SANYO

TA 4100

SANYO 4-WATT, 18-CHANNEL MOBILE TRANSCEIVER

OPERATING INSTRUCTIONS

For maximum usage and reliability, please read the following instruction manual carefully before operating your new transceiver.

GENERAL DESCRIPTION

Your Sanyo TA 4100 Citizens Band Mobile Transceiver is a high quality radio transceiver skillfully constructed of the finest material and solid-state components. The unit incorporates many unique features which make it a highly selective, sensitive and quiet receiver as well as a transmitter with maximum legal power output. The transceiver equipped with a frequency synthesizing circuit with PLL (Phase Lock Loop) techniques to assure ultra-precise frequency control.

FEATURES

* Receives and transmits on any of the 18 CB channels.
* A frequency synthesizing circuit with Phase Lock Loop techniques.
* Digital LED readout indicates channel selection in bright easy to read numerals.
* Variable Squelch control eliminates background noise between calls.
* RF Gain control lets you adjust the sensitivity (receiving range) of transceiver.
* Switchable ANL (Automatic Noise Limiter) circuit minimizes noise interference.
* Delta Tune permits pinpoint tuning of receiver for reception of an off-frequency station.
* Public Address System with Volume control.
* Modulation Indicator uses a reliable LED (Light Emitting Diode).
* Illuminated S/RF Meter shows a relative strength of signals in the transmit and receive modes.
* Detachable Dynamic Microphone with lock on type connector.
* External Speaker Jack for remote monitoring.
* 12V DC plug and socket for easy removal of unit.
* Transceiver works with either negative or positive ground electrical systems.
* Universal Mounting Bracket for mobile installation.

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ATTENTION

For your protection in the event of theft or loss of this product, please fill in the information requested below:

Model No. _____ **Serial No.** _____
(Located on back side of unit)

Date of Purchase _____ **Purchase Price** _____

Where Purchased _____

FREQUENCIES AVAILABLE FOR CB OPERATION

Channel	Frequency (MHz)
1	27.015
2	27.025
3	27.035
4	27.055
5	27.065 EMERGENCY
6	27.085 CALL CHANNEL
7	27.095
8	27.105
9	27.115
10	27.125
11	27.135
12	27.155
13	27.165
14	27.175
15	27.185
16	27.195
17	27.205
18	27.225

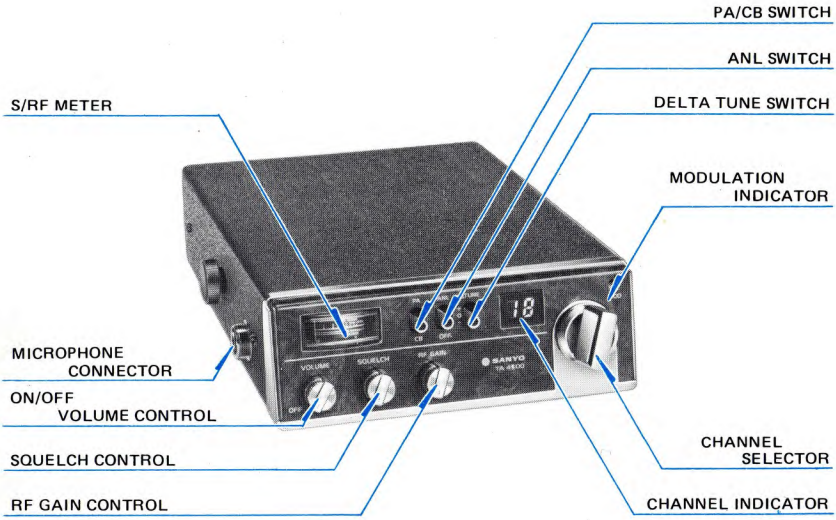
CH 5 – The frequency 27.065 MHz shall be used solely for:

(1) Emergency communications involving the immediate safety of life of individuals or the immediate protection of property, or

(2) Communications necessary to render assistance to a motorist.

CONTROLS AND CONNECTORS

FRONT VIEW



REAR VIEW

OPERATING CONTROLS AND FUNCTIONS

1. **ON/OFF VOLUME CONTROL** – Turns the transceiver on and off and adjust listening level for both CB and PA operations. To increase volume, turn VOLUME clockwise.
   (This control has no effect on the transmitter output.)
2. **SQUELCH CONTROL** – Eliminates annoying noise between transmissions. When properly set, it allows signals to come through, but shuts off the receiver's sound when no signals are present.
   To adjust: With no signals being received, turn SQUELCH knob clockwise until the receiver is quieted. Incoming signals will automatically release the squelch. Careful adjustment is necessary, as settings too far to the right will not allow weaker signals to release the Squelch Mode.
3. **RF GAIN CONTROL** – Reduces sensitivity of the receiver to allow for the reception of strong signals that would normally "OVERLOAD" the receiver resulting in audio distortion. The control may also be used to minimize weak interfering signals that are present during your communications.
4. **CHANNEL SELECTOR** – Selects any one of the 18 CB channels as indicated in the LED CHANNEL INDICATOR window.
5. **CHANNEL INDICATOR** – Shows the selected channel in a large, easy-to-read 7-segment LED display.
6. **DELTA TUNE SWITCH** – Tunes in slightly off-frequency stations and reduces adjacent channel interference. Set it to the position (+ or –) which gives the highest S/RF METER reading or provides rejection of adjacent channel interference. For normal operation, set it to 0 position.
7. **ANL SWITCH** – Activates the Automatic Noise Limiter circuit. When annoying hash-type noise is a problem. Set ANL switch to ANL; it will aid in reducing noise interference. When no noise is present, set ANL switch to OFF.
8. **PA/CB SWITCH** – Actuates a PA (Public Address) amplifier. Connect a suitable 8-ohm PA speaker to PA speaker jack on the rear panel. Set PA/CB switch to PA position and press the Push-To-Talk button on the microphone.
   For regular 2-way communications, the switch must be set to CB position.
9. **MODULATION INDICATOR** – When transmitting, the red indicator light flickers as you talk to indicate your signal is modulating.
10. **S/RF METER** – Serves a dual function. When receiving, it indicates the relative receive signal strength on RX SIGNAL scale. When you transmit, it indicates the relative transmitted power on TX POWER scale.
11. **MICROPHONE CONNECTOR** – Accepts the dynamic microphone provided with the transceiver.
12. **ANTENNA CONNECTOR** – Connect your CB antenna to this socket (SO-239 type socket, matches PL-259 standard type plug).

13. **PA SPEAKER JACK** – To use the Public Address function, you must connect an external 8-ohm speaker (not supplied) to this jack. Use a standard (3.5mmϕ) miniature phone plug.
14. **EXTERNAL SPEAKER JACK** – Permits use of external 8-ohm speaker (not supplied). Use a standard (3.5mmϕ) miniature phone plug. When a plug is inserted into this jack, the built-in speaker is automatically disconnected.
15. **DC POWER SOCKET** – Accepts power cable with in-line fuse for 12V DC negative/positive operation. Insert the plug of power cable in this jack. The Red wire with the in-line fuse must be connected to the + side and the Brown wire to the – side.

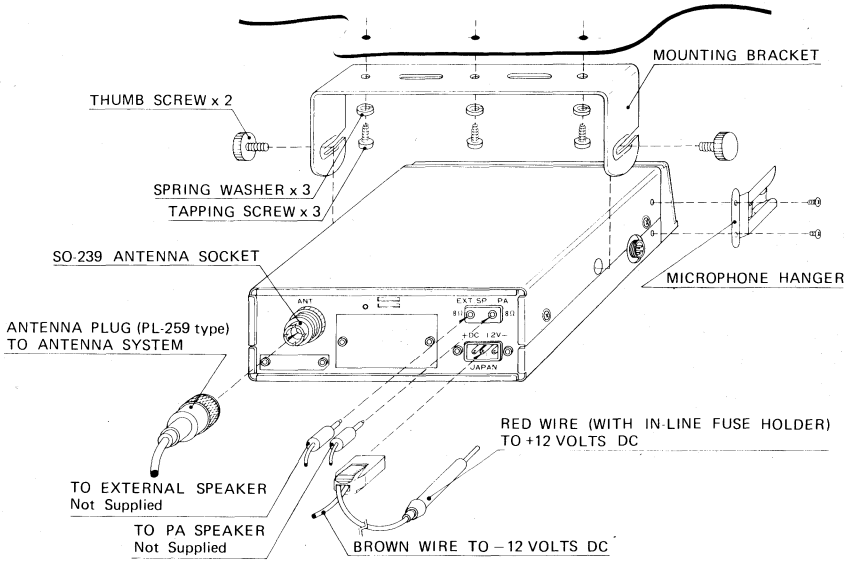
MOBILE INSTALLATION

MOUNTING LOCATION

Safety and convenience are the primary considerations for mounting any piece of mobile equipment. All controls must be readily available to the operator without interfering with the movements necessary for safe operation of the vehicle. Be sure all cables are clear of the brake, clutch and accelerator. The most common mounting position for a transceiver is under the dashboard directly over the transmission hump. See illustrations for UNDER-DASH MOUNTING.

All mounting brackets and hardware are supplied with this transceiver.

UNDER-DASH MOUNTING



POWER AND OTHER CONNECTIONS

This transceiver may be installed and used in any 12 volt DC negative or positive earth system vehicle.

Most newer Australian and imported cars and small trucks use a nagative earth system while some older cars and some newer large trucks may use a positive earth system.

A negative earth system is generally identified by the – battery terminal being connected to the vehicle motor block, but if you can not determine the polarity system of your vehicle, it is suggested that you consult your vehicle dealer for definite information.

Negative Earth System

Connect the Red power cable from the transceiver to the positive or + battery terminal or other convenient point and connect the Brown power cable to the chassis or vehicle frame or – battery terminal.

Positive Earth System

Connect the Brown power cable from the transceiver to the negative or – battery terminal or other convenient point and connect the Red power cable to the chassis or vehicle frame or + battery terminal.

With regard to the Connection of the power cables, it may be possible or desirable to connect power cables to the ignition switch accessory terminal so that the transceiver is automatically turned off when the ignition switch (key) is turned off.

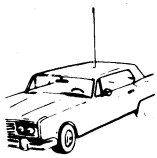
Connect the antenna system to ANTENNA CONNECTOR. If you are using an external speaker or PA speaker, connect them to the appropriate jacks.

ANTENNA INSTALLATION

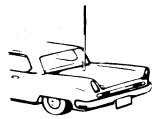
Your transceiver is designed to operate with any good quality Citizens Band mobile antenna. The type of antenna you should use depends largely upon how and where the antenna is to be mounted and the radiation pattern desired or required. Sanyo retailers are qualified to assist you in the selection of the proper type of antenna to meet your needs.

A vertical whip antenna is best suited for mobile use. A non-directional antenna should be used for best results in any case. The base loaded whip antenna will normally provide effective communication. For greater range and more reliable operation, a full quarter wave whip should be used. Either of these antennas use the metal car body as a ground plane and the shield of the base lead as well as the metal case of the transceiver should be grounded. A standard antenna socket (SO-239) is provided on the rear panel for easy connection of a standard PL-259 antenna cable termination.

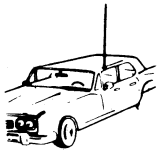
Five of the most popular locations are shown.



ROOF
MOUNT

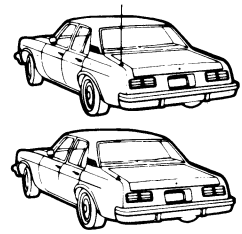


TRUNK LIP
MOUNT



GUTTER
MOUNT

BUMPER
MOUNT



RETRACTABLE
AM/FM/CB

NOISE INTERFERENCE

Between the noise limiting circuitry built into the TA 4100 transceiver and the noise suppression devices built into most automobiles, the total noise interference effect should be minimal.

In the event exceptions do arise, it is best to consult with an auto radio/CB technician as there are many steps that can be taken to locate, shield ground or filter interference in an automobile.

OPERATING INSTRUCTIONS

CAUTION: DO NOT TRANSMIT WITHOUT THE ANTENNA BEING CONNECTED TO THE SET.

TO RECEIVE (Microphone must be connected.)

1. Set PA/CB SWITCH to CB.
2. Set SQUELCH CONTROL maximum counterclockwise.
3. Set RF GAIN CONTROL maximum clockwise for maximum range reception.
4. Turn power on by turning ON/OFF VOLUME CONTROL clockwise.
5. Select the desired channel by rotating CHANNEL SELECTOR to the desired position as indicated in the CHANNEL INDICATOR window.
6. Adjust SQUELCH to cut out annoying background noise when no signal is being received. To do this, set CHANNEL SELECTOR to a channel where no signals are present (or wait until signals cease on your channel). Then, turn the SQUELCH CONTROL in a clockwise direction to the point where the background noise just stops. Now, when a signal is present, you will hear it, but will not be disturbed by noise on the channel in between signals. Do not advance the SQUELCH CONTROL too far, or some of the weaker signals will not be heard.
7. Use DELTA TUNE SWITCH to tune in slightly off-frequency stations, or to tune out adjacent channel interference caused by a station on the next channel. (which may be too close to your channel). Use the position (+ or –) which results in the highest S/RF METER reading and/or least adjacent channel interference. For normal operation, set it to the 0 position.
8. Whenever it is desired to reduce background noise, set the ANL SWITCH to ANL position.
9. Adjust VOLUME for a comfortable listening level.

TO TRANSMIT

1. Secure the Microphone Plug to MICROPHONE CONNECTOR on the left side of the unit.
2. Select the desired channel of operation.
3. Press the Push-To-Talk button in the Microphone and hold it about 2-3" from your mouth and speak in a normal voice. Do not shout into the microphone. As you talk into the Microphone, the red MODULATION INDICATOR light will flicker.
4. To receive, release the Push-To-Talk button.

PUBLIC ADDRESS AMPLIFIER

You can use your transceiver as a Public Address Amplifier. To use this function, it is necessary to connect an 8 ohm public address type speaker to PA SPEAKER JACK on the rear panel.

1. Set PA/CB SWITCH to PA position.
2. Turn power on by turning ON/OFF VOLUME CONTROL.

3. Press the Push-To-Talk button on the microphone and talk into the microphone.
4. Adjust the PA output as required with ON/OFF VOLUME CONTROL.
5. To return to normal transceiver operation, set PA/CB SWITCH to CB position.

NOTE. While using the PA function you can still be monitoring receive signals through the PA speaker. However, if you do not want to hear receive signals, set SQUELCH CONTROL maximum clockwise.

WARNING

DO NOT MAKE ANY INTERNAL TRANSMITTER ADJUSTMENTS OR CHANGE ANY INTERNAL PARTS INCLUDING CRYSTALS.

Any internal adjustments, repairs or part changes that can affect transmission must be made only by a qualified technician.

BEFORE CALLING FOR SERVICE

Your transceiver has been built in accordance with Sanyo's quality control standards. However, it should be treated with reasonable care accorded any electronic equipment. Avoid exposing it to severe shock, dirt or moisture.
If you run into problems with the transceiver, we recommend you check the following.

1. If trouble is experienced with receiving.
   * Check ON/OFF VOLUME CONTROL setting.
   * Be sure SQUELCH is adjusted properly. Is it over-squelched?
   * Check if the unit is switched to an operating channel.
2. If trouble is experienced with transmitting.
   * Check if PA/CB SWITCH is set to CB position.
   * Check if the antenna cable is securely connected to the ANTENNA CONNECTOR.
   * Check if the antenna is fully extended for proper operation.
   * Are all transmission line connections secure and free of corrosion?
   * Make sure you are fully pressing the Push-To-Talk button on the Microphone.
   * Be sure the Microphone Plug is properly connected to the MICROPHONE CONNECTOR on the unit.
3. If the transceiver is completely inoperative.
   * Check the Power Cables and Fuse (2AMP).

SPECIFICATIONS

CIRCUIT TYPE: Transistorized, dual conversion superheterodyne with two ceramic IF filters. Crystal controlled synthesized channel frequencies using the Phase Lock Loop system.

RECEIVER SECTION

Frequency Coverage	18 channels 27.015 to 27.225 MHz
Sensitivity	0.5 μV for 10 dB S+N/N
Selectivity	±3 kHz at −6 dB
Adjacent Channel Rejection	55 dB
Audio Distortion at 1000 Hz	Less than 10% at 4 watts output
I. F.	1st 9.785 MHz 2nd 455 kHz
Squelch	Adjustable from 0.25 μV

TRANSMITTER SECTION

Frequency Coverage	18 channels 27.015 to 27.225 MHz
Power Output	4 watts maximum
Modulation	Will not exceed 100%
Spurious Radiation	60 dB down or better
Emission	6A3
Frequency Tolerance	0.005%
Antenna Impedance	50 ohms
Current Drain (13.8 volts DC)	250-1600 mA (from no signal receive to full modulation on transmit)

MICROPHONE SPECIFICATIONS

Type — Dynamic (Standard)
Impedance — 500 ohms
Switching — Electronic
System — 4 wires

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OSAKA JAPAN

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