Cobra®

Operating Instructions

The Cobra line of quality products includes:

CB Radios

Dash Cams

Radar Detectors

Marine VHF Radios

Power Inverters

Accessories

RADAR/LASER
PROTECTION
RAD250

Nothing Comes Close to a Cobra®   English

Important Information

Federal Laws Governing the Use of Radar Detectors
It is not against federal law to receive radar transmissions with your Cobra radar/laser detector. The Communications Act of 1924 guarantees your right to receive radio transmissions on any frequency. Local laws that contravene this Act, while illegal, may be enforced by your local law enforcement officials until and unless they are prohibited from doing so by federal court action.

Safe Driving
Motorists, as well as operators of emergency or service vehicles, are expected to exercise all due caution while using this product, and to obey all applicable traffic laws. Do not attempt to change settings of the unit while in motion.

Security of Your Vehicle
Before leaving your vehicle, always remember to conceal your radar detector in order to reduce the possibility of break-in and theft.

Nothing Comes Close to a Cobra®   A1

Controls, Indicators and Connections

LaserEye
For detection of laser signals.

Windshield Bracket Mount

Speaker

12V DC Power Jack

On-Off/Volume Control
Allows you to adjust the volume of the alerts.

Dim Button
For adjusting the display brightness.

Mute Button
For manual mute or auto mute of audio alerts.

SEN Button
Adjust sensitivity to City or Highway modes to reduce false alerts.
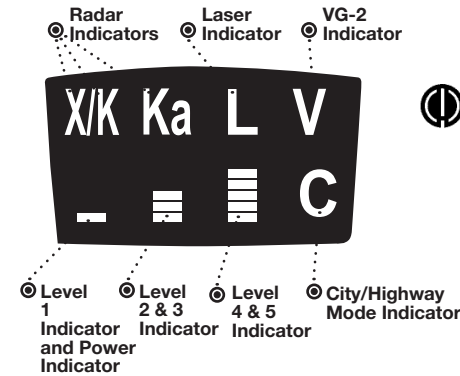
FCC NOTICE This device complies with part 15 of FCC rules: Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received including interference that may cause undesired operation.

AVIS FCC Cet appareil est conforme à la partie 15 des règles de la FCC: Son fonctionnement est soumis aux deux conditions suivantes: (1) Ce dispositif ne peut causer des interférences nuisibles, et (2) Cet appareil doit accepter toute interférence reçue, y compris les interférences qui peuvent causer un mauvais fonctionnement.

Easy-to-Read Display

Radar Indicators **Laser Indicator** **VG-2 Indicator**

X/K Ka L V

C

Level 1 Indicator and Power Indicator **Level 2 & 3 Indicator** **Level 4 & 5 Indicator** **City/Highway Mode Indicator**

NOTE: In This Manual
When steady, the display will be shown:

When flashing, the display will be shown:

Product Features

Congratulations! You've made a smart choice by purchasing a radar/laser detector from Cobra. Just look at some of the sophisticated features and capabilities your new unit includes:

Detection And Separate Alerts For:
Radar signals (X, K and Ka bands, with signal strength indicated), laser and VG-2 signals.

LaserEye
For detection of laser signals.

Instant-On Ready
Detects radar guns with "instant-on" (very fast) speed monitoring capabilities.

Tone Alerts
With adjustable volume.

Easy-to-Read Display
Easy viewing in any light.

City or Highway
Modes to reduce false alerts.

Dim
Press to cycle through different brightness settings.

Manual Mute Or Auto Mute
A mute function of audio alerts.

Mounting
Mounts easily on windshield or dashboard.

Just What You Want to Hear: A suite of several Cobra technologies help to further eliminate unwanted and false alerts. These include: **Auto Mute Mode, and CAS Immunity.**

Anti-Falsing Circuitry
Automatically reduces false alerts from erroneous sources including blind spot systems and traffic flow monitoring devices.

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.

Trademark Acknowledgement

Cobra®, DigiView®, EasySet®, Extra Sensory Detection®, IntelliMute®, IntelliMute® Pro, IntelliShield®, LaserEye®, Nothing Comes Close to a Cobra®, VG-2 Alert®, Xtreme Range Superheterodyne® and the snake design are registered trademarks of Cobra Electronics Corporation, USA.

Cobra Electronics Corporation™, 14 Band™, 15 Band™, AURA™, IntelliLink™, IntelliScope™, IntelliView™, Revolution™ Series, SmartPower™, Super-Xtreme Range Superheterodyne™, S-XRS™, and Voice Alert™ are trademarks of Cobra Electronics Corporation, USA.

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Contents

Introduction

## Your Detector

Customer Information

Installation

Where to Mount Your Unit

You will get optimum performance from your detector if you **Mount** it at a point approximately in the center of the vehicle, as low as possible on the front windshield without obstructing the unit's view of the road either to the front or rear. You can also mount it directly on the dashboard.

Windshield Mounting	Dashboard Mounting
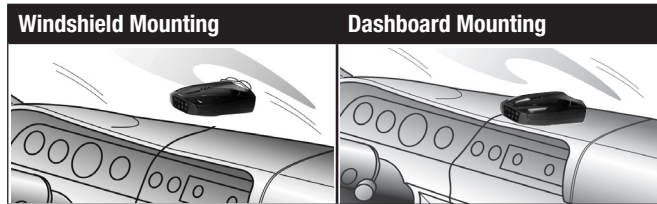
The unit's lens must not be blocked and the LaserEye should have a clear view out the back window to allow maximum detection.

The LaserEye Should Have a Clear View
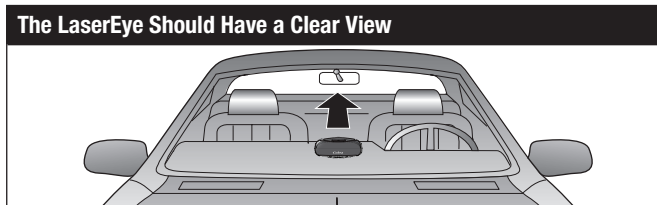
Radar and laser signals pass through glass but not through other materials and objects. Objects that can block or weaken incoming signals include:

- Windshield wiper blades
- Mirrored sun screens
- Dark tinting at the top of the windshield
- Heated windshields currently available on some vehicles (Instaclear for Ford, Electriclear for GM). Consult your dealer to see if you have this option.
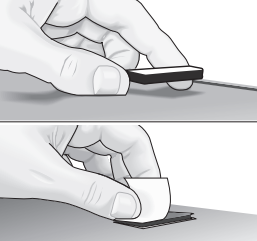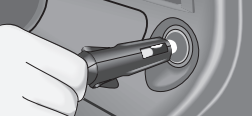
Windshield Mounting

1. Attach the rubber cups to the bracket.	
2. Make sure the rubber cups and your windshield are clean.	
3. Push the bracket firmly onto the windshield.	
4. Attach the detector to the bracket. **Check that the unit is parallel to the road's surface.**	
5. To adjust the angle if necessary, gently push or pull on the bracket to bend it. DO NOT use the detector to bend the bracket.	
6. Plug the power cord into the detector.	
7. Plug the cigarette lighter adapter on the power cord into your vehicle's cigarette lighter.	

Dashboard Mounting

1. Place the detector on the dashboard to find a location where the unit has a clear, level view of the road **and is parallel to the road's surface**. The angle CANNOT be adjusted after mounting

2. Remove the paper backing from one side of the hook-and-loop fastener.

3. Attach the pad to the dashboard at your chosen location and remove the other paper backing.

4. Attach the detector to the hook-and-loop fastener. You can remove and reattach the unit as often as you like.

5. Plug the power cord into the detector.

6. Plug the cigarette lighter adapter on the power cord into your vehicle's cigarette lighter.

Getting Started

Power Indicator Screen

To Turn On The Unit And Adjust The Audio Volume

Rotate the **On-Off/Volume** control clockwise (away from you).	**Audible Tone**	**Visual Display**
	Three beeps	The LED in the lower left corner of the screen will light to indicate that the power is On.

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.

Settings

When changing the Settings on your detector, please keep in mind:

■ Each time the unit is turned On the factory settings of **Highway** and **Auto Mute-On** will be set. They can be changed while the unit is in use as described in the following sections.

Highway/City Mode

Setting your detector to **City** mode sensitivity delays all X band audio alerts at lower signal strength levels. (A single beep will sound when the signal is first detected.) This will reduce false alerts while you are driving in, or near, urban areas where there are many sources for conflicting X band signals such as microwave towers and automatic door openers.

To change settings, follow the procedure listed below, which indicates what you will see and hear as you complete each step. The factory setting is **Highway** mode.

Highway Mode

SEN Button Press and release

City Mode

To Change From Highway Mode To City Mode		
Press and release the **SEN** button.	**Audible Tone**	**Visual Display**
	One beep	C LED Lights

To Change From City Mode To Highway Mode		
Press and release the **SEN** button again.	**Audible Tone**	**Visual Display**
	Two beeps	C LED Turns Off

Manual Mute

Your detector 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.

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.

Mute Button Press and release

To Turn Auto Mute Off		
Press and release the **Mute** button while no alert is occurring.	**Audible Tone**	**Visual Display**
	One beep	Audio Only

To Turn Auto Mute On		
Press and release the **Mute** button again while no alert is occurring.	**Audible Tone**	**Visual Display**
	Two beeps	Audio Only

Display Brightness

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

Bright

Press and release Dim Button

Dim

Dark

◉ Dim Button
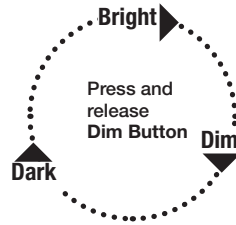
VG-2 Alert Settings

Police use radar detector detectors (RDDs) to spot users of radar detectors. Your detector is able to identify signals from **VG-2** RDDs and can provide alerts when any of these or similar devices are in use near your vehicle.

Your detector is invisible to VG-2 RDDs. You can choose whether you want to be alerted to VG-2 RDD signals. The factory setting for VG-2 alert is Off.

◉ **Dim Button**
Press and hold
for four seconds

To Turn VG-2 Alerts On and Off

While no signal is being detected, press and hold the **Dim** button for four seconds.	Audible Tone	Visual Display
	On = One beep	**V** LED Flashes Once
	Off = Two beeps	**V** LED Flashes Twice

Radar Alert Settings

The detector allows you to choose whether it will show alerts on the **X**, **K** and **Ka** Bands. The factory settings are: X, K, and Ka On.

To Turn X Band On and Off		
While no signal is being detected, press and hold both the **Dim** and **Mute** buttons for four seconds.	**Audible Tone**	**Visual Display**
	X On = Two beeps	**X/K** LED Flashes Twice
	X Off = One beep	**X/K** LED Flashes Once

To Turn K Band On and Off		
While no signal is being detected, press and hold both the **Mute** and **SEN** buttons for four seconds.	**Audible Tone**	**Visual Display**
	K On = Two beeps	**X/K** LED Flashes Twice
	K Off = One beep	**X/K** LED Flashes Once

To Turn Ka Band On and Off		
While no signal is being detected, press and hold the **Dim** and **SEN** buttons for four seconds.	**Audible Tone**	**Visual Display**
	Ka On = Two beeps	**Ka** LED Flashes Twice
	Ka Off = One beep	**Ka** LED Flashes Once

Signals Detected

The tables on the following pages show you the types of Signals your detector will detect, as well as the visual alerts it provides for each of them.

Audio Alerts

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. (See responding to alerts on page 14.)

Visual Display

An indication of the type of signal detected and, for radar signals, the signal strength will appear in the Easy-to-Read Display. Radar signal strength will be indicated by steady, flashing, or a combination of steady and flashing LEDs as shown in the signal strength chart below.

NOTE: In This Manual
When steady, the display will be shown:

When flashing, the display will be shown:

Signal Strength Chart

Signal Strength = 1 (Weakest Signal) Signal Strength = 2 Signal Strength = 3

Signal Strength = 4 Signal Strength = 5 (Strongest Signal)

Visual Display (continued)

Radar Signals and Visual Displays

Type of Signal	Visual Display
X Band Radar	**X/K** is Steady & lower LEDs show signal strength
K Band Radar	**K** is Steady & lower LEDs show signal strength
Ka Band Radar	**Ka** is Steady & lower LEDs show signal strength

X Signal Detected
Signal Strength = 1

K Signal Detected
Signal Strength = 3

Ka Signal Detected
Signal Strength = 5

Laser Signals and Visual Displays

Type of Signal	Visual Display
LTI 20-20*	**L** is Steady
LTI Laser*	**L** is Steady
Kustom Signals Laser 340*	**L** is Steady
Kustom Signals Laser*	**L** is Steady
Stalker LIDAR*	**L** is Steady
Laser Atlanta SpeedLaser/Kustom Signals-ProLaser II*	**L** is Steady

* Your detector provides 360° detection of these signals.

Laser Signal Detected

VG-2 Visual Display

Type of Signal	Visual Display
VG-2 RDD	**V** is Steady

VG-2 RDD Detected

Instant-On Detection

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

NOTE
You should take appropriate action immediately whenever an Instant-On alert is given.

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 or VG-2 nearby.	Exercise caution
Tone instantly begins repeating rapidly.	Radar or VG-2 nearby has been activated suddenly.	FULL ALERT
Tone repeats slowly as you approach a hill or bridge, then speeds up sharply as you reach it.	Probably 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

Understanding Radar and Laser

Radar Speed Monitoring Systems

Three band frequencies have been approved by the Federal Communications Commission (FCC) for use by speed monitoring radar equipment:

X band	10.525 GHz
K band	24.150 GHz
Ka band	33.400 – 36.00 GHz

Your detector detects signals in all three radar bands, plus Ku band (13.435 GHz), which is an approved frequency used in parts of Europe and Asia.

VG-2

VG-2 is a "detector detector" that works by detecting low-level signals emitted by most radar detectors. Your detector does not emit signals that can be detected by VG-2, but does detect VG-2 signals and will alert you when a device is in use near your vehicle.

LIDAR (Laser)

The correct name for the technology that most people refer to as laser is actually **LIDAR**, which stands for Light Detection and Ranging.

LIDAR operates much like radar. Its signal spreads out like a radar signal, though not as widely. Unlike radar, LIDAR must have a clear line of sight to its target vehicle throughout the entire measurement interval. Obstructions such as sign posts, utility poles, tree branches, etc., will prevent valid speed measurement.

Some common questions about LIDAR include:

- **Does weather have any affect on LIDAR?**
  Yes. Rain, snow, smoke, fog or airborne dust particles will reduce the effective range of LIDAR and can, if dense enough, prevent its operation.

- **Can LIDAR operate through glass?**
  Yes. Newer LIDAR guns can obtain readings through most types of glass. However, the laser pulse also can be received through glass to trigger an alarm by your detector.

- **Can LIDAR operate while in motion?**
  No. Because LIDAR operates by line of sight, the person using it cannot drive the vehicle, aim and operate the gun all at the same time.

- **Is it legal for police to use LIDAR?**
  Yes, LIDAR is allowed to be used in all 50 States by police. Your detector detects LIDAR (laser).

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.

- Connect a USB device to the type A USB port on your power cord. If it does not provide a charge/power to your phone/device then the internal fuse is likely blown. Contact Cobra for support or spare parts.

Specifications

Band 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
VG-2	11.500	± 0.250	GHz

WARNING Modifications or parts substitutions not approved by Cobra Electronics Corporation may violate FCC Rules and void your authority to operate this equipment.

U.S. Patent Number: 6,078,279

Limited 1-Year Warranty

Cobra Electronics Corporation warrants that this product and the component parts thereof, will be free of defects in workmanship and materials for a period of one year from the date of first consumer purchase.   This warranty may be enforced by the first consumer purchaser. If the product is under warranty, it will be repaired or exchanged depending on the model as determined at Cobra's sole discretion. Such remedy shall be your sole and exclusive remedy for any breach of warranty.

The procedure for obtaining service and support, and the applicability of this warranty, will vary depending on the country or jurisdiction in which you purchased and utilize the product. For the details on obtaining product service, support and warranty please visit www.cobra.com/support

Provided that the product is utilized within the U.S.A.- Cobra will, without charge, repair or replace, at its option, defective products, 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, to an address in the U.S.A., will be at Cobra's expense, if the product is repaired or replaced under warranty.

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state and country to country.

Exclusions: This limited warranty does not apply: 1) To any product damaged by accident; 2) In the event of misuse, ordinary wear, failure tofollow directions, or improper maintenance 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 product was purchased or is utilized in a jurisdiction not covered by the limited warranty.

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 and countries 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.   This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.

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

For products purchased in the U.S.A. you may also call 1-773-889-3087.

For Products Purchased in the U.S.A., if your product should require factory service, please go to www.cobra.com/support and follow the instructions for returning your product to the Cobra Factory Service Department for service.

Optional Accessories

You can find quality Cobra products and accessories at your local Cobra dealer, or in the U.S.A., you can order directly from Cobra at www.cobra.com

Windshield Mounting Bracket
Includes suction cups
Item #545-159-N-001

Straight 12V DC Power Cord
Includes plug and fuse
Item #420-030-N-001

Coiled 12V DC Power Cord
Includes plug and fuse
Item # 420-026-N-001

Straight Combination Radar USB Cord
Includes plug and USB Output
Item # PWR USB-01

Dual Port Power Adapter
Includes adjustable plug (up to 90˚) and fuse
Item # CLP-2B

Hardwire Cord for Radar
Includes fuse
Item # RA-PSCB

Install Mount
Includes 3M Dual Lock
Item # 545-002