

Cobra[®] microTALK[®]

Operating Instructions for your

Cobra[®] microTALK[®]

2 Way Radio

FRS 220



Nothing comes close to a Cobra™

The Family Radio Service Story

Ever wish you could talk to someone who wasn't within earshot? Like contacting ski partners back at the lodge? Or letting a friend know how to find you in a busy mall? Cobra®'s microTALK® FRS 220 is a great way for friends or family to increase their fun—and safety—by staying in touch while on the go.

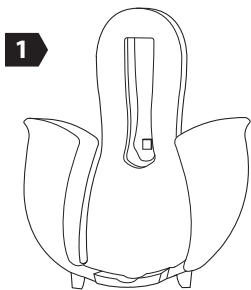
The FCC (Federal Communications Commission) has created 14 license free frequency bands, or channels, called Family Radio Service (FRS) frequencies. These channels are in the UHF (Ultra High Frequency) band which means great penetration through buildings, thick forests, hills, and other dense structures. They are also FM (Frequency Modulation) signals which means crystal clear reception even in crowded noisy environments.

FCC Warnings

Replacement or substitution of transistors, regular diodes or other parts of a unique nature, with parts other than those recommended by Cobra®, may cause a violation of the technical regulations of part 95 of the FCC Rules, or violation of Type Acceptance requirements of Part 2 of the Rules.

Included with your microTALK®

- 1. Holster/Belt Clip/Desk Stand



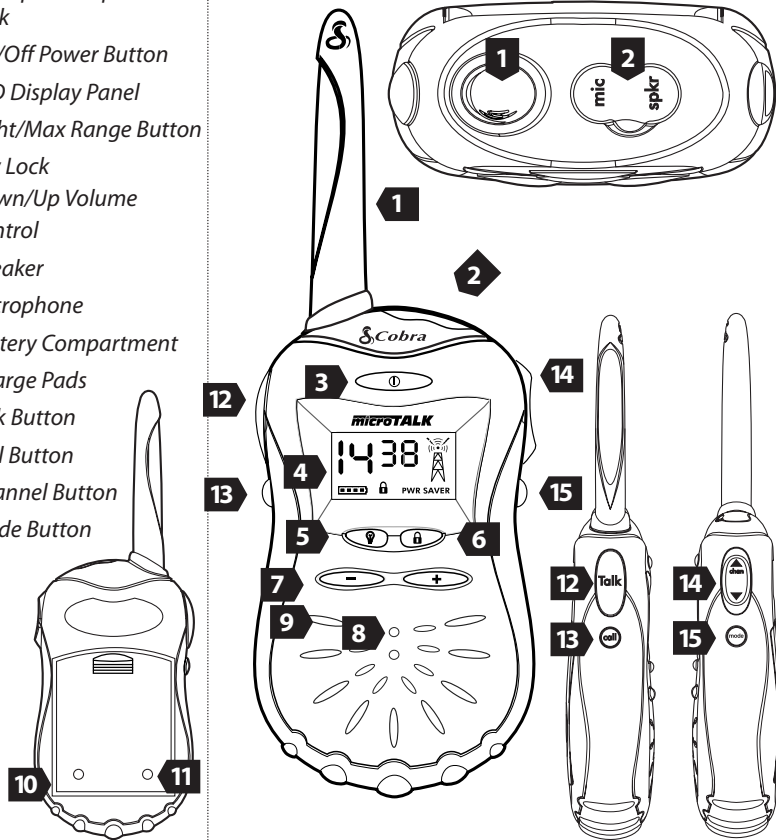
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Features of This Product

- Two-way static-free radio with up to a 2 mile range
- 14 channels
- SuperFlex™ antenna
- Holster belt clip
- Roger beep confirmation tone
- Backlit LCD
- Speaker/Microphone jacks

1. Antenna
2. Microphone/Speaker Jack
3. On/Off Power Button
4. LCD Display Panel
5. Light/Max Range Button
6. Key Lock
7. Down/Up Volume Control
8. Speaker
9. Microphone
10. Battery Compartment
11. Charge Pads
12. Talk Button
13. Call Button
14. Channel Button
15. Mode Button



Thank you for purchasing the Cobra® FRS 220 2-way Radio. Properly used, this Cobra® product will give you many years of reliable service.

Customer Support

Should you encounter any problems with the product or not understand its many features, please refer to this owner's manual. If, after referring to the manual, you still need help, call Cobra® Customer Service at 773.889.3087.

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 undesired operation.

Cobra® Customer Service

Live operators are available M-F 8:00 am - 6:00 pm CST at: 773.889.3087

Automated Technical Assistance available 24 hours a day, seven days a week. E-mail questions to: productinfo@cobra.com

Cobra® on the World Wide Web: Frequently Asked Questions (FAQ) can be found on-line at: www.cobra.com

Battery Installation


Note

Always use high quality alkaline or NiMH batteries. Incorrect positioning can damage both the batteries and the unit.

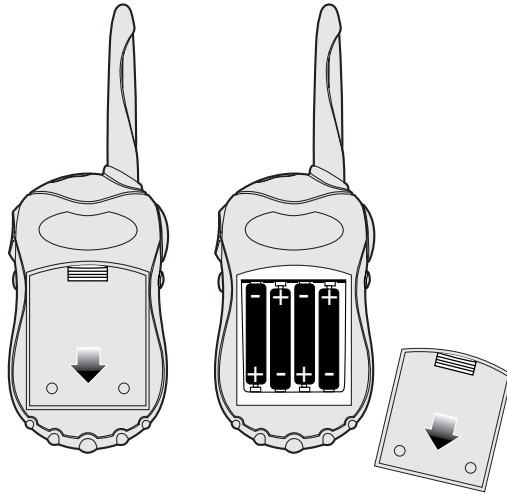
Only the Cobra® NiMH battery (Part #FA-BP) pack can be recharged.

See Accessories on page 19. Charge ports for recharging NiMH (Nickel Metal Hydride) battery pack are located on back of unit.

Note

When batteries are low or need charging the  indicator will blink. Replace alkaline batteries or recharge NiMH battery pack.

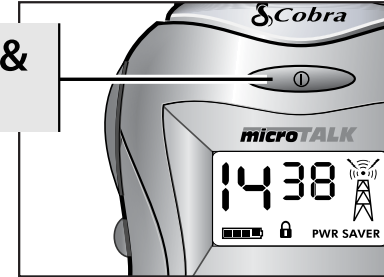
Install Batteries




- 1 Pull lock tab down to remove battery cover.
- 2 Insert four "AAA" batteries. Position batteries according to polarity markings.

Turning On Your microTALK®

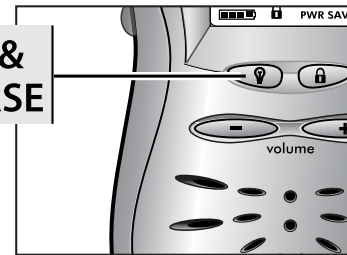
PUSH & HOLD



- 1 Push and hold the  POWER button for 2 seconds. An audible "tone" will indicate the unit is on, and display will illuminate for 10 seconds.

Illuminating the Display

PUSH & RELEASE



- 1 Push and release  LIGHT/MAX RANGE button to illuminate display for ten seconds.

Turning On Your microTALK®

Note

Whenever the unit is on you can receive communications.

Illuminating the Display

Auto Squelch

Auto Squelch

Your microTALK® is equipped with Auto Squelch, which automatically shuts off weak transmissions and unwanted noise due to terrain conditions or if you have reached your range limit.

Maximum Range Extender

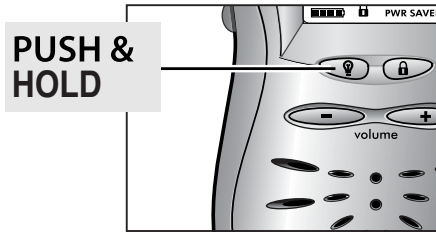
Maximum Range Extender

Auto squelch can be temporarily removed to allow all signals to enter (Maximum Range Extender).

Note

To learn more about the range of your microTALK®, see page 10.

Range is dependent on battery condition and geographic territory.



- 1 Push and hold  LIGHT/MAX RANGE button to allow all signals to enter.

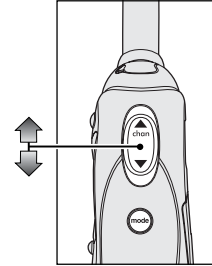
Auto Monitor

Auto Monitor

When the signal you want to hear is consistently weak, you may place the radio in Maximum Range mode without having to constantly hold the button: Press and hold the Maximum Range Extender button for five seconds. To return to normal operation, momentarily press the Maximum Range Extender button again or change channels.

Select Main Channel (1-14)

- 1 Turn on the microTALK® 2-Way Radio.



- 2 Select any of the 14 channels by moving the channel button up or down.

Select CTCSS Privacy Code (00-38)

- 1 Press the mode button. After a short delay, small numbers will flash next to the channel display LCD indicating the privacy code.



- 2 Select privacy code number by moving the channel button up or down.
- 3 When the desired code is displayed push the mode button and release. An audible tone will confirm your selection.

Select Main Channel

Note

Units must be on same channel and privacy code to communicate.

Note

Channels 8-12 generally are less used and give better results for communications in most areas.

Note

Push and hold the channel button for fast channel advance.

Select CTCSS Privacy Code

Note

Selecting a CTCSS privacy code will allow you to only hear conversations on that selection. For example, you may be with a group of friends. If all of you select channel 7 and privacy code 1, you will hear your friends but will not hear anybody else on channel 7, privacy code 2 through 38.

Battery Low

Note

When battery capacity is at the 1/4 level it is recommended that you replace alkaline batteries or recharge your NiMH (Nickel Metal Hydride) battery pack.

Only the Cobra® NiMH battery (Part #FA-BP) pack can be recharged.

Note

If the NiMH rechargeable battery pack (Item #FA-BP) and desktop charger (Item #FA-CR) are not included with this unit, see Accessories Section on page 19.

Auto Battery Save

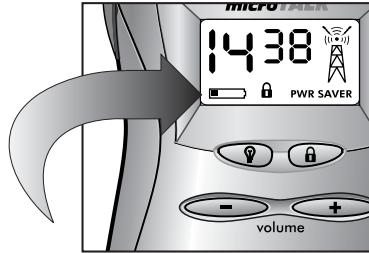
Note

The Auto Battery Save Circuit does not affect the unit's ability to receive incoming transmissions.

Battery Low

When in normal use the icon may begin flashing. This is a warning to you that the batteries are getting low.

Replace alkaline batteries as soon as possible and/or recharge NiMH battery pack.

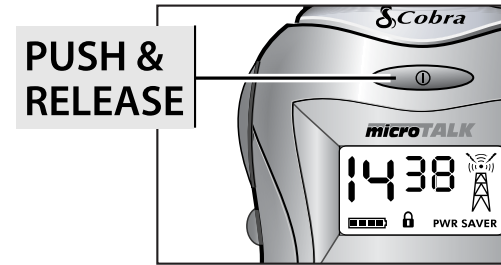


Auto Battery Save

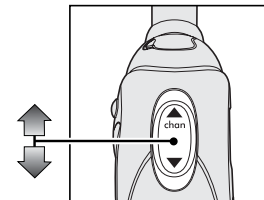
Your FRS 220 has a unique circuit designed to extend battery life. If there are no transmissions or receptions within 10 seconds, the unit will automatically switch to battery save mode and **PWR SAVER** will be shown in the display.

Calling Another Party

To alert another party that you wish to communicate:



1 Turn on your microTALK® 2-way radio. An audible "tone" will indicate the unit is on.

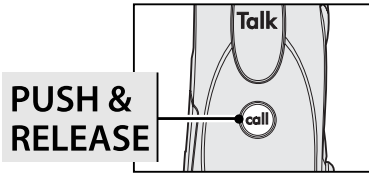


2 Select a channel by pushing the CHANNEL button up or down.

Calling Another Party

Note

Your incoming "Call" signal level is dependent on your unit volume setting.



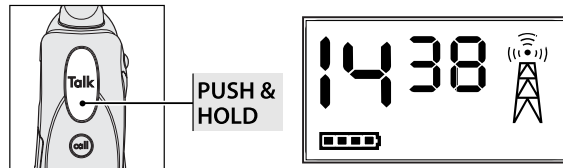
- 3 Push and release CALL button. The unit you are calling will hear a two second ringing tone.

Talking To Another Party

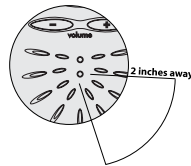
Note

While the TALK button is depressed you cannot receive incoming calls.

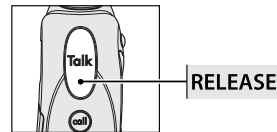
Talking To Another Party



- 1 Push and hold TALK button.
- 2 The TX indicator will be displayed.



- 3 Hold mic about 2 inches from mouth. Speak in a normal voice.
- 4 Release TALK button and listen for response.



Roger Beep Confirmation Tone



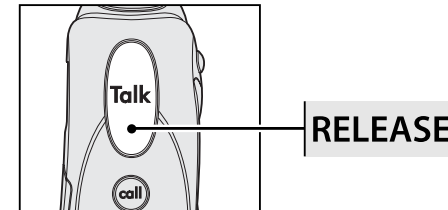
Your listener will hear an audible tone when you release the TALK button.

This alerts the other party that you are finished talking and it's OK for them to begin talking.

Roger Beep Confirmation Tone

Listening For Another Party

When finished talking:



- 1 Release TALK button to receive incoming transmissions.

Your microTALK® is always in listening mode when the TALK button is not pressed.

- 2 Adjust volume by pushing DOWN/UP buttons.

Listening For Another Party

Note

While the TALK button is depressed you cannot receive incoming calls.

Lock Function

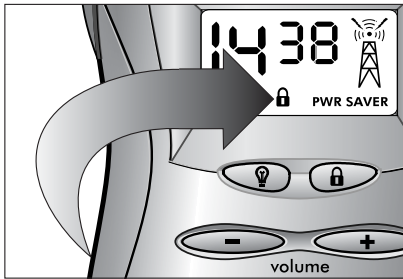
Note





Call button, Range Extender button and Talk button do not lock and are fully operational while the unit is locked.

The unit cannot lock while in function mode.

Lock Function

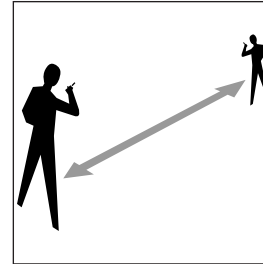
The purpose of the LOCK function is to lock most buttons to avoid accidental operation. To engage the LOCK function:



- 1 Push and hold Lock  button until  flashes. Channel up/down, Mode and Power buttons are now locked.
- 2 To "unlock" push and hold Lock  button until  disappears.

microTALK® Range

Your microTALK® Radio has a range of up to 2 miles. This effective range can be shortened under some conditions.



1. Under flat, open conditions you will experience the microTALK®'s maximum range.



2. Range can be reduced by buildings and foliage in the path of the signal.



3. Range will be further reduced by dense foliage and hilly terrain.

microTALK® Range

Note

To achieve maximum range the auto squelch can be overridden. Refer to Maximum Range Extender section on page 4.

microTALK® 2-Way Radio Can Make Life Easier and Safer

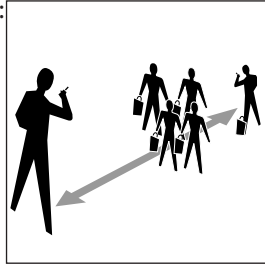
microTALK® 2-Way Radio Can Make Life Easier and Safer

As you become familiar with your microTALK® Radio you will find many of your own uses for the unit.

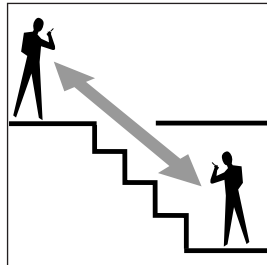
Some suggestions include:



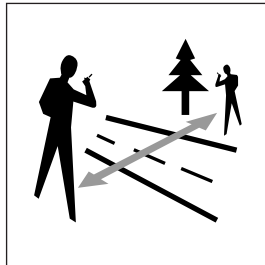
1. Talking with fellow hikers.



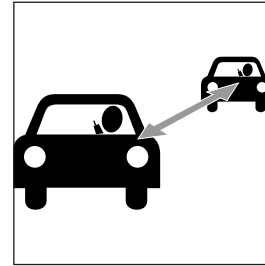
2. Keeping track of the kids in a shopping mall.



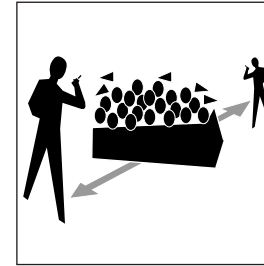
3. Communicating between basement and first, second or third floor.



4. Talking to a neighbor or a friend.



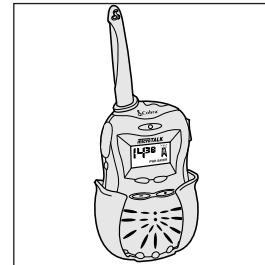
5. Checking on traveling companions in another car.



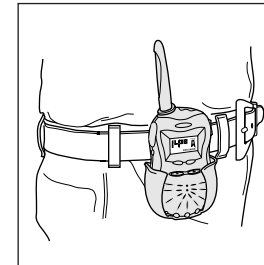
6. Agree on a meeting spot after an event.

Holster/Belt Clip/Desk Stand

Your microTALK® Radio comes with a custom molded plastic holster. Its unique dual-function design enables it to act as a handy desktop storage unit, as well as easily attaching to your belt for maximum convenience and portability.



1. Desk Stand



2. Belt Clip

Holster- Belt Clip and Desk Stand

External Microphone/ Speaker Jack

External Microphone/ Speaker Jack

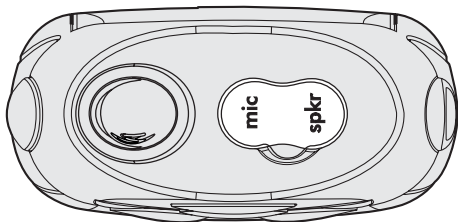
Note

If an External microphone/
speaker is not included with
the unit, see Accessories on
page 19 for available units.

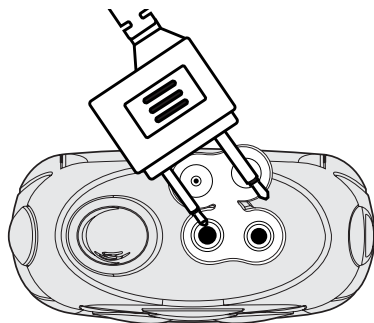
External Microphone/Speaker Jack

Your microTALK® 2-Way Radio can be fitted with an external microphone/speaker, freeing your hands for other tasks.

To attach the external microphone/speaker:



- 1 Open Spkr/Mic tab on top of unit.



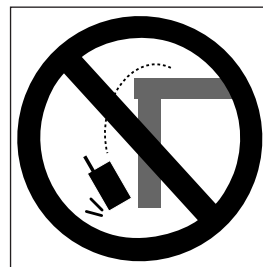
- 2 Insert plug into the Mic/Spkr jack.

Caring for Your **microTALK®** Radio

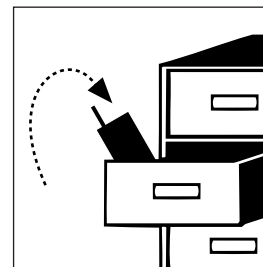
Caring for Your microTALK® Radio

The microTALK® 2 Way Radio will give you years of service if cared for properly.

Here are some suggestions:



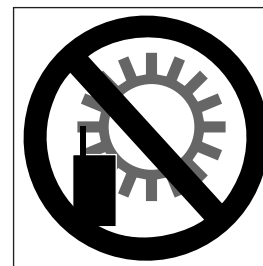
1. Handle unit gently.



2. Keep away from dust.



3. Never place the unit in water or in a moist place.



4. Avoid exposure to extreme temperatures.

Caring for Your microTALK® Radio

Note

Modifying or tampering with the radio's internal components can cause malfunction and will invalidate the warranty. If your radio is not performing as it should, please call Cobra® at 773.889.3087.

Do not return the unit to the retailer.

Frequency Ranges

I. GENERAL SPECIFICATIONS

A. FREQUENCIES CHANNEL ASSIGNMENT

FRS Channel	Channel Frequency in MHz	FRS Channel	Channel Frequency in MHz
1	462.5625	8	467.5625
2	462.5875	9	467.5875
3	462.6125	10	467.6125
4	462.6375	11	467.6375
5	462.6625	12	467.6625
6	462.6875	13	467.6875
7	462.7125	14	467.7125

B. SUBCHANNEL ASSIGNMENTS

CTCSS		CTCSS	
Channel	Frequency	Channel	Frequency
01	67.0 Hz	21	136.5 Hz
02	71.9 Hz	22	141.3 Hz
03	74.4 Hz	23	146.2 Hz
04	77.0 Hz	24	151.4 Hz
05	79.7 Hz	25	156.7 Hz
06	82.5 Hz	26	162.2 Hz
07	85.4 Hz	27	167.9 Hz
08	88.5 Hz	28	173.8 Hz
09	91.5 Hz	29	179.9 Hz
10	94.8 Hz	30	186.2 Hz
11	97.4 Hz	31	192.8 Hz
12	100.0 Hz	32	203.5 Hz
13	103.5 Hz	33	210.7 Hz
14	107.2 Hz	34	218.1 Hz
15	110.9 Hz	35	225.7 Hz
16	114.8 Hz	36	233.6 Hz
17	118.8 Hz	37	241.8 Hz
18	123.0 Hz	38	250.3 Hz
19	127.3 Hz		
20	131.8 Hz		

C. RECEIVER

	UNIT	NOMINAL
1. SENSITIVITY FOR 12dB SINAD	dBm	-119
FOR CALL SIGNAL DETECTION	dBm	-121
2. MAX. AUDIO OUTPUT @ 10% THD	mW	150
3. MAX S/N RATIO @ 1mV RF INPUT	dB	45
4. SQUELCH		
a) SENSITIVITY	dBm	-121
b) ATTACK TIME	mS	120
c) CLOSING TIME	mS	200
5. AUDIO FREQUENCY RESP. @ 300 HZ	dB	-15
@ 2500 HZ	dB	-10
6. SIGNAL DISPLACEMENT BW	+/- KHZ	5
7. ADJACENT CH. REJECTION	dB	60
8. INTERMODULATION REJECTION	dB	65
9. SPURIOUS RESPONSE REJECTION	dB	65

D. TRANSMITTER

	UNIT	NOMINAL
1. EFFECTIVE RADIATED POWER	mW	500
2. CARRIER FREQ. STABILITY	Hz	+/-500
3. MODULATION LIMITING	kHz	2.5
4. CARRIER ATTACK TIME	mS	30
5. AUDIO FREQUENCY RESPONSE @ 300 HZ	dB	-10
@ 2500 HZ	dB	4
6. AUDIO DISTORTION	%	3
7. HUM NOISE	dB	38
8. TRANSIENT FREQ. BEHAVIOR		
a) TX ON	mS	30
b) TX OFF	mS	5

E. POWER SUPPLY

1. BATTERY LIFE (1:1:18 RATIO)	HR	24
2. BATTERY	V	4.2-6.0

Limited Two Year Warranty

Optional Accessories



Cobra® Electronics Corporation

6500 West Cortland Street
Chicago, Illinois 60707 USA

COBRA® ELECTRONICS CORPORATION warrants that its COBRA® FRS Radios, and the component parts thereof, will be free of defects in workmanship and materials for period of two (2) years from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.

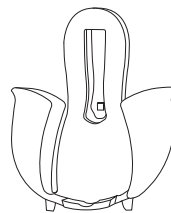
COBRA® will, without charge, repair or replace, at its option, defective FRS radios, products or component parts upon delivery to the COBRA® factory Service Department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cobra's expense, if the product is repaired or replaced under warranty.

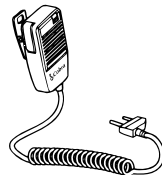
Exclusions: This limited warranty does not apply; 1) to any product damaged by accident; 2) in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs; 3) if the serial number has been altered, defaced or removed; 4) if the owner of the product resides outside the U.S.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. COBRA® shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.



Replacement Holster
FA-HR1



Lapel Speaker/Microphone
Remote microphone/speaker with Push-to-Talk switch.
MA-SM



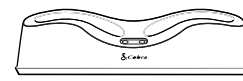
Vox/Headset Mic
VOX (Voice Operated Transmitter) headset and microphone allows hands-free operation.
MA-VOX



Ear Bud Mic with PTT
Compact earbud and microphone with Push-to-Talk switch.
MA-EBM



NiMH Rechargeable Battery Pack
High performance Nickel Metal Hydride battery pack for multiple charging.
FA-BP



2 Port Desktop Charger
Charges two microTALK® radios or two NiMH battery packs.
FA-CR

You Can Find These Fine Accessories At Your Local Cobra® Dealer
If you wish, you can order directly from Cobra®.

Order by phone
Call 773.889.3087 (Press 1 from the main menu) 8 a.m.-8 p.m. M-F CST.)

Order by mail or fax
Call 773.889.3087 for pricing. Fill out order form on next page, and mail/fax directly to Cobra®.

Order over the Web
www.cobra.com

Accessory Order Form

Shipping & Handling

Amount of Order	Shipping/Handling
\$25.00 and under	\$4.75
\$25.01 - \$40.00	\$6.95
\$40.01 - \$80.00	\$9.25
\$80.01 - \$120.00	\$10.25
\$120.01 - \$160.00	\$11.75
\$160.01 and up	\$14.50

For AK, HI and PR please add an additional \$15.00 for UPS shipments.

Item #	Description	Cost Ea.	Qty.	Amount
MA-EBM	Ear Bud Mic with PTT			
MA-VOX	Vox Headset Mic			
MA-SM	Lapel Speaker/ Microphone			
FA-HR1	Replacement Holster			
FA-CR	Charger			
FA-BP	Battery			

Prices subject to change without notice.	Subtotal	_____
Tax Table	(Tax if applicable)	_____
Illinois residents add 8.75%	Shipping/handling	_____
Indiana residents add 5%	Total	_____
Michigan residents add 6 %		
Ohio residents add 5%		
Wisconsin residents add 5%		

For credit card orders fill out order form and fax to: 773.622.2269 or call 773.889.3087 (Press 1 from the main menu) 8:00 am - 8:00 pm, M-F, CST.

Make check or money order (no stamps) payable to:
Cobra® Electronics
Attn: Accessories Dept.
6500 West Cortland Street
Chicago, IL 60707 USA

Please print clearly

Name _____

Address (No P.O. Box) _____

City _____ State _____

Zip _____

Telephone (____) _____

Credit Card No. _____ Exp. Date _____

Customer Signature _____

Circle One: Visa MasterCard Discover

Allow 2 to 3 weeks for delivery. Offer valid in Continental U.S. only.



Cobra® Electronics Corporation
6500 West Cortland Street
Chicago, IL 60707 USA
www.cobra.com



If You Think You Need Service

For technical assistance, please call our Automated Help Desk which can assist you by answering the most frequently asked questions about Cobra® products.

(773) 889-3087

24 hours a day, 7 days a week.

*A Consumer Service Representative can be reached through this same number
8:00 am - 6:00 pm, Monday through Friday, CST.*

*Technical assistance is also available on-line in the Frequently Asked Questions (FAQ) section at
www.cobra.com or by e-mail to productinfo@cobra.com*

If you think you need service call 773.889.3087

"If your product should require factory service please call Cobra® first before sending your unit in. This will ensure the fastest turn-around time on your repair."

You may be asked to send your unit to the Cobra® factory. It will be necessary to furnish the following in order to have the product serviced and returned.

1. For Warranty Repair include some form of proof-of-purchase, such as a mechanical reproduction or carbon or a sales receipt. If you send the original receipt it cannot be returned.
2. Send the entire product.
3. Enclose a description of what is happening with the unit. Include a typed or clearly print name and address of where the unit is to be returned.
4. Pack unit securely to prevent damage in transit. If possible, use the original packing material.
5. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or First Class Mail to avoid loss in transit to: Cobra® Factory Service, Cobra® Electronics Corporation, 6500 West Cortland Street, Chicago, IL 60707 USA.
6. If the unit is in warranty, upon receipt of your unit it will either be repaired or exchanged depending on the model. Please allow approximately 3 to 4 weeks before contacting us for status. If the unit is out of warranty a letter will automatically be sent informing you of the repair charge or replacement charge. If you have any questions, please call 773.889.3087 for assistance.

The Cobra® line of quality products also includes:

- Citizens Band Radios
- microTALK® Radios
- Radar/Laser Detectors
- GPS
- SafetyAlert®
Traffic Warning Systems
- Accessories
- HighGear™ Accessories

Nothing comes close to a Cobra™