Cobra

RAD 480i
Owners Manual

INTERNATIONAL

Connected Radar & Laser Detector

Long-Range Detection

Reduced False Alerts

Red Light/Speed Camera Alerts

Contents

Introduction

Congratulations! You've made a smart choice by purchasing a radar/laser detector from Cobra.

This booklet describes the simple steps for mounting and setting up your detector. It also provides helpful information about how radar and laser guns are used and how you can interpret the alerts you receive.

RAD 480i FEATURES

- Radar/Laser Protection - Detects all radar and laser guns.
- 2nd Generation IVT Filter™ - User updatable system automatically reduces false alerts from moving In-Vehicle Technology sources such as collision avoidance systems and adaptive cruise control, automatic door openers, and traffic flow monitoring systems.
- LaserEye® - Detects laser signals from both front and rear.
- White OLED Display - Bright display with band identification icons and numeric signal strength meter.
- Shared Radar & Laser Alerts - Get alerts from other connected detectors.
- Defender Database - Updatable red light and speed camera database.
- VoiceAlert - Digital voice announcements keep your eyes on the road.
- Dual Language - English and Spanish voice and text alerts.
- Quiet Drive - Quiet Drive is a muted driving mode for times when a driver wants less audible feedback while talking with passengers, on the phone, etc.
- Sensitivity Modes - Multiple sensitivity modes to reduce false alerts.
- Auto Mute - Automatically mutes audio for sustained alerts.
- User Updates - Micro-USB port allows users to access future software updates.
- 6' Power Cord and EZ Mag Mount included.

DRIVE SMARTER®

Download on the App Store

GET IT ON Google Play

drivesmarter.com/downloads

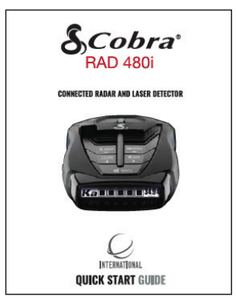
Introduction

PRODUCT SERVICE AND SUPPORT

For any questions about operating or installing this new Cobra product, PLEASE CONTACT COBRA FIRST…do not return this product to the retail store. The contact information for Cobra will vary depending on the country in which you purchased and utilize the product. For the latest contact information, please go to www.cobra.com/support

WHAT'S IN THE BOX

- RAD 480i Radar/Laser Detector
- 12V Power Cord
- Windshield Mount with Suction Cups
- Hook & Loop Fastener for Dash Mounting
- Quick Start Guide



CONTROLS & FEATURES

Windshield Mount Release Button
For quick and easy installation

On-Off Volume Control
Adjusts the volume of alerts

Mark
Mark and lock out false alert locations

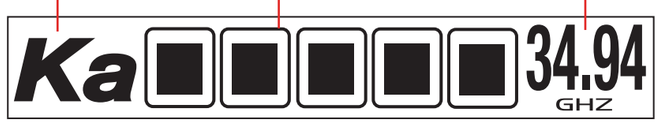
Dim
Adjusts the display brightness

Menu Button
Select detector settings

SEN Button
Changes sensitivity mode to Highway or City

Mute Button
For manual or auto mute of audio alerts

Radar Band **Signal Strength** **Frequency**



Using RAD 480i

1. Plug small end of 12 Volt cord into power jack on RAD 480i and large end into your car's lighter/accessory socket.
2. RAD 480i should power on automatically. If not, rotate the On/Off Volume control wheel.

Software Updates

RAD 480i can be updated using a data transfer Micro USB cable and our RAD 480i software available on our web site, cobra.com/support.

IMPORTANT: Defender Database updates require first registering your RAD 480i to activate the included 90-day Defender subscription. Defender subscriptions are available at cobra.com/collections/software-services.

Windshield Mount with Suction Cups

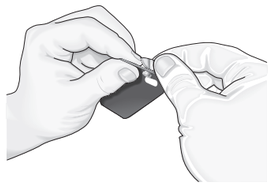
Quick and simple windshield mounting of your RAD 480i. See pages 7-8 for mounting details.

Power Jack
Connects to 12V Cord powering your device

Micro USB Jack
Connects to your computer via USB A/mini B cable

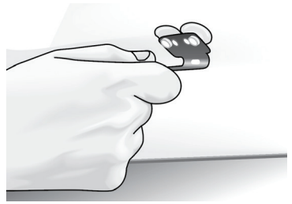
WINDSHIELD MOUNTING OPTION

1. Assemble Suction Cup Bracket

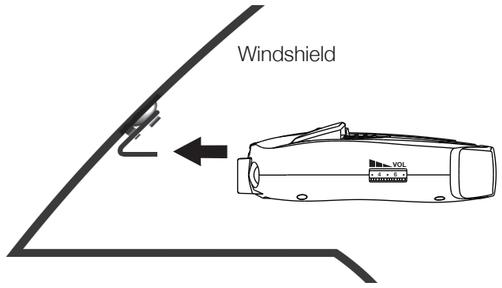


2. Adjust Suction Cup Bracket to Ensure RAD 480i is Level with Road

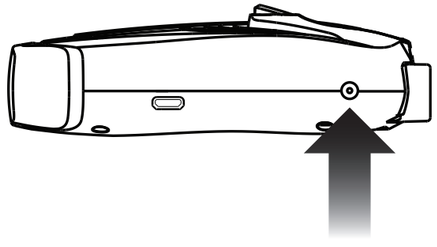
3. Attach Suction Cup Bracket to Windshield



4. Attach RAD 480i to Suction Cup Bracket

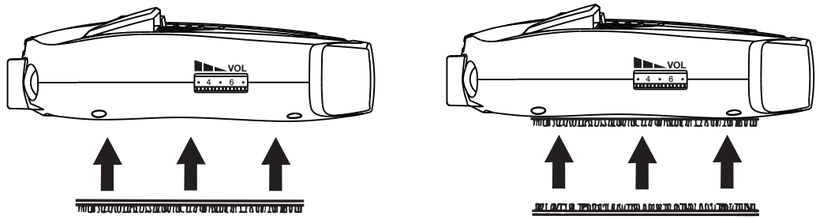


5. Connect Detector to 12V Power Source

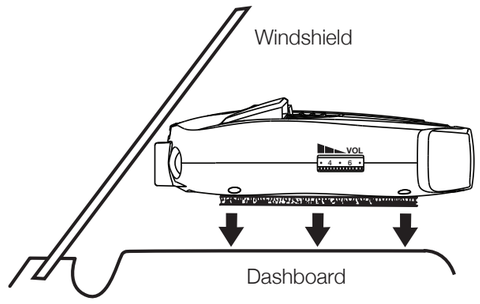


DASHBOARD MOUNTING OPTION

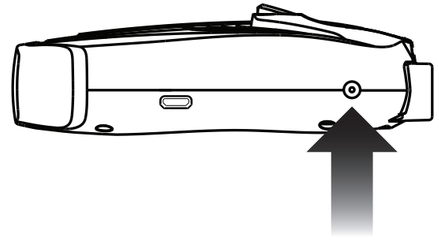
1. Attach Hook & Loop to Detector



2. Attach Detector to Dashboard Surface



3. Connect Detector to 12V Power Source



DOWNLOAD AND CONNECT TO DRIVE SMARTER®

1 Power on RAD 480i.

2 Install and run the Drive Smarter® app on your smartphone.

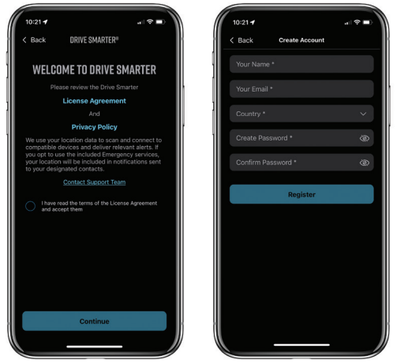
3 If you're using Drive Smarter® for the first time, you will be prompted to set up an account.

4 Fill in your account information within the "Create Account" screen and click "Register".

5 A message will be sent to the email address specified in your account set up, which will verify your new account.

6 Be sure Bluetooth® is actived on your smartphone. In the Drive Smarter® app, press the Account button then select "Add devices".

7 Follow the prompts in the Drive Smarter® app to connect RAD 480i.



DRIVE SMARTER®

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GET IT ON Google Play

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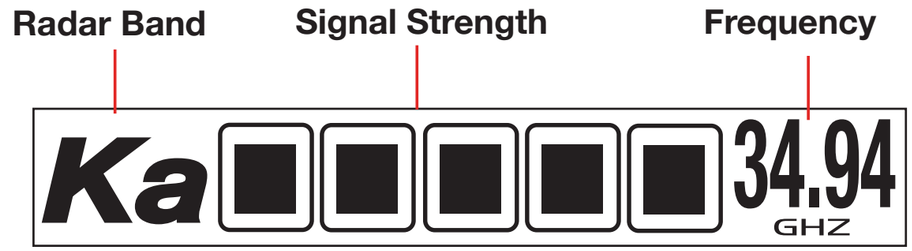
DISPLAY AND MENU



- **Signal Band Indicator**
  Displays the radar band of the alert:
  - X Band (commonly false alerts).
  - K band (used by police radar and false alerts)
  - Ka band (almost always police radar)
  - Laser (almost always police)
- **Signal Strength Meter**
  Displays the signal strength, or how close, the alert is. The more alert bars displayed, the stronger the signal strength.
- **OSP/Speed Limit Indicator**
  Over Speed alert setting, can be adjusted in the Programming menu. Bluetooth icon will appear here when paired to phone. Speed limit data will appear here when connected to the Drive Smarter app.

- **Speed**
  Displays the current speed. When Speed Display is off, displays the vehicle voltage.

UNDERSTANDING YOUR DETECTOR

How Radar Works

Traffic radar, which consists of microwaves, travels in straight lines and is easily reflected by objects such as cars, trucks, even guardrails and overpasses. Radar works by directing its microwave beam down the road. As your vehicle travels into range, the microwave beam bounces off your car, and the radar antenna looks for the reflections.

Using the Doppler Principle, the radar equipment then calculates your speed by comparing the frequency of the reflection of your car to the original frequency of the beam sent out.

Traffic radar has limitations, the most significant of these being that it typically can monitor only one target at a time. If there is more than one vehicle within range, it is up to the radar operator to decide which target is producing the strongest reflection. Since the strength of the reflection is affected by both the size of the vehicle and its proximity to the antenna, it is difficult for the radar operator to determine if the signal is from a sports car nearby or a semi-truck several hundred feet away.

Radar range also depends on the power of the radar equipment itself. The strength of the radar unit's beam diminishes with distance. The farther the radar has to travel, the less energy it has for speed detection.

Because intrusion alarms and motion sensors often operate on the same frequency as X, and K-band radar, your detector will occasionally receive non-police radar signals. These transmitters generally produce much weaker readings than will a true radar encounter.

As you become familiar with the sources of these pseudo alarms in your daily driving, they will serve as confirmation that your device's radar detection abilities are fully operational.

How Laser (Lidar) Works

Laser speed detection is actually light detection and ranging (LIDAR). Laser guns project a beam of invisible infrared light. The signal is a series of very short infrared light energy pulses that move in a straight line, reflecting off your car and returning to the gun. Laser uses these light pulses to measure the distance to a vehicle. Speed is then calculated by measuring how quickly these pulses are reflected, given the known speed of light.

Laser is a newer technology whose use is not as widespread as conventional radar; therefore, you may not encounter it on a daily basis. And unlike radar detection, laser is not prone to false alarms. Because laser transmits a much narrower beam than does radar, it is much more accurate in its ability to distinguish between targets and is also more difficult to detect. As a result, even the briefest laser alert should be taken seriously.

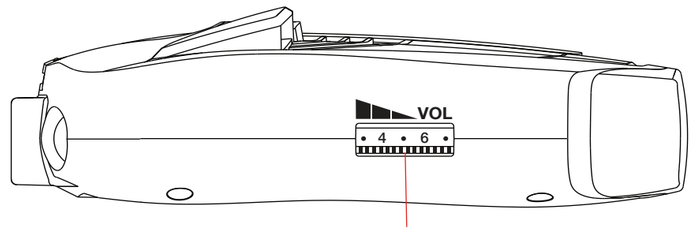
There are limitations to laser, however. Laser is much more sensitive to weather conditions than radar, and a laser gun's range will be decreased by anything affecting visibility, such as rain, fog or smoke. A laser gun cannot operate through glass, and it must be stationary to get an accurate reading. Because laser must have a clear line of sight and is subject to cosine error (an inaccuracy that increases as the angle between the gun and the vehicle increases), police typically use laser equipment parallel to the road or from an overpass. Laser can be used day or night.

TSR Signal Ranking Software

Your radar detector includes an optional boost in false alert filtering software to eliminate excessive alerts from erroneous K-band sources. One example of this is traffic flow monitoring systems. These systems, which are becoming more widely used in several countries, generate K-band signals to measure the flow of traffic on a given road. Unfortunately most detectors see this as a real threat and will alert you to it unnecessarily. Our proprietary TSR software, intelligently sorts, ranks and rejects this type of false alarm automatically. The result is ultimate protection without excessive false alarms.

POWERING ON THE DEVICE, ADJUSTING VOLUME

To turn on the unit and adjust the audio volume, rotate the On-Off/ Volume control clockwise (away from you).



Volume Up/Down/Power

NOTE: In some vehicles, power is supplied to the cigarette lighter even while the ignition is Off. If this is the case with your vehicle, you should turn Off or unplug your detector when parking for lengthy periods.

SENSITIVITY MODES

Setting your detector to Low or Medium sensitivity delays the audio alerts for weak X band and K band signals until they become stronger. (A single beep will sound when the signal is first detected.) Also, additional filtering is done to reduce false alerts while you are driving in, or near, urban areas where there are many sources for conflicting X and K band signals such as microwave towers and automatic door openers.

To change the sensitivity mode, press the SEN button.

Icon	Sensitivity Mode	Description
	High	No filtering for maximum sensitivity
	Medium	Minimal filtering to reduce unwanted alerts
	Low	Maximum filtering to reduce unwanted alerts
A	Auto	When connected to the Drive Smarter® app, Auto Mode will automatically adjust the Sensitivity level based on your speed.

* Drive Smarter®-based features require connection to a smartphone running the Drive Smarter® app

ADVANCED TECHNOLOGY

Your RAD 480i is designed to provide you the truest alerts and minimize the distraction of erroneous signals from radar-based fixed-position and moving sources.

- Adjustable Sensitivity: allows driver to adjust sensitivity to driving environment, reducing false alarms from fixed position sources such as automatic door openers.

When using Drive Smarter®, Auto mode automatically adjusts sensitivity based on vehicle speed.

- IVT Filter: system automatically reduces false alerts from moving In-Vehicle Technology sources such as collision avoidance systems and adaptive cruise control.

AUTOLEARN™ INTELLIGENCE

The AutoLearn feature analyzes (over time) the source of radar signals by location and frequency. This allows RAD 480i to determine if a fixed location signal is a real threat or a false one. If it determines that the signal is an automatic door opener, motion sensor, etc., it automatically locks out this source at this particular location. A “Stored” message will appear on the display when a signal has been automatically locked out. AutoLearn needs to encounter the exact frequency in the same location approximately three times to lock it out. Since some door openers are turned on and off routinely, some variations may occur. Variations may also occur with seasonal temperature changes that can affects the frequency that these radar sources transmit.

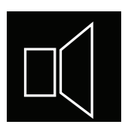
RAD 480i will also unlearn signals to protect you from locking out real threats. If a particular signal is no longer present at a location that was previously locked out, RAD 480i will unlock that signal. If you prefer, you can turn the AutoLearn feature off.

GPS FILTER (TRUELOCK)

RAD 480i is equipped with a TrueLock GPS Filter to store and lock out, or ignore, fixed location false alerts in its memory. Common sources of fixed location false alerts are storefront automatic door openers and motion sensors. The TrueLock GPS Filter will not lock out moving false alerts that are commonly caused by vehicle’s blind spot monitoring and collision avoidance systems.

MUTE

Manual Mute allows you to quickly turn OFF an audio alert by momentarily pressing the MUTE button. If you press the MUTE button a second time during the alert, the audio alert will be turned back ON. When an alert is being muted, the audio icon on the display will change to the MUTE icon.



QUIET DRIVE

A muted driving mode is for times when a driver wants less audible feedback while talking with passengers, on the phone, etc. Only the first few seconds of audio will be heard. This mode is Off by default.

This mode can be changed in the User Settings menu or by pressing and holding the MUTE button for two seconds. When Quiet Drive is on the audio icon on the display will change to the QUIET MODE icon.

BATTERY VOLTAGE

To display your vehicle’s battery voltage, press the MUTE button while no signal is being detected.

AUTO MUTE

Auto Mute will automatically reduce the audio volume of all alerts after four seconds for as long as the signal is detected. The factory setting for Auto Mute is On.

DISPLAY BRIGHTNESS

You can choose from four settings for Brightness of the display. Repeatedly push the DIM button to cycle through the settings. The factory setting is Bright.

MENU

The Menu is broken up into User and Alert settings.

USER SETTINGS

To change the User settings, enter the Menu by pressing the MENU button. A voice announces “Menu” and the display will change to:

USER ◀ MENU ▶ ALERT

Press the **DIM** button to enter the User settings menu.

Press the **MARK** and **MENU** buttons to switch between User settings.

Press the **DIM** or **SEN** buttons to change the selected User setting’s value.

User Setting	Value
Detail	More*/Less
Quiet Drive	Off*/On
Auto Mute	Off/On*
Voice	Off/On*
Language	English*/Spanish
Screen Saver	Off / 1 Minute* / 3 Minute
Smart Power	Off*/On
Display Car Voltage	Off*/On
System Info	Press the SEN button to display system information
Restore Defaults	Press the SEN button to restore factory default settings then press SEN button again to confirm (not displayed until a setting has changed)
Exit Menu	Press the MENU button to exit the Menu

*Denotes factory default settings

DETAIL

More detail mode displays information about the radar band, signal strength and frequency.

Less detail mode only provides the threat level (see the Radar Alerts section).

LANGUAGE

Can be set to either English or Spanish for all text and voice audio.

SCREEN SAVER

Your detector has a screen saver mode. When screen saver is turned on, the screen will change to Dark after the selected time interval (factory default is 3 minutes). While the screen is Dark, the scanner will be displayed dimly.

NOTE: While SCREEN SAVER is activated, any alert will turn the display back on at the last brightness setting (Bright, Dim or Dimmer). Touching any button will also turn on the display.

ALERT SETTINGS

To change the Alert settings, enter the Menu by pressing the MENU button. A voice announces “Menu” and the display will change to:

USER ◀ MENU ▶ ALERT

Press the **SEN** button to enter the Alert settings menu.

Press the **MARK** and **MENU** buttons to switch between Alert settings.

Press the **DIM** or **SEN** buttons to change the selected Alert setting’s value.

Alert Setting	Value
X Band	Off/On*
K Low Band	Off*/On
K Band	Off/On*
Ka Band	Off/On*
Laser	Off/On*
Low V. Warning	Off*/On
Exit Menu	Press the MENU button to exit the Menu

*Denotes factory default settings

SMART POWER

Your detector includes the Smart Power feature that, when turned On, will put the unit into Low Power mode 15 minutes after the car’s engine has been turned Off.

Before Smart Power enters Low Power mode, you will hear three beeps and Smart Power will flash on the display. To return the unit to Normal Power mode and exit Low Power mode, start the car, press any button or turn the unit Off and then On again.

SYSTEM INFO

Displays information about the versions of firmware that are installed on your detector.

RESTORE DEFAULTS

To return your detector to factory default settings, press the SEN Button. Press the SEN Button again to confirm that you want to restore factory settings.

EXIT MENU

Pressing the MENU button exits the Menu.

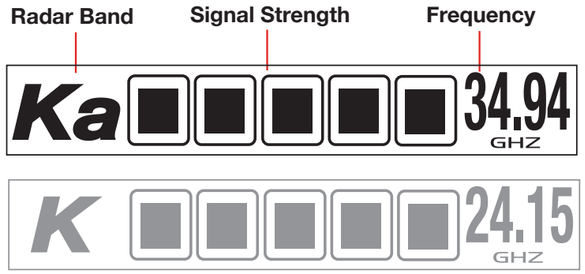
DETECTION

A distinctly different Alert tone is used for each type of signal detected (including separate tones for each laser signal). For X, K and Ka band radar signals, the tones will repeat faster as you approach the signal source. The repeat rate of the tones gives you useful information about the signal detected.

RADAR ALERTS

More Detail

In **More** Detail mode the radar band, signal strength and frequency of the detected radar signal will be displayed.



Once Locked Out, the Locked Out alert will be displayed as a “shadow” alert.

Less Detail

If you are a new user of radar detectors, you may want to use the Less Detail mode. In this mode the display will only show one, two, or three bars which indicate how likely the alert is to be a police radar or laser gun. This threat level indication takes into account the laser or radar band, strength, and frequency of the detected signal.

Level	Display	Threat
1	LOW	Low
2	MED	Medium
3	HIGH	High

LASER ALERTS

With Laser signals you will always receive a full-strength alert.

In **More** Detail mode the word Laser will be shown on the display along with the pulse rate of the Laser signal.

In **Less** Detail mode three signal strength bars will be shown.

INSTANT-ON DETECTION

Your detector is designed to detect Instant-On speed monitoring signals, which can suddenly appear at full strength.

RESPONDING TO ALERTS

Description	Interpretation	Recommended Response
Tone repeats slowly at first, then speeds up rapidly	Probably police radar	FULL ALERT
Tone sounds one time only	Probably a false alarm, but possibly pulsed radar nearby.	Exercise caution
Tone instantly begins repeating rapidly.	Radar nearby has been activated suddenly.	FULL ALERT
Tone repeats slowly as you approach a hill or a bridge, then speeds up sharply as you reach it.	Probablt police radar beyond the hill or bridge.	FULL ALERT
Tone repeats slowly for a short period.	Probably a false alarm.	Exercise caution
Any type of laser alert.	Laser alerts are never false alarms.	FULL ALERT

LOCKING OUT FALSE ALERTS

To manually lock out a fixed location false alert (X band, K band or laser only), press the MUTE button three times during an alert. Pressing the first time will silence the audio. Pressing a second time will generate a prompt on the display that will read “Lockout?” Press a third time to confirm you want to lock this signal out by location and frequency. A “Stored” message will be displayed.

Once a signal has been stored, RAD 480i will not audibly alert the next time you approach this area but will display the locked-out alert in grey. To unlock a signal that has already been stored, press the MUTE button twice while receiving the locked out alert. The display will read “Unlock?” when pressing MUTE the first time.

Press the MUTE button again to unlock it from memory. The display will read “Unlocked” to confirm your action. Note: When the GPS Filter is set to OFF, you do not have access to RAD 480i’s other GPS- enabled features (e.g., Defender Database alerts, marking locations, etc.).

Operation

DRIVE SMARTER® ALERTS

While connected to the Drive Smarter® app, Drive Smarter® based alerts are displayed on the detector. The distance will count down as you approach the alert.

Only Driver Smarter® Alert

Far Away Getting Closer Close

If both radar and Drive Smarter® alerts happen at the same time, both will be displayed side by side.

Driver Smarter® and Radar Alert

The alert types are:

Photo Enforced Red Light Camera Speed Camera Speed Trap Caution Area

NOTE: Posted Speed Limit (will appear in colored box on the right hand side next to the sensitivity indicator)

USING THE MARK BUTTON

You can report alerts to the Drive Smarter® Community when you see an active police speed enforcement by pressing the MARK button for 2 seconds.

MAINTENANCE

Your detector is designed and built to give you years of trouble-free performance without the need for service. No routine Maintenance is required.

If your unit does not appear to be operating properly, please follow these troubleshooting steps:

- Make sure the power cord is properly connected.
- Make sure the socket of your vehicle's cigarette lighter is clean and free of corrosion.
- Make sure the power cord's cigarette lighter adapter is firmly seated in your cigarette lighter.

BANDS AND FREQUENCIES

Band	Frequencies	
X Band	10.525	± 0.050 GHz
K Band	24.125	± 0.125 GHz
Ka Band	34.700	± 1.300 GHz
Laser	910 ± 50 nm	100 PPS

Compliance Statement

Restrictions on placing in service or applicable requirements for permission to use:

Country: "AT, BG, CY, DE, DK, EE, ES, FI, FR, GR, IR, IT, LT, LU, LV, MT, NL, PL, PT, SE, SK"

Requirements: Please check your legislation before use.

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

CE - DECLARATION OF CONFORMITY

The manufacturer, Cobra Electronics Corp., hereby declares that the RAD480i equipment complies with the essential requirements and other relevant provisions of Directive 2014/53/EU. The full Declaration of Conformity can be downloaded here: eu.cobra.com

Trademarks Acknowledgment, Warnings, and Regulatory Information

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DISPOSAL OF ELECTRONICS EQUIPMENT: This product may contain hazardous substances that could impact health and the environment if not disposed of properly.

The crossed out wheeled bin symbol indicates that the product should not be disposed of along with household waste. It should be handed over to an applicable collection point for the recycling of electrical equipment. By ensuring that this product is disposed of correctly you will help/prevent potential negative impact on the environment.

If you need more information on the collection, reuse and recycling systems, please contact your local civic office or the shop where it was originally purchased.

Limited 1-Year Warranty

Warranty Terms:

Cobra warrants your product against all defects in materials and workmanship for a period of one (1) year from the date of original purchase.

Cobra, at our sole discretion, will repair or replace your product (with the same or comparable product) free of charge.

Cobra will not pay shipping charges that you incur for sending your product to us. Products received COD will be refused.

To make a warranty claim, we will require proof or purchase in the form of an invoice or receipt. No proof of purchase is required for factory direct purchases.

Warranty Exclusions: Warranty does not apply to your product under any of the following conditions: **1.** The serial number has been removed or modified. **2.** Your product has been subjected to misuse or damage (including water damage, physical abuse, and/or improper installation). **3.** Your product has been modified in any way. **4.** Your receipt or proof-of-purchase is from a non-authorized dealer or internet auction site including E-bay, U-bid, or other non-authorized resellers.

LIMITATION OF WARRANTY: EXCEPT AS EXPRESSLY PROVIDED HEREIN, YOU ARE ACQUIRING THE PRODUCT "AS IS" AND "WHERE IS", WITHOUT REPRESENTATION OR WARRANTY. COBRA SPECIFICALLY DISCLAIMS ANY REPRESENTATION OR WARRANTY INCLUDING, BUT NOT LIMITED TO THOSE CONCERNING THE MERCHANTABILITY AND SUITABILITY OF THE PRODUCT FOR A PARTICULAR PURPOSE. COBRA SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES INCLUDING, WITHOUT LIMITATION, DAMAGES ARISING OUT OF THE USE, MISUSE OR MOUNTING OF THE PRODUCT.

The above limitations or exclusions shall be limited to the extent they violate the laws of any particular state. Cobra is not responsible for products lost in shipment between the owner and our service center.

General Warranty Information

Each product we manufacture is covered by our factory warranty. While each product may have unique components and policy, the general guideline below will apply to most Cobra products.

All Cobra products purchased factory-direct or from our Authorized Resellers will come with a full one to three (1-3) year warranty from the date of the original retail purchase (see policy statement above for full warranty details and exclusions).

Standard accessories packaged with each model will have a one-year factory warranty.

Accessory items have a one-year factory warranty.

Shipping to our facility is not covered in our warranty. Return shipping is included within the US.

This warranty is non-transferrable.

For the sake of clarity, 'repair or replace the Product or its defective part' does not include removal or installation work, costs or expenses which include but are not limited to labor costs or expenses.

Cobra will not be responsible for lost packages.