cardo

Bluetooth 5.2

FREECOM 4x MANUAL



LIVE INTERCOM

OPERATED BY NATURAL VOICE

SOUND BY JBL

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1. INTRODUCTION

Thank you for choosing the Cardo FREECOM 4x communication and entertainment system for motorcycle helmets.

We wish you a great FREECOM 4x experience and encourage you to visit www.cardosystems.com/support/freecom-4x/ regarding any questions, suggestions or comments you may have.

If you have not yet installed the FREECOM 4x unit on your helmet, please install it as described in the Installation Guide provided in the package. You can also watch the installation video accessible on that link www.cardosystems.com/freecom-x-installation/

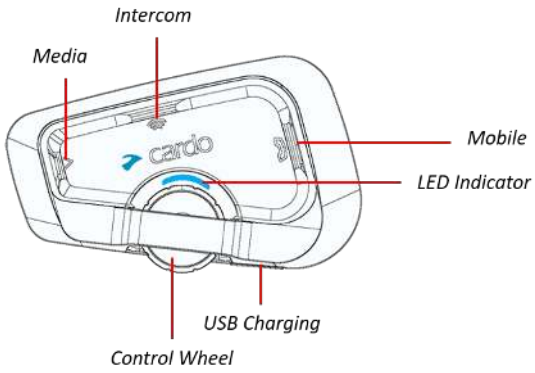
For easy reference while on the road, download the Pocket Guide from www.cardosystems.com/wp-content/uploads/guides/pocket/en/freecom4X.pdf

And don't forget to register your FREECOM 4x. Registering your FREECOM 4x allows you to download software updates, enjoy new features that are offered from time to time, and assures smooth handling of warranty issues you may have. Also rest assured: Cardo does not share your details with others.

This is version 1.0 of the FREECOM 4x Manual. The latest version of the manuals in your preferred language and various tutorials can be found at www.cardosystems.com/wp-content/uploads/guides/manual/en/freecom-4x.pdf

2. GETTING STARTED

2.1 GETTING TO KNOW YOUR FREECOM 4X

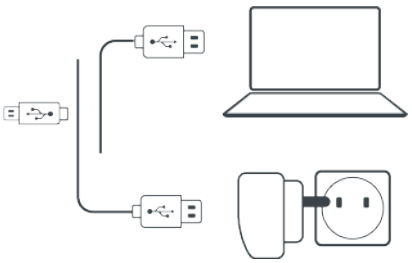


2.2 CHARGING YOUR FREECOM 4X

- Make sure that your FREECOM 4x battery is charged for at least 4 hours before initial use.

To charge the unit:

1. Using the supplied USB cable, connect your computer or wall charger to the USB port on your FREECOM 4x.



2. Fast charging
   - You will have 2 hours of talktime after 20 mins of charging. (1.5 - 2 hours for full charge).
3. Charge while riding:

   In case you need to charge it, connect your unit to a power outlet. You can continue charging while riding.

   The battery of your FREECOM 4x supports up to 13 hours of talktime.

- Charging with the wall charger is faster than via a computer USB port.
- Charging your unit switches it off automatically. To use your unit while it is being charged, switch it on. (see Switching Your Unit On/Off on page 5).

While charging, the LED indicates the charging status as follows:

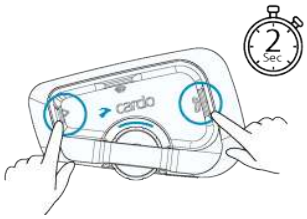
- Red LED on — charging
- Red LED off — charging complete

- **TIP**: You can check the battery charge at any time by saying "**Hey Cardo, battery status**."

2.3 SWITCHING YOUR UNIT ON/OFF

To switch your FREECOM 4x on:

- Press both and for **2 seconds**.



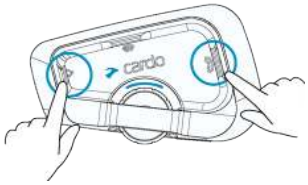
The speaker plays an ascending tone and a voice message greets you.

The LED confirms your FREECOM 4x is on:

- Normal battery — LED flashes blue three times.
- Low battery — LED flashes blue three times, then red.
- Charging — LED flashes red, blue and purple.

To switch your FREECOM 4x off:

- Press both and for **2 seconds**.



The LED flashes red three times, confirming that your unit is switching off. The speaker plays a descending tone and a voice message.

2.4 USING YOUR FREECOM 4X

You can operate the various features of your FREECOM 4x in the following ways:

- Press a button or combination of buttons on the unit
- Use the Cardo Connect App on your mobile device (once it is paired with the unit)
- Use natural voice operation (by saying a command, for example **"Hey Cardo, Radio On"**)

2.5 PAIRING YOUR UNIT TO BLUETOOTH DEVICES

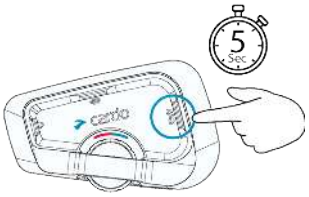
Your FREECOM 4x has two Bluetooth channels for connection to Bluetooth devices such as mobile phones, GPS devices, and Bluetooth music players with A2DP.

To connect your unit to a Bluetooth device, you must first pair them. Once paired, they automatically recognize each other whenever they are within range.

- If you are pairing more than one device, Cardo recommends that you pair the mobile phone to channel 1, and the additional device (such as GPS, music player or additional mobile phone) to channel 2.
- If you are pairing the unit to more than one mobile phone, the phone paired with channel 1 is the default phone for outgoing calls.

To pair Bluetooth channel 1 to a mobile phone:

1. Enable Bluetooth on the mobile phone.
2. On the unit in standby mode, press for **5 seconds**.



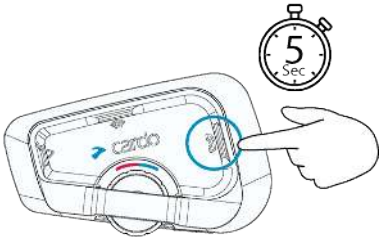
The LED flashes red and blue.

3. On your mobile phone, search for Bluetooth devices.
4. When your FREECOM 4x appears in the list of available devices, select it.
   If prompted for a PIN or Passkey, enter 0000 (four zeros).

   The phone confirms that pairing has succeeded and the LED flashes purple for 2 seconds.

To pair Bluetooth channel 2 to another Bluetooth device:

1. Enable Bluetooth on the device (for example, your mobile phone, GPS device, or music player).
2. On the unit in standby mode, press for **5 seconds**.



The LED flashes red and blue.

3. Do the following:

   a. GPS device: Tap . The LED flashes red and green.

   b. Mobile phone: Tap . The LED flashes red and green. Roll the Control Wheel to the left.

3. On the device you are pairing, search for Bluetooth devices.

4. When your FREECOM 4x appears in the list of available devices, select it.
   If prompted for a PIN or Passkey, enter 0000 (four zeros).

   The device confirms that pairing has succeeded and the LED flashes purple for 2 seconds.

- If pairing is not completed within 2 minutes, the unit automatically returns to Standby.
- Not all Bluetooth mobile phones broadcast Bluetooth Stereo music (A2DP) even if the phone has an MP3 player function. Consult your mobile phone's user manual for more information.
- Not all Bluetooth GPS devices allow connection to Bluetooth audio devices. Consult your GPS User Manual for more information.

3. CARDO CONNECT APP

The Cardo Connect App enables you to configure the settings of your FREECOM 4x. In addition, the App offers you remote controlled operation from the screen of your smart.phone.

3.1 REGISTERING YOUR UNIT

1. Download the Cardo Connect App.

Download on the App Store

GET IT ON Google Play

2. Register your FREECOM 4x.



3. Select your language.



3.2 UPDATING YOUR UNIT

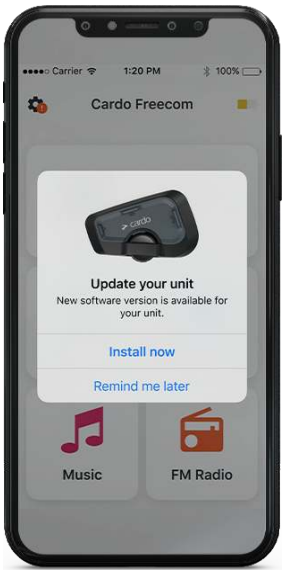
Before using your unit for the first time, and whenever a new software update is available, make sure to have the latest software update. Updating with the latest software keeps your unit free of bugs and provides you with additional new functionalities.

Your FREECOM 4x can be updated Over the Air, via Cardo Connect app.

To update your FREECOM 4x unit with the Cardo Connect App:

Whenever a new software update is available, a pop-up will open on your App screen. Press Install and follow the on-screen instructions.

If you press Remind me later, the pop-up will re-open the next day.



To update your FREECOM 4x at any moment

1. Open Cardo Connect app.
2. Press **Settings**.
3. Select your unit.
4. Select the software version.
5. Press **Update Now**.

When the update is finished, press **Finish** to go back to the main screen.

To update your FREECOM 4x unit with your computer:

1. Download and install the Cardo Update tool https://www.cardosystems.com/update
2. Open Cardo Update.
3. Register (first time only).
4. Connect the unit to the computer using an USB cable and update the firmware.

- Cardo Update on Windows / Mac - minimum requirements - Windows® 7 / macOS X 10.8

4. ON THE ROAD

FREECOM 4x makes it easy for you to receive phone calls and listen to music in a convenient and safe manner.

4.1 BASIC AUDIO FUNCTIONS

The basic audio functions are the same whether you are listening to music, speaking on the intercom, or having a phone conversation.

To turn the volume up:

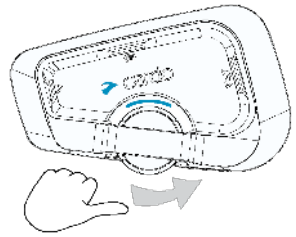
- Roll the Control Wheel to the left or say **"Hey Cardo, volume up"**.



An increasingly louder tone is played on the speaker until you reach the maximum volume, as indicated by the maximum volume tone.

To turn the volume down:

- Roll the Control Wheel to the right or say **"Hey Cardo, volume down"**.



An increasingly quieter tone is played on the speaker until you reach the minimum volume, as indicated by the minimum volume tone.

To mute the microphone completely and lower the speaker volume to the minimal level:

- Roll the Control Wheel outward then inward or say **"Hey Cardo, mute audio"**.

To unmute the microphone and raise the speaker volume to the previous level:

- Roll the Control Wheel in any direction or say **"Hey Cardo, unmute audio"**.
  An ascending tone is played on the speaker.

4.2 MAKING AND RECEIVING PHONE CALLS

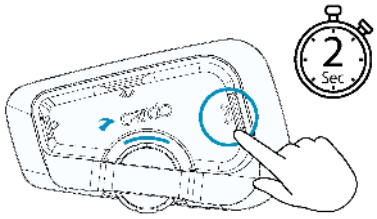
You can use your mobile phone to make and receive phone calls while paired to your FREECOM 4x.

You can make a hands-free call using your mobile phone's voice dial option or using the Cardo speed dial or redial last call options.

To make a phone call:

- To dial using your mobile phone's voice dial option, tap  or say **"Hey Siri"** (if you are using an iOS device) or **"OK Google"** (if you are using an Android device), then make your call as per the instructions for your mobile device.

- To redial the last number called on your mobile device. Press the mobile button  for 2 secondsor say **"Hey Cardo, redial number**.

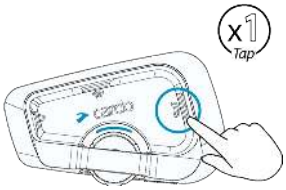


- To dial your preset speed dial number, tap  twice or say **"Hey Cardo, speed dial"**. The speed dial number must be set in the Cardo Mobile App prior to use.

> - If you connected two mobile phones to your unit, you cannot make an additional phone call from the other phone while a phone call is already active.
> - During Bluetooth intercom 3 or 4-way calls, riders that are connected on both channels A and B cannot receive phone calls.

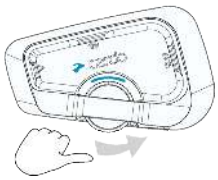
To answer a call:

- Tap the mobile button  or tap the Control Wheel, or say **"Answer**.



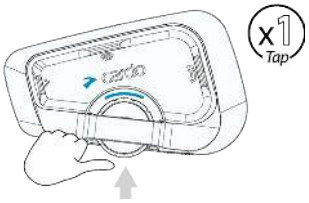
To ignore a call:

- Roll the Control Wheel outward or say **"Ignore"**.



To end a call:

- Tap the Control Wheel.

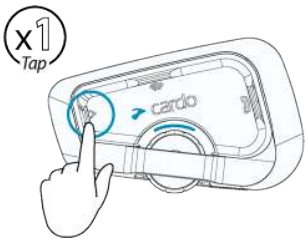


4.3 STREAMING MUSIC

You can stream music from your paired device to your FREECOM 4x.

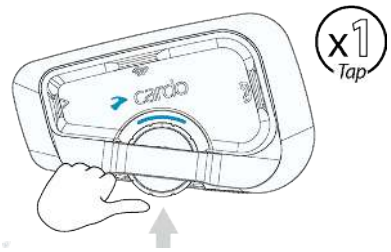
To start music streaming from your paired device:

- Tap the Media Button or say "**Hey Cardo, music on**" .



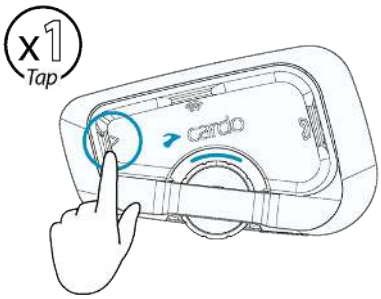
To stop music streaming:

- Tap the Control Wheel or say **" Hey Cardo, music off**.



To skip to the next track (while streaming):

- Tap the media button or say "**Hey Cardo, next track**".



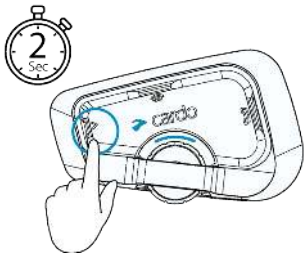
To skip back to the previous track (while streaming):

- Tap the media button twice or say "**Hey Cardo, previous track**".



To toggle between FM and ATDP music:

- Press for 2 seconds.

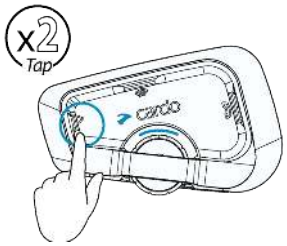


4.4 LISTENING TO FM RADIO

The FREECOM 4x is equipped with a built-in FM radio.

To turn on the FM radio:

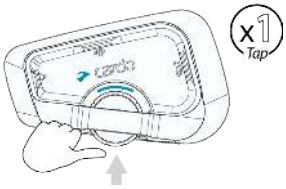
- Tap twice or say "**Hey Cardo, radio on**" .



When you switch on your FM radio, the station that was playing when you last switched off resumes playing.

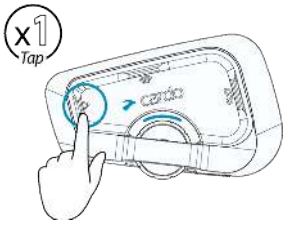
To turn the FM radio off:

- Tap the Control Wheel or say "**Hey Cardo, radio off**".



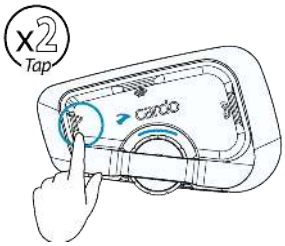
To skip to the next station:

- Tap ⏭ once or say "**Hey Cardo, next station**".



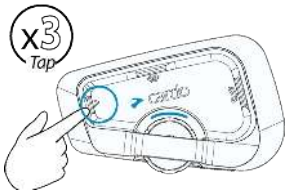
To skip back to the previous station:

- Tap ⏭ twice or say "**Hey Cardo, previous station**.

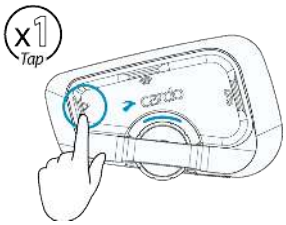


To scan for and select a station:

1. Tap ⏭ 3 times.
   The FM radio plays each station that it finds for several seconds.

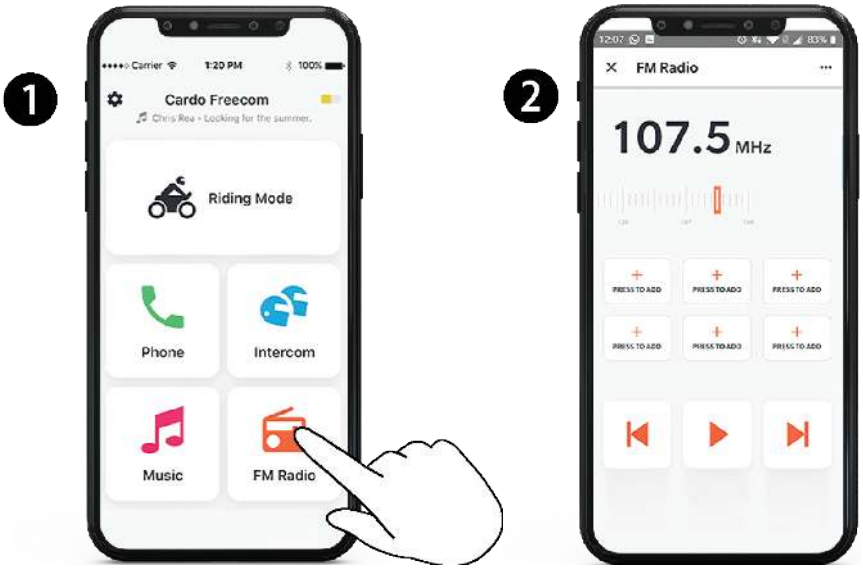


2. When you hear a station you want to select, tap ⏭.



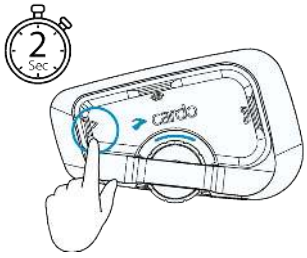
To store a scanned station in the active preset:

- Use the Cardo Connect App on your mobile device.



To toggle between FM and ATDP music:

- Press for 2 seconds.



4.5 SWITCHING MUSIC SOURCES

If two music (A2DP) audio sources are paired, FREECOM 4x uses the audio source from which you last played music.

To switch to the other audio source:

1. Stop music (A2DP) playback from the current device.
2. Play music (A2DP) from the other device.

FREECOM 4x automatically remembers your last played device.

4.6 VOICE COMMANDS

You can use voice commands for hands-free operation of certain FREECOM 4x features. Voice commands use natural voice operation. You loudly say a command and FREECOM 4x performs the action. Voice commands are available in various languages. English is the default language. You can change the language to another available language.

FREECOM 4x uses the following predefined voice commands.

To ...	Say ...
Answer an incoming call	"Answer"
Ignore an incoming call	"Ignore"
End a call	"Hey Cardo, end call"
Call the default number (configurable)	"Hey Cardo, speed dial"
Redial the last number	"Hey Cardo, redial number"
Turn on music	"Hey Cardo, music on"
Turn off music	"Hey Cardo, music off"
Play the next music track	"Hey Cardo, next track"
Play the previous music track	"Hey Cardo, previous track"
To share music`	"Hey Cardo, share music"
Turn on the radio	"Hey Cardo, radio on"
Turn off the radio	"Hey Cardo, radio off"
Skip to the next preset radio station	"Hey Cardo, next station"
Skip to the previous preset radio station	"Hey Cardo, previous station"
Open the call intercom	"Hey Cardo, call intercom"
To close intercom call	"Hey Cardo, end intercom"
Access Siri (when connected to an iOS device)	"Hey Siri"
Access Google (when connected to an Android device)	"OK Google"
Raise volume	"Hey Cardo, volume up"
Lower volume	"Hey Cardo, volume down"
Mute audio	"Hey Cardo, mute audio"
Unmute audio	"Hey Cardo, unmute audio"
Check the battery status	"Hey Cardo, battery status"

5. RIDING WITH OTHERS

Your FREECOM 4x features two distinct intercom communication modes: the traditional Bluetooth protocol and Live Intercom.

5.1 BLUETOOTH INTERCOM

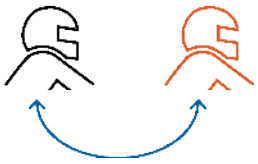
To connect your unit to another unit with a Bluetooth intercom, such as a Cardo Bluetooth unit or other Bluetooth-enabled devices, you must first pair their channels. Once paired, the unit automatically recognizes the other one whenever they are in range (line of sight up to 1.2km /0.75mi 400m / 0.25mi subject to terrain).

- Pairing a channel replaces any existing paired unit on that channel with the new unit.
- If you purchased the FREECOM 4x DUO, the retail package contains two pre-paired units.
- The Intercom range with other models is limited to the distance of the unit with the shorter range.

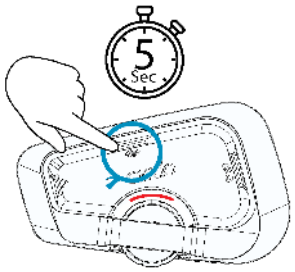
5.1.1 SETTING UP BLUETOOTH INTERCOM GROUPS

To set up a Bluetooth group :

1. Confirm your unit is in Standby mode (LED flashes slowly).
2. To initiate 2-way pairing:



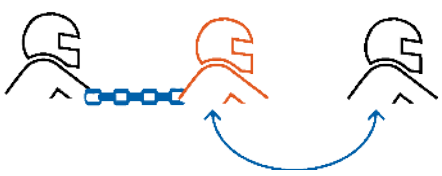
- On your unit, press  for **5 seconds** to enter pairing mode.
- The LED flashes red.



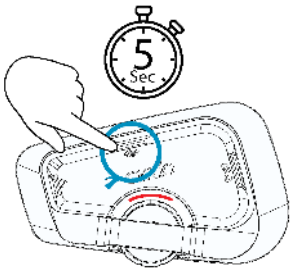
- The following announcement is heard: Rider A pairing.

- Bluetooth intercom pairing needs to be initiated on the other device.

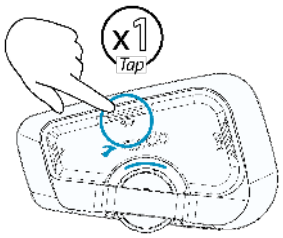
3. To add a 3rd rider:



- Press for **5 seconds**. The LED flashes red



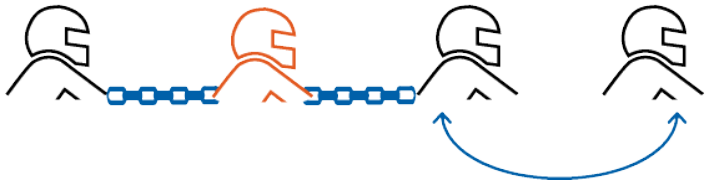
- Tap once . The LED flashes blue.



The following announcement is heard: Rider B pairing.

- Bluetooth intercom pairing needs to be initiated on the other device.

4. To add a 4th rider, Rider 1 or Rider 2 connects to the additional rider.



To pair a non-Cardo Bluetooth intercom group unit:

- The non-Cardo unit should be on phone pairing mode.
- All the steps are the same as with a Cardo Bluetooth intercom group.

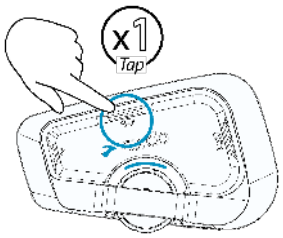
5.1.2 USING THE BLUETOOTH INTERCOM

5.1.2.1 STARTING/ENDING BLUETOOTH INTERCOM CALLS

To start or end communication with Rider 1:



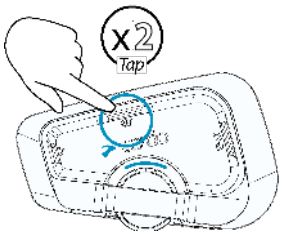
- Press  for 1 second or say **"Hey Cardo, call intercom**.



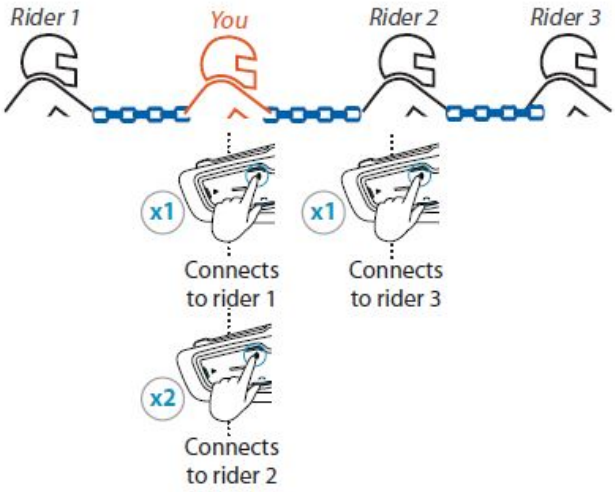
You can also start the Bluetooth intercom by making a loud noise, for example by saying "Hey". If channels A and B are already paired the conversation starts for both of them.

To start or end communication with Rider 2:

- Tap  twice or say **"Hey Cardo, end intercom"**.



To initiate a 4-way Bluetooth Conference:



- If channels A and B are already paired, the conversation starts for both of them.

5.1.2.2 RECEIVING BLUETOOTH INTERCOM CALLS

If another paired unit calls you via Bluetooth intercom, the call begins instantly.

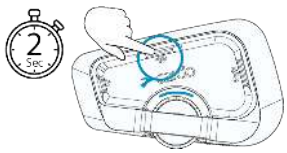
5.2 SHARING MUSIC

You can share music with a passenger or other rider.

- You can share music only in Bluetooth intercom mode.
- Music can be shared with only one passenger/rider.
- Bluetooth intercom calls are disabled when sharing music.
- If you paired your unit to two mobile phones, music will be shared from the mobile phone through which you last played music.
- When you stop sharing music, the music continues to play on your unit only.

To start sharing:

1. Start playing music.
2. Press  for 2 seconds to start sharing on Channel A (by default). Or say **"Hey Cardo, share music"**.

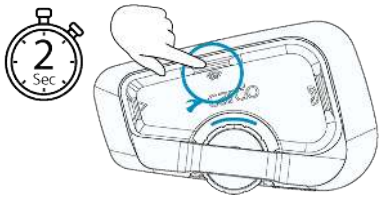


To manually select the channel on which to share music:

1. Start playing music.
2. Start a Bluetooth intercom call on either channel.
3. Press  for 2 seconds.

To stop sharing:

- Press  for 2 seconds.



6. TROUBLESHOOTING

6.1 SOFT RESET

If your FREECOM 4x stops responding, reset it in one of these ways:

- Turning it off and then on again (see Switching Your Unit On/Off).
- Using the supplied USB cable, connect your unit to the computer or wall charger for 30 seconds.

6.2 RESET TO FACTORY SETTINGS

This option deletes all paired units, devices and all configuration settings.

To perform a factory reset through the unit:

1. Check that your FREECOM 4x is in Standby mode.
2. Simultaneously press  for **5 seconds**.
   The LED flashes purple 5 times slowly, confirming that pairing has been reset.

6.3 FAQ

Additional answers to common problems can be found at www.cardosystems.com/support/freecom-4x/

7. PERSONALIZING YOUR DEVICE

Get the most out of your FREECOM 4x by changing the settings and customizing your unit according to your own personal preferences, using either of the following methods:

- Cardo Connect App on iOS or Android devices.
- Unit buttons.

- Cardo recommends you customize your settings before going out on the road. You can adjust any of these settings as required after experiencing them under road conditions.

Object	Default Value	Description	Cardo Connect App (iOS/Android)
AGC sensitivity (Off/Low/Medium/High)	Medium	AGC automatically adjusts speaker volume according to ambient noise and riding speed. For example, when set to Low, higher ambient noise will cause the volume increase to kick in at a higher level.	✓
Audio priority (A2DP/Bluetooth intercom)	Bluetooth intercom	Priority of audio source playing through speakers. Either music is not interrupted by an intercom call, or vice-versa.	✓
Background Audio Level	N/A	Sets the background audio volume when parallel audio streaming is on (see Parallel audio streaming in Bluetooth mode (Enable/Disable) below).	✓
Bluetooth friendly name	FREECOM 4x	Sets the name that appears on your phone while pairing and in the Cardo app.	✓
FM Band	According to Your Region	If you are in Japan, select **Japan**. Otherwise, select **Worldwide**.	✓
Language	According to Your Region	Voice announcements and voice-assisted menus language (see "Spoken Status Announcements" below).	✓
Mobile priority	Mobile 1	If you paired your unit to two mobile phones, you must set one of them as the default phone for outgoing calls.	✓
Parallel audio streaming in Bluetooth mode (Enable/Disable)	Disable	You can hear two audio sources simultaneously. For example, hear GPS while listening to music. Note: Parallel audio streaming may not work properly with some iOS devices (i.e., music player or GPS navigator) due to connected device limitations.	✓
RDS (Enable/Disable)	Disable	Radio Data System allows the radio to automatically retune to the strongest frequency available for the FM station you are listening to when the signal becomes too weak.	✓
Set speed dial numbers	Empty	Pre-set phone numbers for automatic dialing.	✓
Set the 6 FM radio presets	87.5	Pre-set FM radio stations.	✓
Spoken Status Announcements (Enable/Disable)	Enable	Voice announcements inform you to whom or to what device you are connected.	✓

- AGC and voice control performance vary based on environmental conditions, including riding speed, helmet type and ambient noise. For improved voice control performance, minimize the wind impact on the microphone by closing the visor and using the large microphone sponge.

7.1 USING PARALLEL AUDIO STREAMING

With parallel audio streaming, you can hear GPS instructions during a mobile or Bluetooth intercom call, or while listening to other audio sources, such as music or FM radio.

- Parallel audio streaming may not work properly with some iOS devices (i.e., music player or GPS navigator) due to connected device limitations.

Your FREECOM 4x sets the various audio sources to either foreground (volume remains the same) or background (volume reduced) as described in the following table:

Mobile Phone 1/2	GPS	Intercom 1	Intercom 2	Music	FM Radio
Foreground	Foreground				
Foreground[1]		Foreground[1]			
	Foreground	Foreground			
	Foreground			Background	
	Foreground				Background
		Foreground		Background	
		Foreground			Background
		Foreground[2,3]	Foreground[2,3]		Background
					Foreground [5]

[1]If you add an intercom call to a mobile phone call creating a conference call, the volume for both audio sources is the same.

[2]If you make two intercom calls simultaneously creating an intercom conference call, the volume for both audio sources is the same.

[3]If you make two intercom calls simultaneously creating an intercom conference call, you cannot hear the mobile phone or GPS.

[4]If you play music only, the music volume is not reduced.

[5]If you play the FM radio only, the FM radio volume is not reduced.

- In some cases, parallel audio streaming may not work properly due to connected device limitations (music player or GPS navigator).
- Cardo recommends that during a 3-way or 4-way Bluetooth intercom conference call, the rider who is connected to only one intercom call listens for mobile phone and GPS announcements.
- You cannot use music sharing for voice audio with riders during parallel audio streaming.

You can configure parallel audio streaming via the Cardo app.

7.2 AUDIO SOURCE PRIORITIES

If Parallel Audio Streaming is disabled, FREECOM 4x manages the audio sources you hear through the speakers according to the following audio source priorities.

Priority	Audio Source
Higher Priority ↑ **Lower Priority**	Mobile phone, GPS device instructions Intercom or Music[2] Music or Intercom[3] FM Radio

[1]Phone calls and GPS temporarily mute intercom, but group members remain part of the intercom group.

[2]When audio priority is set to Intercom, you cannot hear navigation app or SMS messages from your phone during an ongoing intercom call.

[3]When audio priority is set to A2DP (music), the intercom is disabled while listening to music (via A2DP). A rider calling you by intercom hears a sound indicating you are not available.

If you paired your unit to two mobile phones, music will be shared from the mobile phone through which you last played music

Intercom modes all have the same priority, so ongoing intercom calls will not be interrupted by any other intercom call.

If you paired your unit to two mobile phones, music will be shared from the mobile phone through which you last played music.

8. GLOSSARY

Term/Abbreviation	Description
A2DP	Advanced Audio Distribution Profile (for music). A protocol for playing music over Bluetooth.
AGC sensitivity	AGC (Automatic Gain Control) automatically adjusts speaker volume and microphone sensitivity according to ambient noise and riding speed.
Device	Mobile phone, GPS or music player.
Language	Voice announcementsand voice commands language.
Unit	Cardo or non-Cardo Bluetooth Communication system.
Voice control	Voice activation (by saying a word or phrase) of certain features for hands-free operation.
Voice control sensitivity	Adjusts your microphone sensitivity for voice activation while you are riding.

9. SUPPORT

For additional information:

www.cardosystems.com/support/freecom-4x/

- To avoid potential problems and to receive our support and warranty coverage, we strongly recommend buying our products only from authorized Cardo dealers.
- Your favorite brick-and-mortar store is always your best bet. Unauthorized online resellers and online auction sites such as eBay are not among Cardo's authorized dealers, and purchasing our products from such sites will be at your own risk. Cardo strives to provide quality products and exceptional customer service. We select dealers who share that vision. Buying grey market items from unauthorized online dealers is counterproductive and also adversely affects unsuspecting online consumers who may be purchasing used, counterfeit or defective products or devices whose warranties are void. Protect your investment by purchasing genuine Cardo and scala rider® products only from authorized dealers.

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