

2321

SUPER STAR-401

INSTRUCTION MANUAL

FOR

**SOLID STATE AM, FM, SSB 120 CHANNEL
CITIZEN BAND 2-WAY RADIO**

PRINTED IN KOREA

DESCRIPTION

This model is an all-transistor 2-way radio transceiver for mobile operation. A frequency synthesizer circuit provides 40 crystal controlled PLL transmit and receive channels in the 27 MHz Band, engineered for trouble-free performance. Your transceiver uses heat resistant transistors in all critical areas. Current drain on 12 volts DC is exceptionally low. Operation over long periods is feasible even with your engine turned off. The transceiver may also be operated from A.C. when used with an optional Power Supply.

RECEIVER

The receiver is a sensitive and highly selective dual-conversion superheterodyne type providing crystal-controlled PLL operation on all 40 CB channels. The circuit incorporates an effective full time Automatic Noise Limiter in the audio stages. A ceramic filter provides sharp selectivity and high adjacent channel rejection. As a result, transmissions on adjacent channels cause 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 crystal-controlled operation on all 40 CB channels, 5 watt DC power input to the final RF with average modulation capabilities is possible by the use of high-efficiency Transistors and low loss components, wiring, and mounting boards. The legal limit of power for this service is provided.

POWER SUPPLY

The transceiver is ready for connection to a 12 volt DC, negative or positive ground system. DC power is provided to the Transceiver by means of a fused power lead.

SPECIFICATIONS

TRANSMITTER SECTION

RF Power Output 13.8V DC	AM: 4W MAX
	FM: 4W MAX
	SSB: Up to 12W PEP
Modulation Capability	AM: 90±5%
	FM: 2.0±0.2KHz
Frequency Range	SSB: MAX 12W
Spurious Emission	26.515-27.855 MHz
	Better than -60dB

RECEIVER SECTION

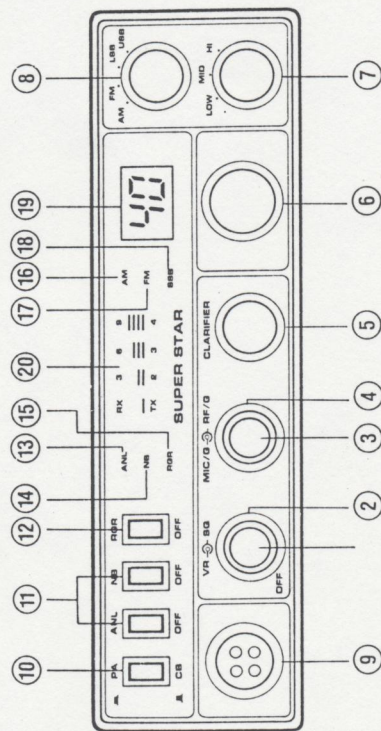
Sensitivity at 10dB S+N/N	AM: 1µV
	SSB: 0.2µV
Image Rejection	80dB
AGC	Less than 60dB
Distortion at 1mV Input	6%
Squelch Sensitivity	Threshold: 0.5µV
	Maximum (stop): 500µV
Adjacent Channel Selectivity	Better than 70dB
Cross Modulation	60dB
Audio Output	5 Watts Peak
Audio Bandwidth (1kHz/0dB) 3dB down	450 to 2000Hz
Clarifier Frequency Range	± 2.5KHz,
Power Source	Operates from nominal
	13.8 Volts DC.

WARNING

The Citizens Band (CB) Radio Service is under the jurisdiction of the Department of Transport & Communications. Any adjustment or alterations which would alter the performance of transceiver's original D.O.T.C. type acceptance or would change the frequency determining method are strictly prohibited.

Replacement of substitution of Crystals, Transistors, IC, Regulator Diodes or any other part of a unique nature, with parts other than those recommended by us may cause violation of the technical regulations of the D.O.T.C.

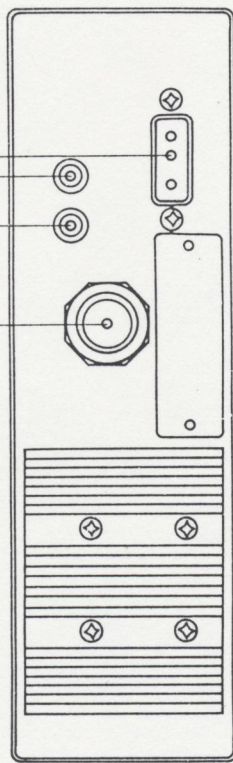
OPERATING CONTROL AND FEATURES



1. **VOLUME CONTROL WITH POWER SWITCH**
The volume control adjusts sound output of the speaker. With a click turn clockwise the volume control, the set is on. A further clockwise turn increases volume and a counter clockwise turn will decrease volume and finally turns off the set with a click.
2. **SQUELCH CONTROL**
The word "squelch" means to silence; therefore, the function of the control is to silence the atmospheric noise (hash) usually present in all high frequency AM radio communication. The maximum "squelch" is obtained when the control is in full CLOCKWISE position, minimum "squelch" when in the COUNTER-CLOCKWISE position.
3. **MICROPHONE GAIN CONTROL**
This control provides the proper or desired modulation or PA audio level.
4. **RF GAIN CONTROL**
This control is used to increase the sensitivity of the receiver so that distant stations may be received more clearly, or to decrease the sensitivity so that very strong stations may be received more clearly.
5. **CLARIFIER**
This control provides an adjustment for TUNING-IN stations which are slightly OFF frequency, to optimize the AM and SSB reception.
6. **CHANNEL SELECTOR**
The Channel Selector sets the channel frequencies simultaneously for the receiving and transmitting modes.
7. **HI/MID/LOW**
This HI/MID/LOW switch selects one of 3 band.
Low band frequency is 26,515-26,955 MHz. MID band frequency is 26,965-27,405 MHz. High band frequency is 27,415-27,855 MHz. Detail frequency table is shown on page 8.

This selector enables the operator to select the mode of operation, upper or lower sideband or AM or FM. The switch changes both the transmitter and the receiver.

9. **MICROPHONE JACK**
This jack accommodates the microphone connector, and is wired to provide transmit when microphone switch is keyed.
10. **PA/CB SWITCH**
This switch selects the mode of operation. When set in the CB position, the transceiver will function as a Citizens Band Radio. When set in the PA (Public Address) position, and an EXTERNAL PA SPEAKER is connected to the PA jack on the rear panel, the unit operates as a public address amplifier.
11. **NB & ANL ON/OFF SWITCH (Noise Blanker & Automatic Noise Limiter)**
Excessive electrical noise, ignition and other atmospheric disturbances will be greatly reduced when this control is in the on position. For normal conditions set the switch in the OFF position.
12. **RGR ON/OFF SWITCH (Roger Beep Tone)**
This switch selects the roger beep mode.
Press the microphone switch and the transmitter is activated. When set in the RGR position, the transceiver will beep the moment the microphone switch is released for receiving.
13. **ANL LED LAMP**
This yellow led lamp will light when the ANL/OFF switch is set to pushed ANL position.
14. **NB LED LAMP**
This green led lamp will light when the NB/OFF switch is set to pushed NB position.
15. **RGR LED LAMP**
This red led lamp will light when the RGR/OFF switch is set to pushed RGR position.
16. **AM MODE LED LAMP**
This yellow led lamp will light when the mode control switch is set to AM position.
17. **FM MODE LED LAMP**
This green led lamp will light when the mode control switch is set to FM position.



18. SSB MODE LED LAMP

This red led lamp will light when the mode control switch is set to SSB (LSB OR USE) position.

19. LED CHANNEL INDICATOR

The number of selected channel will appear on this display panel.

20. R.F. OUTPUT POWER LEVEL LED INDICATORS

These 10 led lamps show transmitter power when transmitting and input signal strength when receiving.

21. ANTENNA CONNECTION

To match antenna lead-in cable (RG 58/U or RG-8U) with PL-259 type coaxial connector.

22. PA SPEAKER JACK

For Public Address (PA) operation, horn impedance should be in 8-16 ohm range.

23. EXTERNAL SPEAKER JACK

Impedance of any device such as headphone connected to this jack should be 8-16 ohms. Insertion of plug into jack automatically silences the transceiver internal speaker.

24. DC POWER CONNECTOR

12 volts DC for transceiver supplied.

TRANSCIEVER INSTALLATION

MOUNTING

Always mount where controls are readily accessible. Unit may be mounted to the underside of the dashboard of a car, truck, etc., utilizing 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 CONNECTION

With regard to the connection of the power cords, it may be possible or desirable to connect the red lead (for negative ground systems) or the black lead (for positive ground systems) to the ignition switch accessory terminal so that the radio is automatically turned off when the ignition switch (key) is turned off.

Alternately, the power lead may be connected to an available terminal on the fuse block or even to a point in the wiring harness. Care must be taken, however, to guard against a short circuit condition. When in doubt, please contact your vehicle dealer for specific information for your vehicle.

GROUND INFORMATION

Most newer U.S. and foreign made cars and small trucks use a negative ground system, while some older cars and some newer, larger trucks may use a positive ground system.

A negative ground system is generally identified by the battery terminal being connected to the vehicle motor block, but if you cannot determine the polarity of your vehicle, consult your vehicle dealer for information.

NOTE: This radio may be installed and used in any 12-volt DC negative or positive ground system.

NEGATIVE GROUND SYSTEM

If you are operating on a negative ground system, connect the red DC power cord from the radio to the positive "+" battery terminal or other convenient point and connect the black power lead to the chassis or vehicle frame, or the negative "-" terminal of the battery.

POSITIVE GROUND SYSTEM

If you are operating on a positive ground system, connect the black DC power cord from the radio to the negative "-" battery terminal or other convenient point and connect the red power lead to the chassis or vehicle frame, or the positive "+" terminal of the battery.

ANTENNA CONNECTION

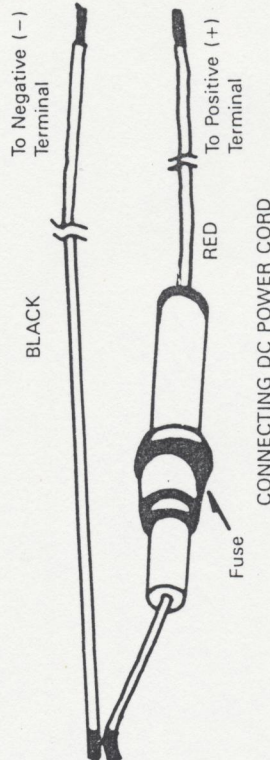
The lead-in cable from the CB antenna must be terminated with a PL-259 type male connector. Attach to the matching antenna input connector at the rear of the transceiver.

MICROPHONE BRACKET

Attach the microphone bracket provided to any convenient location.

MICROPHONE CONNECTION

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



DO NOT TRANSMIT WITHOUT AN ANTENNA CONNECTED TO THE TRANSCIEVER

IGNITION INTERFERENCE

Normally the suppression on modern automotive engines is adequate to prevent annoying interference to your CB transceiver. If it does not, consult your dealer who will recommend additional suppression measurements.

1. Select desired channel using the channel Selector Switch.
2. Rotate "squellch" control to the extreme counter-clockwise position.
3. Rotate the "VOLUME/ON-OFF" switch clockwise, to apply power. Operation will be instantaneous.
4. Set the "VOLUME/ON-OFF" switch clockwise to a comfortable listening level (approximately 1/3 setting). The receiver is now ready to operate.

SQUELCH ADJUSTMENT

The Squelch control eliminate annoying background noise in the absence of signals. To adjust the SQUELCH control properly turn up VOLUME until background noise is heard. Rotate the SQUELCH slowly clockwise until the background noise just disappear. At this point the receiver will be quiet under "nosignal" conditions, however a reasonable strength incoming signal will overcome the squelch action and be heard. As the control is advanced the squelch action is progressively increased and stronger incoming signals are needed to overcome it. To receive weak signals or to disable the squelch circuit turn the control fully counter clockwise.

EXTERNAL SPEAKER JACK

Recommended plug for the EXT SPEAKER jack is a "MINIPLUG" subminiature phone plug. The impedance of earphones or speakers connected should be 8-16 ohms. Insertion of a plug automatically silences the transceivers internal speaker.

SIGNAL STRENGTH LEVEL METER

When receiving, the S/RF POWER LEVEL METER provides a relative indication of signal strength in "S" units providing a means of comparison between one received signal and another.

TRANSMITTING

To transmit, depress the push-to-talk button on the microphone. The S/TX power LEVEL METER indicates the relative transmit power level. Use the microphone like a telephone speaking several inches from the face. Do not shout, use normal speaking voice.

When you are transmitting, the receiver is silenced and reception is, therefore, impossible. In the same way, your signal cannot be heard by another station when he is transmitting—each must take turns. To receive again, simply release the microphone push-to-talk button.

S/TX POWER LEVEL METER

In transmit position the S/TX POWER LEVEL METER gives a relative indication of antenna RF power.

USE AS PUBLIC ADDRESS SYSTEM

Provision has been made for Public Address (PA) operation utilizing the microphone and audio stages in the transceiver. For PA operation, use an external high-efficiency public address horn-type speaker with an impedance range of 8 to 16 ohms. Connect to the PA jack on the rear panel of the transceiver. The required plug is a subminiature phone plug. For Public Address (PA) operation, switch CB/PA SWITCH to PA position.

AVAILABLE CITIZEN BAND FREQUENCIES

Your transceiver provides operation on all available U.S. Citizens Band channels. Frequencies are listed in accompanying table.

Channel	Frequency			Channel	Frequency		
	LOW BAND	MID BAND	HIGH BAND		LOW BAND	MID BAND	HIGH BAND
1	26.515	26.965	27.415	21	26.765	27.215	27.665
2	26.525	26.975	27.425	22	26.775	27.225	27.675
3	26.535	26.985	27.435	23	26.805	27.255	27.705
4	26.555	27.005	27.455	24	26.785	27.235	27.685
5	26.565	27.015	27.465	25	26.795	27.245	27.695
6	26.575	27.025	27.475	26	26.815	27.265	27.715
7	26.585	27.035	27.485	27	26.825	27.275	27.725
8	26.605	27.055	27.505	28	26.835	27.285	27.735
9	26.615	27.065	27.515	29	26.845	27.295	27.745
10	26.625	27.075	27.525	30	26.855	27.305	27.755
11	26.635	27.085	27.535	31	26.865	27.315	27.765
12	26.655	27.105	27.555	32	26.875	27.325	27.775
13	26.665	27.115	27.565	33	26.885	27.335	27.785
14	26.675	27.125	27.575	34	26.895	27.345	27.795
15	26.685	27.135	27.585	35	26.905	27.355	27.805
16	26.705	27.155	27.605	36	26.915	27.365	27.815
17	26.715	27.165	27.615	37	26.925	27.375	27.825
18	26.725	27.175	27.625	38	26.935	27.385	27.835
19	26.735	27.185	27.635	39	26.945	27.395	27.845
20	26.755	27.205	27.655	40	26.955	27.405	27.855

TRANSCIVER SERVICING

Transceiver has been fully tested prior to shipment and will not normally require further adjustments.

