
 <b>Bonso Group</b>	Document Number	ENG_TEL_A002
	Rev #	00
Title : BS004 APPROVAL DOCUMENTS		

# INSTRUCTION MANUAL

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# Owner's Manual

For Model BS004 FRS/GMRS Radio

## FEATURES

- 22 Channels
- 38 CTCSS Tone Codes
- LCD Backlighting
- Squelch Tail Clearance
- Paging/Call
- Scan
- VOX
- Roger Beep
- Baby monitor
- Monitor
- Dual Watch
- Priority Channel Appointment
- Manner Mode
- Low Battery Indicator




## Use and Care

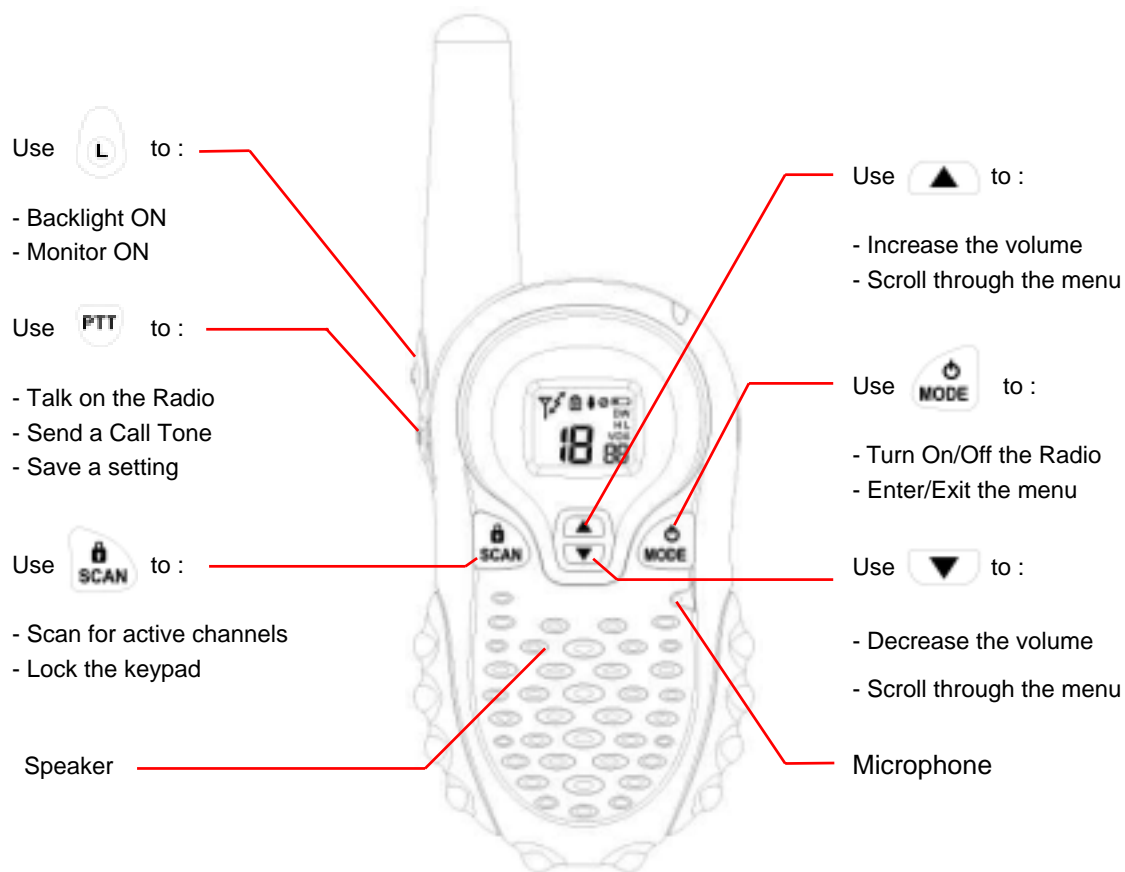
1. **Do not** use alcohol or cleaning solutions to clean the radio.
2. **Do not** immerse the radio in water.
3. Use a soft damp cloth to clean the radio
4. Dry the radio with dry lint-free cloth should it get wet.
5. **Turn off the radio and remove the batteries during long-term storage.**

## Introduction

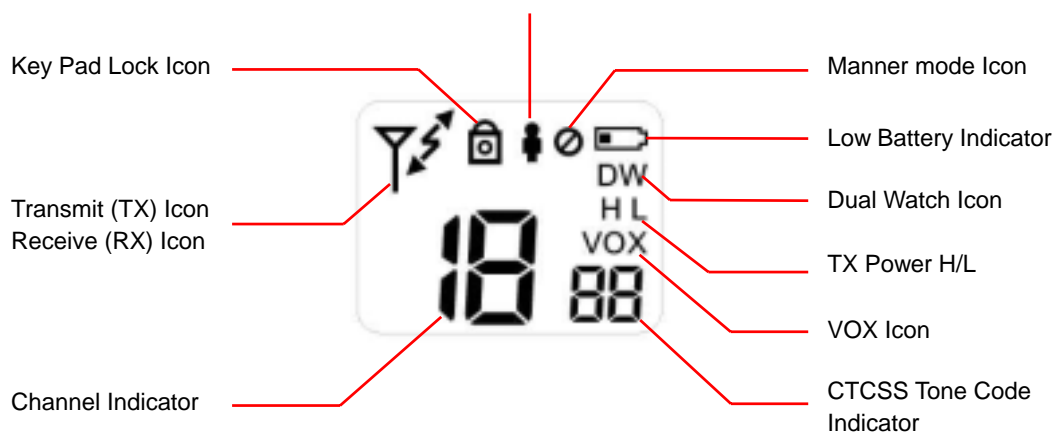
The BS004 represents the state-of-the-art in high-tech engineering. Designed for Family Radio Service operation, this compact package is big in performance. It is a quality piece of electronic equipment, skillfully constructed with the finest components. The circuitry is all solid-state and mounted on a rugged printed circuit board. The BS004 is designed for reliable and trouble-free performance.


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## Control Buttons & Indicators



## LCD Display



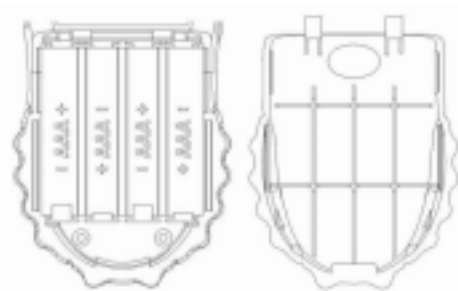
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## Installing Batteries

The BS004 radio operates with either 4 AAA Alkaline Batteries or optional NiMH battery. The belt clip should be removed to ease installation or removal. To install the batteries:

1. With the back of the radio facing you, remove the Battery Cover by sliding it down from the unit.
2. Insert 4 AAA batteries observing the polarity as shown, or install the optional battery. Installing the batteries incorrectly will prevent the unit from operating or can damage the unit.
3. Return the Battery Cover by sliding it up from the unit.

**Note: Batteries are not included.**



## Charging the batteries (Optional NiMH battery Only)



The BS004 is equipped to allow using a rechargeable NiMH battery, which can be recharged by a Adaptor (not included). Batteries must be charged when the low battery icon flashes on the display.

### **Note :**



1. Only use batteries indicated in the manual.
2. Do not attempt to charge Alkaline batteries or any battery pack other than the one indicated in the manual. This may cause leakage and damage the unit.
3. For long term storage of the radio, turn the unit OFF and remove the batteries from the radio.


## Operation

**Power On/Off :**

1. Press the  button for more than 2 second to turn the radio on.
2. Press the  button for over 2 seconds to turn the radio off.

**Volume :**

1. Press the  button to increase the volume.
2. Press the  button to decrease the volume during normal operation.




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**Talking and Listening :** To communicate, all radios in your group must be set at the same channel.

1. For maximum clarity, hold the radio 2 to 3 inches from your mouth.
2. Press and hold **PTT** button and speak in a normal voice into the microphone. The TX icon will appear continuously on the LCD Display when transmitting.
3. To receive messages, release the **PTT** button. The RX icon will appear on the display when your radio is receiving a transmission.



**Call Tone :** The BS004 can transmit a call tone for a fixed length of time. To send a call tone, press the **PTT** twice rapidly. The TX icon will appear during transmitting a call tone and tone can be heard on the speaker for confirmation.

: The BS-004 is able to selection of call sound . To selection the call sound ;

1. Press  button repeatedly until the “ **CA** ” appears on the display.
2. Press  and  buttons to selection the call sound. An “**1**”, “**2**” or “**3**” will appear on the display during setting.
3. To exit the Menu, press **PTT** button

**SCAN :** The BS004 can scan all of the 22 channels to observe for any activity.






To enter the scan mode ;

1. Press the  button for one second.
2. Press the  button again to exit the scan mode.

Your radio will rapidly scan each of the 22 channels and stop on any active channel. When you press the **PTT** button to transmit on an active channel, the scanning function will stop.

To resume scanning, press and hold the  button for one second.

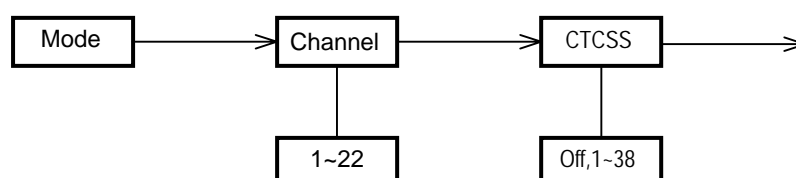
**Keypad Lock :** To avoid accidentally changing the radio operation ;


Press the  button for 2 seconds. The  icon will appear on the display. When the  is on the menu function the  and  button will be disabled. When locked, you will be able to turn the radio off and on, monitor, transmit/receive, and send a call tone.

To unlock, press the  for 2 seconds.

## User Interface




To access the advanced features of the BS-004, your radio has the following menu functions:






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**Note :** *The unit will automatically go to normal mode after 10 seconds of no button activity during menu setting.*

**Channel Selection :** The BS004 has 22 channels available. To change channels:

1. Press the  button until the current channel segment flashes in radio on.
2. Use the  or  buttons to change the channel.
3. Press the **PTT** button to save the new channel.

**CTCSS Tone Code Selection :** The Coded Tone Controlled Squelch System (CTCSS) has 38 Sub-Frequencies. This feature allows you to utilize the coded squelch tones (01~38) within a main channel and enables you to communicate with another party on the same main channel using the same sub-code. Since there are 38 CTCSS sub-channels for each main channel, a different sub-code may be selected for each of the 22 channels. To change the CTCSS sub-channel ;




1. Press the  button repeatedly until the “00” or sub-channel number appears on the small segment display.
2. Press the  and  to select the desired sub-channel for use (01~38).
3. Press the **PTT** button to save the new sub-channel..

The CTCSS mode can be turned off by selecting the “00” icon as the setting.


**Note :** To communicate with other FRS/GMRS units, they must be switched to the same channel and CTCSS sub-code. To communicate with other FRS/GMRS units that do not have sub-codes, switch your unit to the same channel with the sub-code set to “00”.


The CTCSS sub-codes do not prevent others from hearing your transmission. This will only allow you to ignore all traffic on a given channel not using the same sub-code.



**Dual Watch :** The BS004 can select the main channel and assistant channel, then these two channels can take turns the receipt. To select the DW mode ;

1. Press the  button repeatedly until the “DW” appears on the display.
2. Press the  and  buttons to set the assistant channel.
3. Press the **PTT** button to save the assistant channel.




**VOX (Voice Operated Transmission) :** The BS004 communicator is equipped with a user adjustable Voice Operated Transmitter (VOX) that can be used for automatic voice transmission. In this convenient mode, transmission is automatically initiated by speaking into the microphone. There is no need to push the **PTT** button. To enable the VOX ;

1. Press the  button repeatedly until the “VOX” appears on the display




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2. Press the  and  buttons to set the VOX on or off. An “on” or “oF” will appear on the display during setting.
3. To exit the Menu, press **PTT** button.




**Beep Tone On/Off :** To enable the Beep tone,

1. Press the  button repeatedly until the “bp” appears on the display.
2. Press the  and  to set the Beep tone on or off. An “on” or “oF” will appear on the display during setting.
3. To exit the Menu, press **PTT** button.

**Roger Beep Tone :** Whenever you release the **PTT** button, a “Roger Beep” tone may be transmitted to let your friends know you are finished talking. To enable the Roger Beep ;




1. Press the  button repeatedly until the “rb” appears on the display.
2. Press the  and  to set the Roger Beep tone on or off. An “on” or “oF” will appear on the display during setting.
3. To exit the Menu, press **PTT** button.

**TX Power Hi/Low :** To select the TX Power Hi or Low;




1. Press the  button repeatedly until the “Po” appears on the display.
2. Press the  and  buttons to set the priority channel. . An “Hi” or “Lo” will appear on the display during setting.
3. Press the **PTT** button to save the priority channel.


**Manner Mode :** In the silent place, if the call receipt is O.K, it can be sent out short beep.

To enable the Manner mode,




1. Press the  button repeatedly until the “M” appears on the display.
2. Press the  and  buttons to set the Manner mode on or off. An “on” or “oF” will appear on the display during setting.
3. To exit the Menu, press **PTT** button.



**Baby Monitor Mode :** The BS-004 is able to monitoring the baby. To enable the Baby monitor ;


1. Press the  button repeatedly until the “B” appears on the display.
2. Press the  and  buttons to set the Baby monitor on or off. An “oF” , “b1” or “b2” will appear on the display during setting. The “b1” is master (TX /Baby side), “b2” is slaver (RX).
3. To exit the Menu, press **PTT** button.

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**Priority Channel Appointment :** The BS004 can set the channel user want to use. To select the Priority Channel Appointment function;

1. Press the  button repeatedly until the “**PC**” appears on the display.
2. Press the  and  buttons to set the priority channel. An “**oF**” , “**1~22**” will appear on the display during setting.
3. Press the **PTT** button to save the priority channel.

**Monitor Mode :** To enable the monitor mode, press the  button for 2 seconds. To exit the this mode , press PTT button or press the  button for 2 seconds..

**Backlight Display :** The BS004's LCD backlight display automatically lights up for 5 seconds with the press the  button.

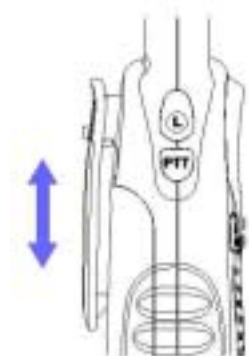
#### Belt Clip :

##### To install the belt clip:


Slide the clip up into the slot on the back of the radio until the latching mechanism clicks.

##### To remove the belt clip:

Pull the latching tab outward, then gently slide the belt clip down toward the bottom of the radio.





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## TROUBLESHOOTING

Problems	Solution
No Power	- Check the battery installation and/or replace batteries
Cannot Receive Messages	- Confirm the radios have the same channel settings. - Make sure that you are within range of the other transceivers. - Buildings and other obstructions may interfere with your communication.
Radio is not responding to button presses	- Make sure key lock is not on. See "Keypad Lock". (Page 31) - Radio might need to be reset. Turn power off then on.
Display is dim	- Reposition or replace batteries.
Charger not functioning	- Contacts on the bottom of the radio may require cleaning. - Ensure the outlet the charger is plugged into is functioning properly. - Check that the batteries are installed in the radio properly.

## Technical Specification

### A. Specification


Channels	: 22 Channels
Operating Frequency	: UHF 462.5625 ~ 467.7125 MHz
Power Source	: 4 AAA Alkaline or rechargeable Ni-MH Batteries
Output Power	: Typically 2 Watts

### B. Current Drain :

Receive	: 145 mA max
Transmit	: 400 mA max
Standby	: Average 13 mA

### C. Operating Time : Based on 900mAh (Alkaline battery) capacity

Talk Time	: 2~2.5 hours
Receive Time	: 12 hours
Standby Time	: 69 hours
Combined (5-5-90 duty) Time	: 23 hours

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### Channel Frequency Chart

CH. No	CH. Freq. (MHz)	CH. No	CH. Freq. (MHz)
1	462.5625	12	467.6625
2	462.5875	13	467.6875
3	462.6125	14	467.7125
4	462.6375	15	462.5500
5	462.6625	16	462.5750
6	462.6875	17	462.6000
7	462.7125	18	462.6250
8	467.5625	19	462.6500
9	467.5875	20	462.6750
10	467.6125	21	462.7000
11	467.6375	22	462.7250

- Note**
1. Channels 1 thru 14 transmit on FRS frequencies.
  2. Channels 15 thru 22 transmit on GMRS frequencies.

### Continuous Tone Coded Squelch System Tone Frequencies (in Hz)

CTCSS	Freq. (Hz)	CTCSS	Freq. (Hz)	CTCSS	Freq. (Hz)
1	67.0	14	107.2	27	167.9
2	71.9	15	110.9	28	173.8
3	74.4	16	114.8	29	179.9
4	77.0	17	118.8	30	186.2
5	79.7	18	123.0	31	192.8
6	82.5	19	127.3	32	203.5
7	85.4	20	131.8	33	210.7
8	88.5	21	136.5	34	218.1
9	91.5	22	141.3	35	225.7
10	94.8	23	146.2	36	233.6
11	97.4	24	151.4	37	241.8
12	100.0	25	156.7	38	250.3
13	103.5	26	162.2	oF	No Tone

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## **CAUTIONS**

### **IMPORTANT SAFETY INFORMATION**

YOUR WIRELESS HAND-HELD PORTABLE TRANSCEIVER CONTAINS A RADIO FREQUENCY TRANSMITTER. WHEN THE PTT BUTTON IS PUSHED, THE TRANSMITTER SENDS OUT RF SIGNALS. THE DEVICE IS AUTHORIZED TO OPERATE AT A TRANSMIT DUTY FACTOR NOT EXCEEDING 50% USING ALKALINE “AAA” SIZE BATTERIES TO COMPLY WITH FEDERAL COMMUNICATIONS COMMISSIONS (FCC) RF EXPOSURE SAFETY LEVEL GUIDELINES FOR HAND-HELD WIRELESS DEVICES.

FOR BODY-WORM OPERATION, THIS DEVICE HAS BEEN TESTED FOR SAR (SPECIFIC ABSORPTION RATE) AND MEETS THE FCC RF EXPOSURE GUIDELINES WHEN USED WITH THE ACCESSORIES SUPPLIED OR DESIGNATED FOR THIS DEVICE BY THE MANUFACTURER. USE OF OTHER ACCESSORIES MAY NOT ENSURE COMPLIANCE WITH FCC RF EXPOSURE GUIDELINES. USE THE MANUFACTURER-SUPPLIED ANTENNA ONLY. UNAUTHORIZED ANTENNAS, MODIFICATIONS, OR ATTACHMENTS COULD DAMAGE THE TRANSMITTER AND MAY VIOLATE FCC REGULATIONS. TO MAINTAIN COMPLIANCE WITH THE FCC'S RF EXPOSURE GUIDELINES, HOLD THE TRANSCEIVER AT LEAST 1 INCH (2.5 CENTIMETERS) FROM YOUR FACE AND SPEAK IN A NORMAL VOICE, WITH THE ANTENNA POINTED UP AND AWAY.


#### **GMRS LICENSE ;**

USE OF GMRS RADIOS WITHIN THE UNITED STATES REQUIRES A FCC GMRS LICENSE. AN INDIVIDUAL OF 18 YEARS OF AGE OR OLDER, WHO IS NOT A REPRESENTATIVE OF A FOREIGN GOVERNMENT IS ELIGIBLE TO APPLY FOR A GMRS SYSTEM LICENSE. YOU WILL NEED TWO FORMS FROM THE FCC-FCC FORM 159 AND FCC FORM 605 MAIN FORM AND SCHEDULE F.

YOU CAN FIND THE FORMS ONLINE AT <http://www.fcc.gov/formpage.html> OR CALL 1-800-418-3676.

## **FCC NOTICE**

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.  
 OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:  
 (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND  
 (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,  
 INCLUDING INTERFERENCE THAT MAY CAUSE UNDERSIRED OPERATION.

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer of an experienced radio/TV technician for help.

**NOTE :** The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.