

Chatter **Box!**™

The Person ~ to ~ Person Sports Communication System



FRS X2

OWNERS MANUAL

FRS X2



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Feature Highlights

Thank you on your recent purchase of the ChatterBox model FRS X2. The FRS X2 is a micro size 14 channel portable FM transceiver constructed with a microprocessor controlled, temperature compensated Phase Locked Loop (PLL) frequency synthesizer. The radio features a double conversion receiver and a direct FM transmitter modulator. A special integrated circuit provides support to sub-audible signaling (CTCSS) and most of the receiving parts are switched off periodically in the power saver mode to reduce battery current drain during standby. The FRS X2 is FM transceiver operating 462MHz-467MHz. With the output power of 0.5 Watt, the radio is capable of communicating up to 2 miles. Now you can share your thoughts, as well as the road or trail, with all your friends or even your passenger. The ChatterBox will greatly enhance your riding experiences and can even increase your safety in certain situations.

The ChatterBox FRS X2 is the most technologically advanced state of the art two way radio with a range of up to 2 miles.

Sophisticated voice activated circuitry makes the FRS X2 easy to use. All you have to do is talk.

You can operate this unit freely on each of the 14 channels and 38 talk groups without a complicated FCC license.

Full duplex intercom for private communication between rider and passenger is possible.

Transmission between one rider/passenger to another rider/passenger is possible.

Power is supplied by a built in rechargeable Ni-MH battery.

Enjoy the sound of music in true stereo sound which automatically mutes during communication. An optional audio cord is needed.

An optional call cord is available to allow you to answer incoming calls from your cellular phone, (call for applications).

An optional sport headset is available for unlimited applications; Camping Biking, Skiing, Snowboarding, Hunting, Fishing, Hiking, etc.

Unpacking and Inspecting

Check that all contents are in good order. If any parts of the equipment has been damaged in transit or is missing please contact our customer service department immediately at (562) 407-2188.

1. FM transceiver unit
2. Stereo headset and microphone
3. Rechargeable Ni-MH battery
4. AC home charger
5. PTT (Push-to-Talk-Button)
6. Mounting Bracket with allen wrench, protective rubber, 2 small screws, and 2 large screws
7. 2 Foam speaker covers
8. 2 Velcro discs
9. Wooden stick



Initial Set-Up

The rechargeable Ni-MH battery comes initially charged from the factory. We recommend that the battery be pre-conditioned by allowing it to drain completely before applying an additional **14 hr. full charge**. To reduce the risk of damage to the battery do not use any other charger except the one supplied with the FRS X2. Please note the battery should have a full charge before the unit is stored for a long period of time.

If you use the unit after leaving it unused for a long period of time or when you feel that the durability of the battery becomes shorter than before, you can try to restore the battery to the original state by following the steps outlined below.

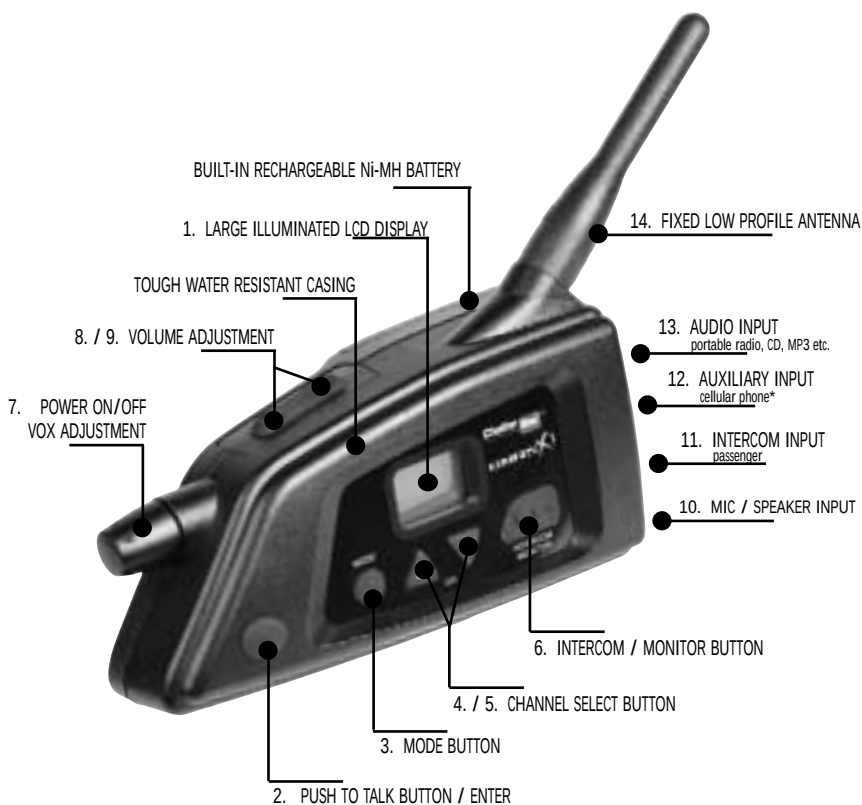
1. Discharge the battery completely by leaving the unit on and setting the VOX sensitivity to high (next to a TV or radio or in a noisy room) until the battery is completely drained.
2. Charge the battery completely.
3. Discharge the battery again by following Step 1.
4. You can try to restore the battery to the original state by repeating Steps 1 and 2 at least three times.

NOTE: WHEN YOU SPEAK INTO THE MICROPHONE AND HEAR A CHIME IT IS TIME TO RECHARGE THE BATTERY.



Features:

FRS X2



1. Illuminated LCD (Liquid Crystal Display)
2. PTT (Push-to-Talk Button)/Enter
Hold down to transmit and release to receive.
Allows you to set different functions.
3. Mode button
Press to change modes.
Allows you to program different functions.
4. Up button
To select the channel and option in mode operation.
5. Down Button
To select the channel and option in mode operation.
6. Intercom/Monitor button
Allows private (unbroadcasted) driver to passenger communication.
Allows you to listen in on a channel for weak signals.
7. Power On/Off knob and VOX setting
To turn the unit on/off and to select the VOX sensitivity level.
8. Volume Up button
To increase the volume level.
9. Volume Down button
To decrease the volume level.
10. Microphone and Speaker input
For the driver's headset.
11. Intercom input
For the passenger's headset.
12. Auxiliary input
For a cell phone or external PTT (Call for applications.)
13. Audio input
For an external audio source (ie. Walkman, CD, MP3 player etc.).
14. Fixed low profile Antenna.

Operation



LCD	description
1	MODE
2	INTERCOM MODE
3	SCAN MODE
4	VOX
5	BATTERY METER
6	MELODY
7	KEY LOCK
8	TALK GROUP
9	CHANNEL

Power On/Off

Turn the VOX sensitivity dial clockwise to turn the unit on. The radio will emit a tone to let you know the unit is on.

Turn the VOX sensitivity dial counterclockwise to turn the unit off. The radio will emit a tone to let you know the unit is off.

VOX Sensitivity

The VOX dial controls the sensitivity of the microphone. As the dial is turned clockwise, the sensitivity increases. This unit has circuitry and software that senses when you speak through the headset and will automatically transmit. When the surrounding noise levels increase, the mic may be activated unintentionally. To reduce the sensitivity of the mic, turn the dial counterclockwise. When the VOX is set at a low sensitivity position, it will require your voice to be slightly louder in order to activate the microphone transmission.

Channel Select

Choose the desired channel by pressing Up/Down button. Then press the PTT button to enter.

Volume Level Select

Choose the desired volume level with the Up/Down button. Then press the PTT button to enter.

Talk Group

Press the Mode button once, while the number is blinking choose the desired “talk group” by pressing Up/Down button. Then press the PTT button to enter.

Beep On/Off Select

Press the Mode button twice, choose beep On/Off by pressing the Up/Down button. Then press the PTT button to enter.

Key Lock On/Off Select

Press the Mode button three times, choose key lock On/Off by pressing the Up/Down button. Then press the PTT button to enter.

Scan

Press the Mode button four times, while the channel is blinking press the Up button to scan up or press the Down button to scan down. The radio stops scanning after detecting a signal and remains on the same channel until the signal drops out for 2 seconds. Then press the PTT button to stop scanning.

Power Save Level Select

Press the Mode button five times, choose the desired power save level by pressing the Up/Down button and press the PTT button to enter. “00” power save off, “01” normal power save, “02” high power save.

Intercom

Press the Intercom button for 3 seconds to switch to intercom mode. You will then hear a chime letting you know that the intercom has been activated. Press the same button again to cancel and start regular transmission.

Monitor

Press the Intercom button to listen in on a channel for weak signals. Press it again to cancel.

Audio-In Jack

Connect your desired audio source (i.e. Walkman, CD, MP3 player etc.) with our optional audio cord. The music will automatically mute when you transmit or receive.

AUX-In Jack

Connect your cellular phone to the AUX-In jack with our optional call cord. When your phone rings press the external call button, located on the call cord, to receive. Press the external call button again to end the call. Both rider and passenger can participate in the conversation.

Battery Indicator

3-bars indicates a full charge.

2-bars indicates half a charge.

1-bar indicates a low charge.

NOTE: WHEN YOU SPEAK INTO THE MICROPHONE AND HEAR A CHIME IT IS TIME TO RECHARGE THE BATTERY.

Optional Accessories

Full Face Headset

Replacement headset or passenger headset for full face helmets.

Open Face Headset

Replacement headset or passenger headset for open face helmets.

Sports Headset

Non helmet headset for unlimited applications.

Headset Extension Cord

Connect passenger headset to main unit or used to mount your unit other than your helmet.

Audio Cord

Connect your desired audio source (Walkman, CD, MP3 Player etc.)

Call Cord

Connect your cellular phone (Call for applications.)

Rechargeable Ni-MH Battery

Internal replacement battery.

External Battery Pack

Belt mounted battery pack (4 alkaline batteries.)

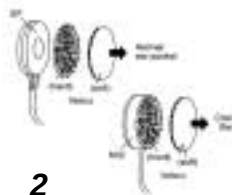
12 Volt Power Filter Cord

Connect your ChatterBox FRS X2 to a 12 Volt battery.

Headset Installation

1. For the open face headset, use the plastic tie clip to secure the windsock. For the full face headset, microphone covers come pre-installed.

2. Helmets without speaker pockets. Attach the foam covers to the speakers respectively (Drawing 1). Attach the hard velcro disk to the back of the speakers (Drawing 2). Attach the soft velcro disks to the helmet liner. The position of the soft velcro disks will determine the position of the speakers.



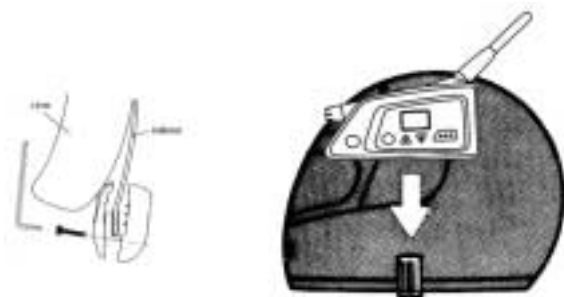
3. Attach the right speaker (the long cord) to the soft velcro disk that you applied to the helmet liner. Attach the left speaker (the short cord) to the soft velcro disk that you applied to the helmet liner. For helmets with speaker pockets, simply insert the speaker in the pocket. Then use the wooden stick to gently tuck the speaker wire between the headliner and the shell (Drawing 3).



4. For full face headset. Attach the soft rectangular velcro piece to the chin bar. Keep in mind the position of this velcro will determine the position of the mic. Apply the mic to the soft rectangular velcro. Then use the wooden stick to gently tuck the mic wire between the headliner and the shell (Drawing 4).

Main Unit Installation

Fasten the mounting bracket snugly to the bottom left side of the helmet with the bolts supplied. Make sure the rubber pad is placed between the outer mounting bracket and the outer shell of the helmet. Then align the mounting bracket with the grooves on the back side of the main unit. Slide down the main unit on to the mounting bracket until it latches firmly into place.



Headset Connection

Insert the Mini-DIN plug of the driver headset into the microphone speaker jack on the back of the main unit. Insert the flat side of the main plug facing you.



How to Transmit and Receive

VOX DESCRIPTION

The VOX system on your new ChatterBox® enables the microphone to be voice activated. This means that when you speak the microphone will open automatically and transmit your voice. It is best to think of the VOX as the microphone sensitivity setting.

Turn the power switch to on. If you turn the VOX sensitivity dial clockwise and speak through the microphone, the VOX operates and automatically transmits. You will know you are transmitting when you hear yourself in the headset speakers. Operation is totally automatic, no external controls are required.

To receive, just listen in silence. If your mic is activated, you cannot receive. Simultaneous transmission is not possible. You cannot talk (activate your VOX) and hear a transmission from another ChatterBox at the same time.

VOX FUNCTION

The VOX adjustment knob on the front of your ChatterBox® is the single most important control on the unit. When set on “Hi” (high) the microphone will easily pick up a normal speaking voice. Never begin riding with the VOX set on “Hi”. This will cause the microphone to constantly open and thus prevent proper communications.

When set between the “Hi” (high) and “Lo” (low) the microphone sensitivity is reduced thus requiring a louder voice to activate. This is necessary to prevent the microphone from opening due to wind noise or loud exhaust systems, both of which can prematurely open the microphone. When the microphone opens prematurely the channel is held open which causes a hissing noise in everybody’s headset and prevents users from communicating. This is a situation many first time users experience while learning to properly adjust the VOX. (To eliminate this situation, it is strongly recommended that first time users use a PTT “push to talk” button.) At the full “Lo” (low) setting the microphone is actually shut off so no transmission is possible.

Vox Adjustment Instruction Sheet

VOX ADJUSTMENT PRACTICE

It is highly suggested that each new user practice adjusting their radio before riding. It's simple, quick and effective.

- A. With the helmet off, turn the VOX knob to the “Hi” (high) sensitivity position.
- B. Place the helmet on your head (with the ChatterBox® fully installed).
- C. Speak into the microphone in a normal voice. You should hear your voice in the speakers. Adjust the volume to a comfortable setting. If you don't hear anything turn the volume up. If you still don't hear anything check all the wire connections and make sure the VOX is set to the full “Hi” position.
- D. Next, continue to speak while turning the VOX knob towards the “Lo” setting. As you do this you'll notice that you must speak louder to activate the microphone.
- E. When the knob is turned almost to “Lo”, you'll find that you must talk very loud to activate the microphone. This is where the VOX must be set during high speed riding or in very loud wind conditions.
- F. Next, turn the VOX knob to the full “Lo” position. When the VOX is set at this position the microphone is off and no transmitting is possible.



It is highly suggested that you always begin your rides with the VOX set close to the full “Lo” setting. Once under way you can then fine tune the sensitivity.

Trouble Shooting

Problem 1. Cutting out during transmission.

Solution 1. Adjust the mic sensitivity to a higher setting (clockwise) or speak louder.

Solution 1. Position the mic directly in front of your lips.

Problem 2. Not receiving.

Solution 2. Adjust the mic sensitivity to a lower setting (counter clockwise).

Problem 3. Short operating range.

Solution 3. Make sure you're clear of power lines. Foliage, hills, and buildings will also reduce your range.

Problem 4. Road and wind noise while transmitting.

Solution 4. Add foam or cotton directly to the tip of the mic.

WARNING

Your wireless handheld portable transceiver contains a low power transmitter. When the PTT button is pushed it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50%. In August 1996, the Federal Communications Commissions (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices.

Important: To maintain compliance with the FCCs RF exposure guidelines hold the transmitter at least 2 inches (5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away. If you wear the handset on your body while using the headset accessory, use only the supplied belt clip for this product and ensure that the antenna is at least 2 inches (5 centimeters) from your body when transmitting. If the distance between the antenna and the body is LESS THAN 2" (5 cm) **DO NOT TRANSMIT IN THE BODY WORN CONFIGURATION.** Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violated FCC regulations.

Technical Specifications

General

- | | |
|--------------------------|---|
| 1. Frequency range | 462.550 MHz– 462.725 MHz |
| 2. Modulation type | 8KOF3E (FM) |
| 3. Channel capacity | 14 channels |
| 4. Channel spacing | 12.5KHz |
| 5. Power supply | DC 4.8V; Ni-Mh rechargeable pack |
| 6. Current drain | Transmitter (0.5W); <600mA
(Ni-MH rechargeable pack)
Receiver (0.5 W); <300mA |
| 7. Battery life | 12 hrs. talk time;
20 hrs. stand-by time |
| 8. Operating temperature | -20 C + 60 C |
| 9. Dimensions | 65(H) x 132(W) x 39(D) mm |
| 10. Weight | 8 oz. (with battery) |

Transmitter

- | | |
|-------------------------|---|
| 1. Power output | 0.5W |
| 2. Frequency stability | Better than +/- 5ppm within
operating temperatures |
| 3. Hum & Noise | -40dBc (with 300Hz to 3KHz audio filter) |
| 4. Spurious & Harmonics | -60dBc |
| 5. Audio distortion | less than 5% (1KHz tone 60% modulation) |

Receiver

- | | |
|---------------------------------|-----------------------|
| 1. Sensitivity (12dB SINAD) | .25uV (-119dBm SINAD) |
| 2. Selectivity | -60dB |
| 3. Inter-modulation | -60dB |
| 4. Spurious and image rejection | -60dB |
| 5. Maximum audio output | more than 200mW |
| 6. Audio distortion | less than 5% |

HJC ChatterBox™ Limited Warranty

ChatterBox warrants that each new ChatterBox™ will be free from defective materials and workmanship for a period of one (1) year from date of original purchase. ChatterBox will remedy any such defect by repair or replacement (at our option) of the unit, provided the unit is delivered to the address listed below, intact, for examination, with all transportation charges prepaid and accompanied by a copy of the original retail sales receipt. The provisions of this warranty shall not apply to any unit which has been subject to misuse, neglect, incorrect installation, unauthorized modification, accident, or has been repaired or altered outside of our factory. The express warranty contained herein is in lieu of all other warranties, expressed or implied or statutory, including without limitation any warranty of merchantability or fitness for a particular use. In no event will ChatterBox be liable to the buyer for any damages, including special, incidental, indirect, or consequential.

CAUTION

**ANY CHANGES OR MODIFICATIONS IN CONSTRUCTION OF THIS
DEVICE WHICH ARE NOT EXPRESSLY APPROVED BY THE PARTY
RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S
AUTHORITY TO OPERATE THE EQUIPMENT**

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