

# SS-4900B

## User's Manual

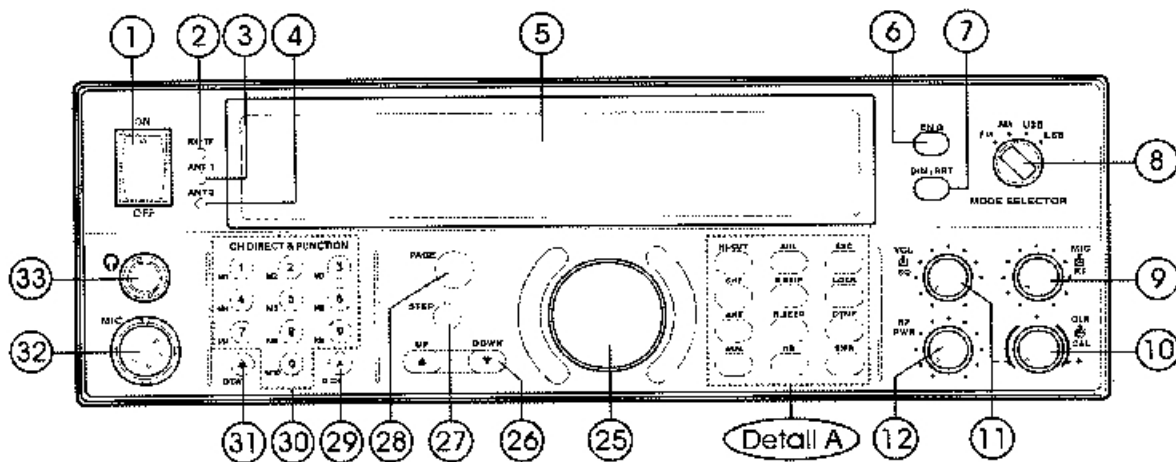


# CONTENT

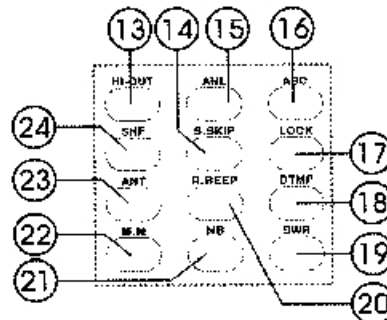
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# OPERATIONS and FEATURES

## FRONT PANEL



### Detail A



#### 1. ON / OFF SWITCH

Press this button to turn ON and OFF. When the power is on, the L.E.D. lamp will be on and "HELLO" will appear on the display.

#### 2. RX / TX L.E.D. LAMP

This lamp shows RX / TX. In the TX mode, red lamp is on and in RX mode, green Lamp is on.

#### 3. ANT 1 L.E.D. LAMP

This lamp shows the antenna 1 SO-239 coax connector is being used. The initial condition of this radio in factory is Antenna 1.

The antenna connection condition should be checked before using the radio. If the Signal is received without a connected antenna; the radio might be damaged.

**4. ANT 2 L.E.D. LAMP** This lamp is on when the Antenna 2 So-239 coax connector is being used.

## **OPERATION and FEATURES**

### **5. L.C.D.**

It will be described in "Display Panel Feature".

### **6. EMG (Emergency)**

This radio has an Emergency button for instant access to both national emergency Channel 9. Which is monitored by Police and various safety groups, as well as the most frequently used channel by professional drivers, channel 19.

This feature has been designed specifically to give the user fast, and simple access to the two channels that will provide the best result when calling for help during an emergency situation.

To access Channel 9, just simply press "EMG" button once. "EMG" is blinking on the display. If you would like to access channel 19, press the "EMG" button one more time.

To deactivate either of these channels, press once again. "EMG" will disappear on the screen.

**NOTE :** When the radio is in the emergency mode with either "9" or "19" selected, the Up / Down buttons will not operate.

### **7. DIM / BRT (Dimmer and Bright Function)**

This feature gives the user to ability to read the display at night. The initial condition is on bright. If you press DIM / BRT button, the L.C.D. back lighting will operate with 3 steps.

### **8. MODE SELECTOR**

Turn this button to select FM / AM / USB / LSB modes.

### **9. MIC / RF CONTROLS**

#### **1) Microphone Gain Control**

It adjusts the loudness of your voice. Generally, the volume position is at Max. Hold the microphone 3 to 5 inches from your mouth and speak in a normal voice.

#### **2) RF Gain Control**

This knob controls the received signal. Adjust as required to optimize the received signal. The Max setting means Max receiving condition. The adjustable gain is 40dB.

### **10. CLR (Clarifier)**

This feature is a selectable function, and only works on SSB mode. In AM / FM this switch should be fixed at center position. If you adjust the Clarifier, the tone of the receiving signal might be changed. In Single Sideband mode (USB or LSB), turn the CLR to hear the best sound in receiving mode.

## **OPERATION and FEATURES**

### **11. VOL / SQ Control**

#### 1) VOL (Volume Control)

Turn this button clockwise to set desired listening volume.

#### 2) SQ (Squelch Control)

Is used This control to cut off or eliminate receiver back-ground noise in the absence of a signal. For maximum receiver sensitivity, it is desired that the control can be adjusted to the point where the receiver background on ambient background noise is eliminated. The incoming signals that are then received will be stronger than the background noise.

### **12. RF Power (Variable Power)**

1) This knob is to regulate the power out put wattage.

### **13. HI-CUT**

This feature is to eliminate the high noise of receiving sound. It is designed with 15 steps within 6dB margin. To access the wanted step, press and hold HI-CUT function button and using "▲ ▼" button. Off is toggled.

### **14. S.SKIP**

#### SCAN

The channel scan feature allows the radio to automatically scan through all channels, stopping at any channel that is busy with signals being communicated. It will remain on that channel during the conversation, and will not reactive scanning until 5 seconds after the conversation has ended.

**To Activate :** Simply press the "S.SKIP" button. The word "SCAN" will appear on the radio and it will start the scanning process.

If you want to stop scanning, simply press the "S-SKIP" button again. In the event that during the scanning process the radio stops on a channel and conversation that you want to communicate with, simply press the "Push-to-Talk" switch on the microphone. This will shut off the scanning function and transmit on that channel.

#### SCANNING THE MEMORY LOCATIONS

The radio allows to selectively scan of the 10 channels stored in memory.

**To Activate :** Press "M.M" button then press "S.SKIP". Deactivate by pressing "S.SKIP" again.

#### 3) S.SKIP (Scan Skip)

While the radio stops scanning on a busy channel, press this button for 2 seconds, "♥" will appear on the display and the channel will be deleted from its future scans. The deleted channel will be recovered after the radio is turned off and back on.

## **OPERATION and FEATURES**

### **15. ANL (Automatic Noise Limitter)**

ANL is a feature that allows you to adjust the noise level automatically according to the incoming signal and to keep the best receiving condition only in AM mode.

**To Activate :** Press "ANL" button. "ANL" will appear on the display.

### **16. ASC (Automatic Squelch Control)**

ASC is a feature that allows the radio to keep the receiving mode without noise and to receive the incoming signal stronger than fixed level in AM / FM mode. Especially, this feature is to operate in the receiving mode only.

**To Activate :** Press the "ASC" button. "ASC" will appear on the display.

### **17. LOCK**

Lock feature allows the user to "LOCK" virtually all of the buttons, so they can not be activated. This will prevent the radio from having its operation mode changed from that desired by the user.

**To Activate :** Simply press "LOCK" button, the "LOCK" will appear on the display to indicate that this feature is currently activated.

**To De-Activate :** Repeat process described in "To Activate". The "LOCK" will disappear from the screen.

### **18. DTMF**

#### **1) RX DTMF MODE**

Press "DTMF" button located at the right bottom side. "DTMF.R" will appear on the display. The input code will be blinking 2 times. When the same DTMF code is received, the SQ will be off.

#### **2) TX DTMF MODE**

Press the "DTMF" button located at the bottom side. "T.DTMF" will appear on the display. The input code will be blinking 2 times. When the PTT button is pressed, DTMF code will be transmitted automatically. When the PTT button is pressed, DTMF code will be transmitted per code by manual.

#### **3) TX / RX DTMF MODE**

Press the "DTMF" button once more at only TX mode (T.DTMF mode).

"T.DTMF.R" will appear on the display. The input code will be blinking 2 times.

Now, TX / RX DTMF is operating.

#### **4) DTMF REPLY FUNCTION**

This function is operating at "T.DTMF.R" mode. Press "DTMF" button over 2 seconds and then "&" will appear on the display. When the DTMF code same as stored RX DTMF code is receiving, DTMF code will be transmitted automatically.

## **OPERATION and FEATURES**

### **19. SWR**

This button is multi-function.

By pressing the button, Power meter - Modulation meter - Cal. Meter - SWR will be operated by order.

#### **1) POWER METER**

It indicates RF level in TX mode.

#### **2) MODULATION METER**

It indicates the voice level on the microphone.

3) It indicates the calibrated at zero position.

#### **4) SWR (Standing Wave Ratio)**

It indicates the relation between emitted and reflected power. After adjustment of Cal Meter, you can see the matching condition of antenna when SWR is on.

### **20. R.BEEP (Roger Beep)**

#### **1) BEEP**

Gives the user an audible confirmation through a short beep tone that the radio has been operated. If you would like to active this feature, simply press "BEEP" button. "BEEP" will appear on the display.

**To Deactivate :** This feature, press "BEEP" button once again. "BEEP" will disappear on the screen and the beep tone will now be turned off.

#### **2) R.BEEP**

Gives the receiver an audible confirmation through a beep tone that the transmitting is just finished.

**To Activate :** Press "R.BEEP" button till "R.BEEP" will appear on the display. After transmitting, the receiver will have beep tone.

**To Deactivate :** Press "R.BEEP" button. "R.BEEP" will disappear on the screen and the R.BEEP tone will now be turned off.

### **21. NB (Noise Blanker)**

The noise blanker will reduce some noise that you receive.

**To Activate :** Press "NB" button and then "NB" will appear on the L.C.D.

### **22. M.M**

This button is used to store the selected channel to the memory channel M1 to M10. Please refer to the description of memory button.

### **23. ANT (Antenna)**

This button is used to change the antenna terminal.

## **OPERATION and FEATURES**

### **24. SHF**

The frequency can be transmitted with shifted frequency (+ or – frequency) by setting the offset frequency.

Setting of SHF

- Press "SHF" button longer than 2 seconds.
- ".600" will be displayed on the LCD.
- Select the wanted offset with the up or down button.
- To store the selected shift frequency, press PTT button or "SHF" button longer than 2 seconds.
- You can easily select "1KHz", "10KHz" and "100KHz" by using shift button.

Operating of Shift

- Press the PTT button. The offset frequency will be operated as follows: "- SHF → SHF + → off".

### **25. CHANNEL SELECTOR KNOB**

Turn this knob clockwise (higher channel) and counterclockwise (lower channel) to set the desired channel.

### **26. UP / DOWN BUTTON**

1) UP (▲)

Press the "▲" arrow to move to a higher channel than is shown on display.

2) DOWN (▼)

Press the "▼" arrow to move to a lower channel than is currently shown on display.

### **27. STEP**

This feature is available only in Amateur mode. In case of operating 10 Meters Band (28.000 to 29.690 MHz.), press this button to change the frequency per digit quickly.

### **28. PAGE**

This feature is to be operated under the condition that the receiving DTMF code from another station is the same as user's stored DTMF code. So, this feature is useful to check if there was incoming signal during user's being out for a short time. This feature gives your and your partner own code under "T.DTMF.R" mode.

For Example, there are 10 stations to use same DTMF code as "12345". In this case, the user can make basic No. per station in order to distinguish each station. After transmitting DTMF code to the partner's, transmit the same code with DTMF keypad

In this case, the basic code will be in memory on the partner's radio. So, the partner can easily find who transmit the signal. This function is operated under DTMF.

1) PAGE ON / OFF FUNCTION

On / Off will be toggled by pressing "PAGE" button. If there is a receiving message, the beep will sound for 2.5 seconds.



## **OPERATION and FEATURES**

### **2) PAGE MESSAGE RECALL FUNCTION**

Press "PAGE" button over 2 seconds. "PAGE" will be blinking on the display.  
Press memory button at DTMF key pad and then DTMF message will be displayed  
message will be deleted by pressing PTT button.

### **29. D.CH (Direct Channel Entry)**

**To Activate :** Press "D.CH" and then press the wanted channel button.

For example, to access channel "9", you can press "0 and 9" or just the "9".

The selected channel number will appear on the display.

If you press another button, the error beep tone will ring and the channel will not be changed.

### **30. MEMORY BUTTON (M1 to M10)**

This button, when used in conjunction with the buttons on the front panel, allows for access of the ten preset memory locations. The memory presets are great for storing your most frequently used channels, allowing immediate access to them in a very convenient, simplistic method.

**To Activate :** Select the channel to be stored. Press "M.M" button at the right bottom side. "M" will appear on the display. Choose memory button (M1 to M10) to store the selected channel.

**NOTE :** If you want to store over 10 channels in a memory location, the stored channel will be deleted and newly selected channel will be stored at the memory button.

### **31. DT.W.**

This feature is used to input the DTMF (Dual Tone Multi Frequency) code.  
DTMF code will be input to RX and TX by order.

**To Input RX DTMF code :** Press "DT.W" button shortly. "DTMF.R" will be Blinking on the display. Input 5 digits RX DTMF code to "\_\_\_\_\_".  
Press "DT.W" button one more time.

**To Input TX DTMF Code :** Press "DT.W" button for 2 seconds. "T.DTMF" will be blinking on the display. Input 5 digits TX DTMF code to "\_\_\_\_\_".  
Press "DT.W" button one more time.

### **32. MIC (Microphone)**

This radio is designed to use 6 pin mic. After inserting the mic, lock the nut.

Press PTT button on the mic and then RX / TX lamp will be on. Please refer to the drawing for microphone terminal socket.

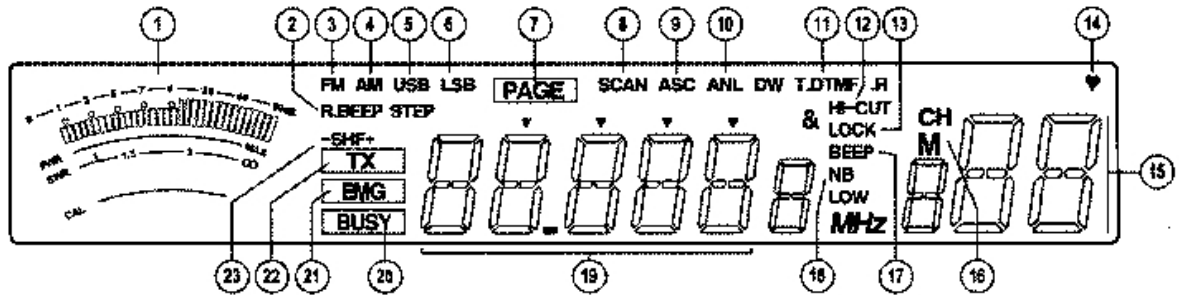
### **33. PHONE JACK**

It is used to hear the signals with an external headphone.

Stereo type plug should be used for this radio.

# **OPERATIONS and FEATURES**

## ■ DISPLAY PANEL



### **1. SWR METER**

Indicates the Power-Meter, Modulation Meter, CAL Meter and SWR Meter.

### **2. R. BEEP (Roger Beep)**

Indicates that the R.BEEP Feature has been activated.

### **3. FM (Frequency Modulation)**

Indicates that the mode is FM.

### **4. AM (Amplitude Modulation)**

Indicates that the mode is AM.

### **5. USB (Upper Sideband)**

Indicates that the mode is USB.

### **6. LSB (Lower Sideband)**

Indicates that the mode is LSB.

### **7. PAGE**

Indicates that the PAGE feature has been activated

### **8. SCAN**

Indicates that the radio is in the scan mode, which monitor's channel activity. In the bank of channels selected.

### **9. ASC (Automatic Squelch Control)**

Indicates that ASC feature has been activated.

### **10. ANL (Automatic Noise Limiter)**

Indicates that the ANL feature has been activated only in AM mode.

### **11. T.DTMF.R**

Indicates that the DTMF feature has been activated.

## **OPERATIONS and FEATURES**

### **12. HI-CUT**

Indicates that the HI-CUT feature has been activated.

### **13. LOCK**

Indicates that the radio is in the "LOCK" mode.

### **14. ♥**

Indicates that S.SKIP feature has been activated.

### **15. CHANNEL DISPLAY indicates the current channel to be selected.**

### **16. M**

Indicates that a preset memory location has been selected, and the corresponding channel that is assigned to that memory.

### **17. BEEP**

Indicates that the beep tone confirmation feature has been activated.

### **18. NB (Noise Blanker)**

Indicates that the NB feature has been activated.

### **19. FREQUENCY DISPLAY (Indicates the frequency of the current channel)**

### **20. BUSY**

Indicates that radio is in the Monitor mode.

### **21. EMG**

Identifies that the radio is in the Emergency Channel mode, either channel 9 or channel 19.

### **22. TX**

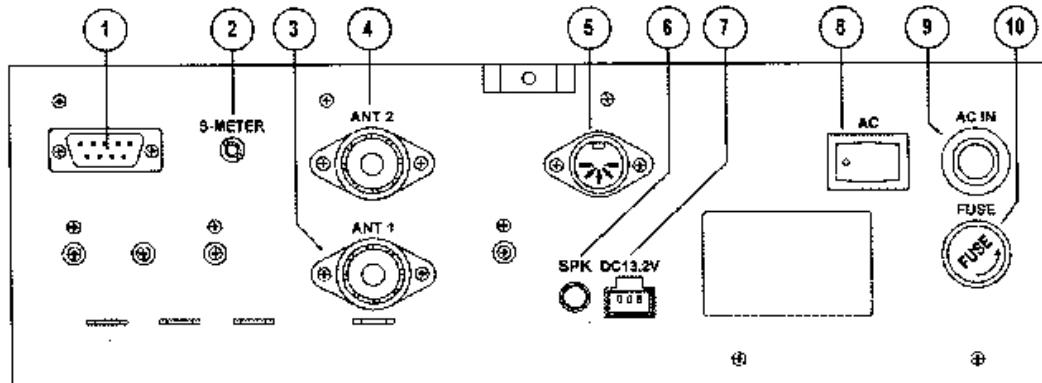
Indicates that the radio is in the transmit mode.

### **23. SHF**

Indicates that the SHIFT TX Frequency feature has been activated.

# **OPERATIONS and FEATURES**

## **■ REAR PANEL**



### **1. D-Sub 9 Pin for 5 Tone Selector call (Optional)**

It is used to connect the external accessory when the 5 Tone Selector CALL has been activated.

### **2. S-METER (Optional)**

It is used to connect the external level meter in RX / TX mode.

### **3. ANT. 1**

It indicates the Antenna 1 input port. It is a SO-239 type.

### **4. ANT. 2**

It indicates the Antenna 2 input port. It is a SO-239 type.

### **5. 5 Pin Din Jack for Packet Radio (Optional)**

It is used to have Packet communications.

### **6. SPK (External Audio Jack)**

It is used to hear the receiving signal with external speaker.

### **7. DC 13.8 Volts**

It is used to be supplied power with DC 13.8V

### **8. AC 110V ON / OFF SWITCH**

It is ON / OFF switch for AC Power Supply.

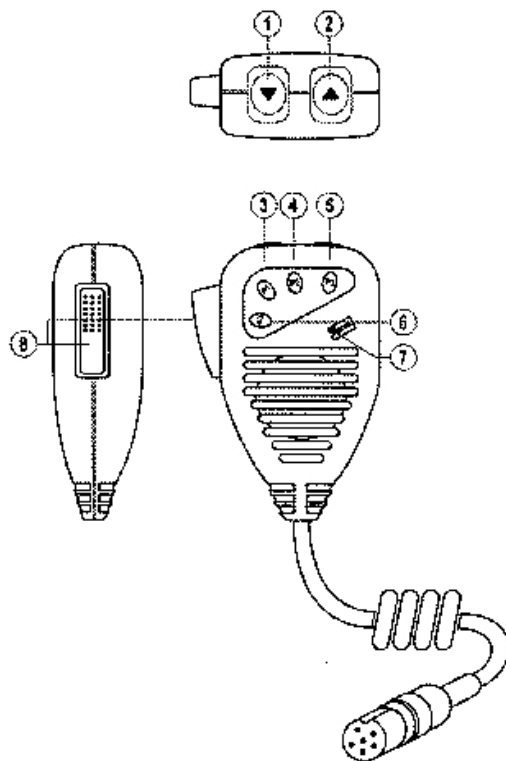
### **9. AC IN**

It is a input line of AC Cable.

### **10. FUSE**

The capacity of Fuse is 150V / 0.5A. If the transceiver does not operate with AC power supply, please check the Fuse.

## **MICROPHONE INFORMATION**



### **1. Down (▼ ) Button**

This button is used to go down on the channel number.

### **2. Up (▲ ) Button**

This button is used to go up on the channel number.

### **3. P1 Button**

User Define

### **4. P2 Button**

User Define

### **5. P3 Button**

User Define

### **6. Mo Button (Monitor Button)**

### **7. Microphone**

### **8. PTT (Push-to-Talk) Button**

Press the PTT button and then the transmitter is activated: You can now send a message and TX and RF level will appear on the display. To receive, release the PTT button and then TX will disappear on the display. When transmitting, hold the MIC two inches from your mouth and speak clearly in a normal voice into the front of the mic's grill area.

## **SPECIAL FEATURES**

### **1. Reset Function**

If the base station does not operate as like user's manual or if you want to clear all stored functions, press and hold "HI-CUT" button and then turn the power on.

### **2. L.C.D. Checking**

If you want to check all Description on the L.C.D., press and hold "LOCK" button and then turn the power on.

### **3. User Define Functions**

This feature allows immediate access to the most frequently used functions with the microphone.

#### **To Access**

- 1) Press "PAGE" button and then turn the power on.
- 2) "P1" will appear on the display.
- 3) Press the selected function out of each function button and press the button in which you want to have at "P1" in the microphone.
- 4) "P2" will appear on the display.
- 5) Press selected function button except the button you chose before and press the button in which you want to have at "P2" in the microphone.
- 6) "P3" will appear on the display.
- 7) Press selected function button except the buttons you chose before and press the button in which you want to have at "P3" in the microphone.
- 8) "P1" will appear on the display.
- 9) Press "PTT" button to confirm your selection. The display will return to normal operation. Now you can select the functions of chosen the buttons with microphone.
- 10) If you want to change the stored functions in the in the microphone, repeat the process described "To Access". Even though the power will be off, the stored function in the microphone will be kept. If you reset the Base-Station, the stored function will be deleted and P1 will be ASC, P2 will be SCAN and P3 will be DIM / BRT.

### **4. Functions to be operated by pressing "each-button" "Power On" Button**

- 1) LOCK + Power On : L.C.D. Checking.
- 2) HI-CUT + Power On : Reset of Software.
- 3) EMG + Power On : Channel Expansion.
- 4) D. PAGE + Power On : User Define.

## **SPECIAL FEATURES**

### **5. Channel Memory and Recall**

In case of memory recall, it will be recalled by putting the wanted memory channel number at the DTMF key pads located left bottom side. In case of memory writing, press "M.M" button located right bottom side and put the wanted channel number by DTMF key pad entry.

### **6. DTMF Memory**

It means to fix the DTMF tone in advance. RX / TX can be input separately. DTMF Code can be input maximum 5 digits. If DTMF is not fixed, the ON / OFF of DTMF will not be operated.

#### **A. How to input receiving DTMF Code :**

- 1) Press " \* " button shortly, the "DTMF R" will be blinking on the display.
- 2) Input the wanted code.
- 3) Press " \* " button once again.

#### **B. How to input trasmitting DTMF code :**

- 1) Press " \* " button over 2 seconds. "T.DTMF" will be blinking on the display at the DTMF receiving mode.
- 2) Input the wanted code.
- 3) Press " \* " button once again.

### **7. DTMF Function**

Only TX DTMF mode :

- 1) Press "DTMF" button located at the right bottom side.
- 2) "T.DTMF" will be blinking on the L.C.D.