:** This LED lights up when the PTT switch on the hand microphone.

(8) **INSTANT CHANNEL 9 SWITCH:** Automatically returns to last used channel, when released.

(9) **PUSH-TO-TALK MICROPHONE:** The receiver and transmitter are controlled by the push-to-talk button on the microphone, push in this switch and the transmitter is activated. Release it and the unit is in the receive mode. When transmitting, hold the microphone at an angle of approximately 45° at a distance of 1 to 2 inches from your lips and speak clearly and in a normal voice.

Figure 2



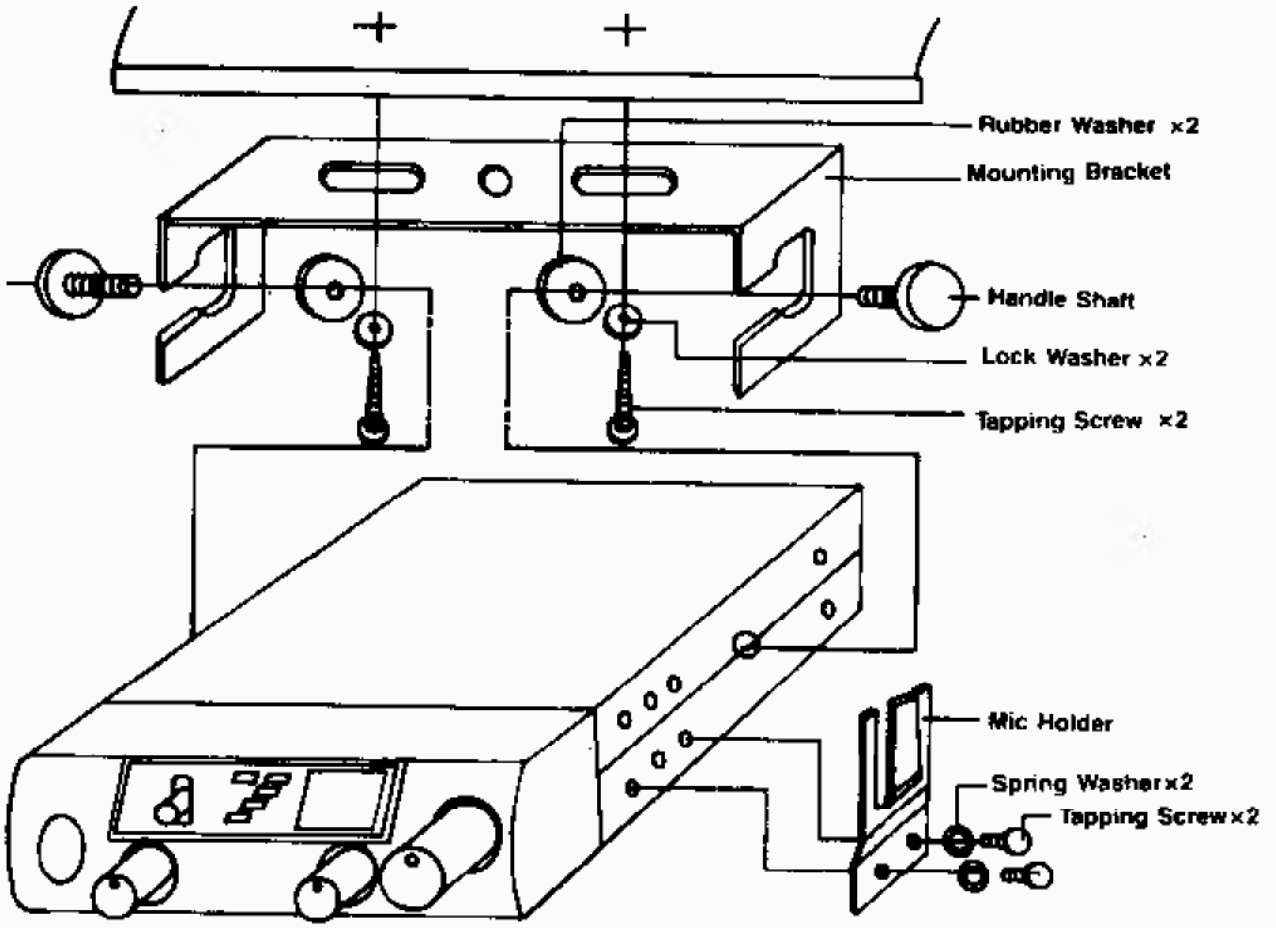
(10) **ANTENNA CONNECTION:** SO239 Socket to suit standard PL259 type antenna plug.

(11) **D.C. POWER LEAD:** For connection of 13.8 volt D.C. supply.

(12) **EXTENSION SPEAKER CONNECTION:** For connection of an external speaker or headphones (8 to 16 ohm impedance) with standard 3.5mm mini plug. Connection of a plu into this connector automatically silences th internal speaker.

(13) **2 PIN FUSED POWER CORD**

TRANSCEIVER INSTALLATION



MOUNTING

Always mount where controls are readily accessible. Unit may be mounted to the underside of the dashboard of a car, truck, etc. utilising special bracket included with transceiver. Attach bracket to the underside of dashboard using the self-tapping screws supplied. Attach the transceiver to the bracket using the two knurled securing screws at the side.
Tilt the unit to the most convenient angle before tightening securing screws.

DC POWER CONNECTIONS

The transceiver is designed to operate from a bat tery source of 10.8 to 14.4 volts DC, employing negative ground electrical systems. The fused DC power cable (11) is used to make the necessary power connection to the transceiver. Red (fused) lead is connected to the positive (+) side of the electrical system and the black lead is connected to the negative (−) side of the system.
In a negative ground vehicle, connect the Red lead to the "hot" point in the electrical system (battery positive), and the Black lead to any point connected to the vehicle chassis (battery negative).

For connection to the "hot" battery side a suitable post can usually be found on the fuse block. The transceiver draws a maximum of 1.2 ampere of current, therefore you can use a terminal which supplies power to the radio or other accessory. (Use the unfused input side. The DC power cable is equipped with its own fuse.) Connection at this point will ensure DC power is automatically cut off to the transceiver when the ignition is turned off.

IMPORTANT DC VOLTAGE AT THE TERMINAL SELECTED ON THE FUSE BLOCK MUST BE AT LEAST 10.8 VOLTS FOR PROPER OPERATION.

ANTENNA CONNECTION

The lead-in cable from the antenna must be ter minated with a PL259 type male connector. Attach to the matching antenna input connector (at the rear of the transceiver.

MICRPHONE BRACKET.

Attach the microphone bracket provided to any convenient location.

MICROPHONE CONNECTION

Insert the 4 pin plug at the end of the curl ed cord into the microphone socket.

DO NOT TRANSMIT WITHOUT AN ANTENNA CONNECTED TO THE TRANSCEIVER.

CHANNEL INFORMATION

FREQUENCY/CHANNEL CHART

Frequency	Channel
26.965 MHz	1
26.975 MHz	2
26.985 MHz	3
27.005 MHz	4
27.015 MHz	5
27.025 MHz	6
27.035 MHz	7
27.055 MHz	8
27.065 MHz	9
27.075 MHz	10
27.085 MHz	11
27.105 MHz	12
27.115 MHz	13
27.125 MHz	14
27.135 MHz	15
27.155 MHz	16
27.165 MHz	17
27.175 MHz	18
27.185 MHz	19
27.205 MHz	20

Frequency	Channel
27.215 MHz	21
27.225 MHz	22
27.255 MHz	23
27.235. MHz	24
27.245 MHz	25
27.265 MHz	26
27.275 MHz	27
27.285 MHz	28
27.295 MHz	29
27.305 MHz	30
27.315 MHz	31
27.325 MHz	32
27.335 MHz	33
27.345 MHz	34
27.355 MHz	35
27.365 MHz	36
27.375 MHz	37
27.385 MHz	38
27.395 MHz	39
27.405 MHz	40