

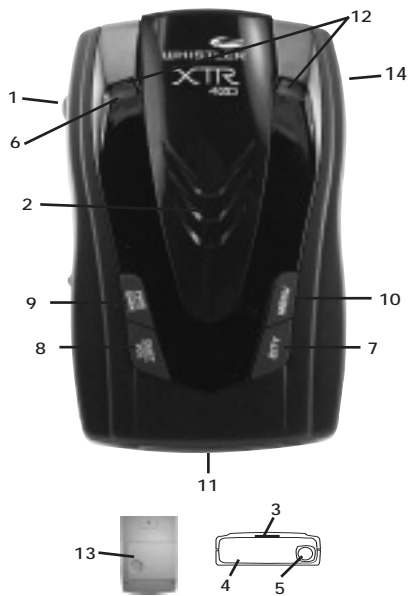
OWNER'S MANUAL

XTR-420

**Battery Powered**  
**LASER-RADAR**  
**DETECTOR**



## WHISTLER FEATURES XTR-420



## FEATURE DESCRIPTIONS

Whistler's ergonomic and user-friendly design provides a new level of operating convenience. Special features include:

1. **Bracket Release Button** – Provides quick and easy release of the mounting bracket.
2. **Speaker** – Provides distinct audio warnings for X, K, Ka band radar, safety radar, laser and VG-2.
3. **Mounting Bracket Location** – Slot holds mounting bracket firmly.
4. **Radar Antenna** – Compact, high-efficiency antenna receives radar signals.
5. **Front Laser Antenna** – High gain optical lens provides increased sensitivity and field of view for leading-edge laser detection.
6. **Rear Laser Antenna** – An integrated optical waveguide provides superior detection of laser signals transmitted from behind.
7. **City Button** - Reduces the annoyance of false alerts typically encountered in urban driving areas.
8. **Quiet/VOL Button** - Pressing QUIET before a signal is detected engages Auto Quiet Mode. Pressing QUIET during a radar/laser encounter silences audio alerts. (A long press of QUIET turns VG-2 On/Off) Adjusts volume Up/Down.
9. **Power/Dark** - Turns unit on/off and engages Dim/Dark settings (press and hold).
10. **Menu Button** - enters Option Select mode
11. **Icon Display** – Provides distinct visual confirmation of signals detected, signal strength, and engaged modes of operation.
12. **Low Profile Alert Periscopes** - Provides an additional attention getting visual alert
13. **Battery Compartment** – Compartment for 3 NIMH batteries.
14. **Power Jack** – Provides connection for the power cord.

## INSTALLATION

### Battery Installation

Unit requires 3 AA rechargeable batteries (included). **Unit may need to be plugged into a live lighter socket to fully charge the batteries overnight before first use!** Remove the battery compartment cover by sliding the cover to the edge of the unit and lift up. Insert batteries and reinstall battery compartment cover.

Ni-MH rechargeable batteries should be used and are included with the unit.

**Note:** *DO NOT mix battery types as this can damage the batteries.*

**Important:** *Use only NIMH batteries. Ni-Cd batteries should not be used. These batteries will not provide enough capacity to be useful.*

**Caution:** *Only use rechargeable batteries. Charging non-rechargeable batteries can damage the unit or possibly cause the batteries to explode. See battery charging section (page 6) to charge batteries with the power cord.*

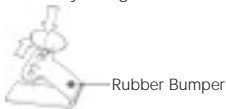
### Mounting Guidelines

- Mount the unit as low as possible near the center of the windshield.
- Do not mount your unit behind wipers, ornaments, mirrored sunscreens, etc. These obstructions have metal surfaces which can affect radar and laser signals and reduce critical warning time. (Regular tinted glass does not affect reception)
- Some windshields have an Instaclear™ or Electriclear™ type coating, which affect radar signals. Consult your dealer or the vehicle's owners manual supplied with your vehicle to determine if your windshield has this coating.
- Avoid placing unit in direct contact with the windshield.
- To reduce the possibility of theft, unplug and conceal your unit when not in use.

## INSTALLATION

### Windshield Mounting

- Install the two suction cups and rubber bumper onto the bracket by fitting them into their holes.



- Press the suction cups onto the windshield at the location you have chosen.



- Slide the detector onto the bracket until it locks into place.
- If necessary, the unit may be leveled by bending the windshield bracket.
- Press the bracket release button and remove the detector before bending.

### Power Cord Connection

- Plug the small end of the power cord into the unit's power jack.
- Plug the large end into the vehicle's cigarette lighter socket.

**Note:** Cord fits tightly into detector. When installing the cord, expect some resistance.

### Fuse Replacement

The lighter socket plug is equipped with a replaceable 2 amp, 3AG fuse located behind the silver tip. To replace the fuse, carefully unscrew the tip of the plug.

**Important:** Unscrew slowly. The tip contains a spring which may fly out when disassembling. Insert the new fuse with the spring and screw on the tip. With use, screw cap on plug may loosen. Retighten occasionally.

Unscrew the tip of the lighter socket plug carefully when replacing the 2 amp fuse.



## OPERATION

### Battery Life

The unit can provide approximately 15 hours of laser/radar detection. There are settings that can maximize battery life.

- 1) Display intensity set to Dim
- 2) Auto Quiet engaged
- 3) Auto Shut Off set to 1 hour
- 4) Using a lower volume setting
- 5) Using Mute whenever possible

**Important:** The detector's display will flash a "I" and three fast beeps will sound when the batteries have approximately one hour of battery life left. This is a reminder to recharge your batteries.

### Battery Charging

**Power Cord:** Plug included power cord into the detector and into the lighter socket to slowly charge the rechargeable batteries. This will also provide power to the detector. The display will dimly blink the "III" icon when the unit is charging the batteries. When the power cable is removed from the detector or the vehicle's lighter socket is switched off, the unit will alarm and illuminate the icons in a sequencing fashion, then turn off.

**Note:** The unit will continue to charge when powered off until it senses a full charge.

**Important:** As with all battery operated devices, remove the batteries when this unit will not be used for an extended period of time. Damage caused by leaky or improperly charged batteries are not covered under warranty. Check with the battery manufacturer about their specific product warranty and disposal recommendations.

## OPERATION

### Power On and Self-Test

Each time your Whistler detector is turned on, an automatic self-test sequence confirms that the speaker and visual display is functional.

- Press Power. Display shows in order:
  1. X-Band
  2. K-Band
  3. Ka-Band
  4. LASER
  5. SWS
  6. Battery Status
  7. Highway

### Self Test Mute

Press the Quiet button during the self-test sequence to cancel the self-test audio. This will not affect radar/laser alerts. To restore the self-test audio, press the Quiet button during the next self-test.

### Setting Saver

Setting Saver saves your personalized settings when the detector is turned off or you lose power.

### Feature Engaged Confirmation

Each time a button is pressed, one beep confirms feature "on", two beeps confirm feature "off".

### Audio Level Adjustment

The audio levels can be adjusted high to low or low to high.

- Press and hold the "VOL" button and the volume level will increase (Level "III") then proceed to lower the volume (Level 0). Continuing to hold this button will repeat the sequence. As audio level is adjusted, beeps are provided and the display indicates volume level.

## OPERATION

### Quiet Mode

Quiet cancels audio during an alert and any new alert within 20 seconds. After 20 seconds, approximately 2 beeps are provided on any new alert and unit then remains quiet.

- Press Quiet to cancel the audio.
- To restore the standard audio alert pattern, press Quiet a second time during an alert or turn the unit off, then on.

### Auto Quiet Mode

Auto Quiet reduces the selected audio level to level (1) approximately 5 seconds after a radar or safety radar signal is detected. The alert for any new signal within 20 seconds will resume at level (1). Auto Quiet does not affect VG-2 or laser alerts.

- Press Quiet/Menu (before a signal is detected) to engage Auto Quiet.
- Once the Auto Quiet mode is engaged, you may cancel the audio alarm by pressing Quiet.
- Press Quiet (when the unit is not alarming) to cancel Auto Quiet mode.

### Low Profile Alert Periscopes

Whistler's Low Profile Alert Periscopes provide an added attention getting visual alert. The two extra LEDs flash on and off when the unit alarms to provide a unique visual alert. This alert can be programmed through the Option Select Mode to be: ON, OFF, or FLASHING during alerts.

## OPERATION

### City/City I/City II Mode

Whistler's Three Stage City Mode is designed to reduce the annoyance of automatic door openers, intrusion alarms and other devices which share frequencies with police radar. Generally, X band is used for these devices.

- Press City to cancel Highway mode and engage City mode.  
Display will switch from "H" to "C"
- Press City again to enter City I Mode
- Press City again to enter City II Mode

**Note:** After 3 seconds, "I" or "II" City Mode indicator turns off.

- Press City a fourth time to cancel City II Mode and return the unit to Highway Mode.

In City Mode, weak speed/safety radar signals give an initial alarm of two beeps, and then remains quiet unless the signal becomes very strong. When the signal strength increases, two additional beeps are provided. City 1 and City 2 Modes operate the same as Highway Mode, but in City 1 Mode, X band requires a stronger signal to alert. In City 2 Mode, X-band is not detected.

**Caution:** Some towns/small cities may still be using X band radar. City Modes do not change the audio alert for laser or VG-2.

## OPERATION

### Teach/Tutorial Mode

Provides simulated alerts for each type of signal.

- Press City and Quiet simultaneously and release.
- Unit will go thru all the bands detected.
- Press Power to exit.

### Dim/Dark Mode

Dim/Dark Mode reduces the illumination of the display

- Press and release the Dark button to reduce illumination to a dim setting.
- Press and release the Dark button a second time to engage Dark Mode. The display illumination is further reduced.

Dim or Dark can be engaged during an alert. In Dark Mode, the display goes dark for as long as a signal is being detected and 20 seconds after, then the display returns to the dimmer setting.

- Press and release the Dark button a third time to restore the display to full illumination.

### VG-2 Detection

When a VG-2 signal is detected, the VG-2 alert is sounded for 3 seconds and the display flashes the "VL" icon for 30 seconds. This cycle is repeated if the VG-2 signal is again detected.

During the period a VG-2 signal is detected, a radar signal cannot be detected. However, because the VG-2 alert has confirmed that a patrol car is nearby, you are already aware of the potential for speed monitoring and can adjust your speed accordingly. Laser detection is not affected while a VG-2 signal is detected.

## OPERATION

### VG-2 Audio/Visual Alerts

**Note:** You must turn this feature on before it will detect VG-2.

When a VG-2 signal is detected, the detector 'hides' its own radiated signal and becomes undetectable by the VG-2.

Every 30 seconds, the detector checks for a VG-2 signal. If a VG-2 signal is still present, the unit continues to hide and repeats the VG-2 alert. If no signal is detected, two beeps are provided, indicating an "all clear" condition. During a VG-2 Alert, X, K, and Ka band signals cannot be received (Reference page 21 for VG-2 information).

See "Menu Mode" for engaging/disengaging VG-2.

### Auto Shut Off Mode

Auto Shut Off Mode automatically shuts off the detector.

The timer is reset:

1. Each time the detector is turned off
2. The optional power cord is unplugged
3. Any button is pressed before the timer has expired.

The detector will alert you with an audible and visual warning before it shuts off. This auto off function can be programmed for the following: Off, 1, 2, or 3 hours. During this warning you can reset the timer by pressing any button. If the unit has automatically turned itself off, press the Power button to turn the unit back on. You can manually engage the Auto Shut Off Mode by pressing and holding the City button until one beep is heard.

See "Menu Mode" for Auto Shut Off timer settings.

## OPERATION

### Menu Mode

#### Engaging/Disengaging VG-2:

- Press the "Menu" button and release, a single beep will be heard. The "H" will flash. Press the "Pwr/Dark" button to engage V/L (ON) or Press the "Quiet/Vol" button to disengage V/L (Off).

#### Auto Shut Off Mode Functions:

The Auto Shut Off feature can be disabled or changed to 1 hour, 2 hours or 3 hours.

- Press the "Menu" button and release, a single beep will be heard
- Press and release "Menu" again. The "C" will flash and the signal strength indicators represent hours.
- Press the "Quiet/Vol" button will change the selection. (I=1 hour, II=2 hours, III=3 hours)
- When no signal strength icons are flashing
- If no indicator is lit, the feature is disabled.

#### Flashing Periscopes:

The Periscopes can be disabled, remain on or set to flash while alarming.

- Press and hold the "Menu" button and release, a single beep will be heard.
- Press and release "Menu" again until the "H" and "C" icons and the periscopes flash.
- Press the "Quiet/Vol" button will change the selection (On/Off/Flashing). When no periscopes illuminated, the feature is disabled.

Press and hold Menu for 3 seconds to exit

## OPERATION

### Stay Alert Feature

The Stay Alert Feature is designed to test a driver's alertness. To engage (when unit is not alarming):

- Press and hold City until a first audible alert is given. The "H" or "C" will flash indicating Stay Alert is activated.

Within 30-60 seconds an alert is sounded; to show alertness, the driver must press either the "City", "Volume", or "Quiet" buttons within 3-5 seconds. If a button is pressed within 3-5 seconds, the cycle is repeated.

If a button is not pressed within 3-5 seconds an alarm sounds and multiple scrolling icons will appear on the display.

- Press Power to cancel Stay Alert.

**WARNING!!!** Stay Alert is NOT intended as a substitute for adequate rest. You should NOT operate a vehicle if you are drowsy. During extended periods of vehicle operation, you should take frequent breaks. Improper reliance on the Stay Alert feature may result in vehicle damage, personal injury or death. **NEVER OPERATE A VEHICLE IF YOU ARE DROWSY.**

### Safety Warning System™

In communities where Safety Warning System™ transmitters are located, the detector will receive over 60 messages. When Safety Radar is detected, the audio alert is given and the display alternately flashes the "I", "III" and "II" icons.

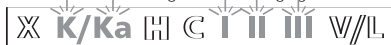
**Note:** Not all areas have Safety Warning System™ transmitters.

## LASER/RADAR ALERTS

### Speed Radar Audio/Visual Alerts

When X, K, or Ka band is detected, the band ID and signal strength are displayed. The audio alert is continuous and has a geiger counter-like pattern. The faster the beep, the closer or stronger the radar source.

"I" = weak signal, "III" = strong signal



"K/Ka" icon will flash for Ka detection

### Laser Audio/Visual Alerts

When a laser signal is detected, the "VL" will be illuminated.

### Pulse Protection\*

Pulse (instant-on) radar is more difficult to detect than conventional radar because it remains off until activated to measure the speed of a targeted vehicle.

When a pulse type transmission is detected, your Whistler detector sounds an urgent 3-second audio warning and the display will show a max signal strength level.



After the 3-second pulse alert, the standard alert pattern continues for as long as the signal is present.

It is important to respond promptly to a pulse alert, since warning time may be minimal.

## ALERT PRIORITY

### Alert Priority

When two or more signals are received at the same time, the alert priority is:

1. Laser
2. VG-2
3. Speed Radar
4. Safety Radar

#### Example:

If X band is alerting, then suddenly a VG-2 signal is detected, the VG-2 warning will override the X band alert.

## POP™ MODE ALERTS

### POP™ Mode Alerts

Because POP™ Mode radar utilizes the same K or Ka band frequencies, POP™ Mode Alerts will be displayed as regular radar alerts.

## RESET FEATURES

### Reset Features

All user features can be reset to factory settings.

- Unplug Power Cord from unit.
- Remove Batteries.
- Press and hold Power and Quiet buttons.
- Plug Power Cord into unit.
- Wait for 2 beeps.
- Release Power and Quiet buttons.

**Unit is now reset to the following features and settings.**

**Default factory settings are:**

1. Audio to level (4)
2. Display shows "H"
3. Auto Quiet Mode OFF
4. VG-2 Detection Mode OFF
5. Auto Shut Off to 1 hour
6. Full Power Up sequence
7. Dim/Dark to full Illumination
8. Periscopes to Flashing

## TROUBLESHOOTING

Your Whistler detector is expertly engineered and designed to exacting quality standards to provide you with reliable, trouble-free operation. If your unit has been correctly installed following the guidelines in this manual, but is not operating optimally, please refer to the troubleshooting guide below.

### PROBLEM: No display or audio.

- Make sure batteries are installed with the correct polarity.
- Make sure batteries are fully charged.
- Make sure battery contacts are clean.
- Check fuse in Whistler plug; replace if necessary with a 2 amp 3AG type.

## TROUBLESHOOTING

- Check fuse for lighter socket; replace if necessary.
- Make sure lighter socket is clean.

### **PROBLEM: Unit alarms when vehicle hits bumps.**

- Make sure batteries are seated properly.
- Make sure that the battery door is fully closed.
- Make sure battery contacts are clean.
- Check for loose lighter socket; tighten and clean.
- Check connections at both ends of power cord. Substitute another cord to determine if cord is defective. Return defective cord to the factory.

## CARE AND MAINTENANCE

### **Care And Maintenance**

During the summer months, avoid prolonged exposure to direct sunlight by removing your unit from the dash when your vehicle is parked for an extended period of time. Do not spray water, cleaners, or polishes, directly onto the unit. The spray may penetrate through the openings and damage the unit. Also, do not use any abrasive cleaners on the unit's exterior.

As with all battery operated devices remove the batteries when this unit will not be used for an extended period of time. Damage caused by leaky or improperly charged batteries are not covered under warranty. Check with the battery manufacturer about the specific battery warranty.

## ARE DETECTORS LEGAL?

### **In Most States YES!**

Laser-Radar detectors are legal in every state for automobiles and light trucks (under 10,000 lbs.) except Virginia and Washington, D.C., which have local regulations restricting the use of radar receivers in any vehicle.

The Federal Highway Administration (FHWA) passed a nationwide regulation, effective January 1994, which prohibited radar and laser detector use in vehicles over 10,000 lbs.

## FCC INFORMATION

### **FCC ID : HSXWH15**

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.

**Important:** *FCC requirements state that changes or modifications not expressly approved by Whistler could void the user's authority to operate the equipment.*

## SPEED MONITORING

### **Radar Facts**

A radar gun operates by transmitting radio waves at certain frequencies which reflect off objects and are picked up by the radar gun's receiving section. When a radar beam reflects off a moving target, a measurable frequency shift occurs. The radar unit converts this shift into miles per hour to determine your vehicle's speed. Currently, the FCC (Federal Communications Commission) permits operation of traffic radar guns at X Band (10.500 - 10.550 GHz), K Band (24.050 - 24.250 GHz), and Ka Band (33.400 - 36.000 GHz).

**Note:** *A radar detector will not alarm if an officer is not transmitting on any one of the above radar bands.*

### **POP™ Mode**

POP™ Mode is a feature on some radar guns operating on K and Ka bands. When the gun is in POP™ Mode and activated, a brief burst of energy, less than 1/15 of a second, is transmitted and the vehicle's speed is quickly acquired. A detector without POP™ Mode detection capability cannot respond to this brief transmission.

## SPEED MONITORING

### Laser Facts

It's well documented that many radar guns cannot reliably provide the speed of a targeted vehicle that is traveling in a group of vehicles. In contrast, a laser gun can target a specific vehicle out of a line of traffic and determine its speed. The advantage of laser over radar in terms of target identification is the result of the laser gun's narrow beam. A radar gun's transmission can cover more than a four-lane highway at a distance of 1,000 feet, compared with a laser gun's transmission which covers about 3 feet at the same distance. For best protection, keep these points in mind:

- Because the vehicle's license plate or headlights are the laser gun's primary targets, mounting the Whistler detector on the dashboard can improve laser detection at short range.
- Do not follow closely behind any vehicle. If you can't see past a vehicle ahead of you, chances are your detector won't either.
- The receiving range of laser signals will not be the same as radar signals. Laser guns are most often used at short range.

Whistler Laser-Radar detectors receive all current laser guns which operate at a laser wavelength of 905 +/- 10nm.

- Pro Laser™ I II III
- LT1 20-20
- Ultra Lyte

## SPEED MONITORING

### Laser Tips

If you are the targeted vehicle, a laser gun can often determine your speed within a few seconds after you receive an alert. In this situation there is generally no time to safely adjust your speed. However, if you are traveling near or behind the targeted vehicle and receive an alert, response time should be sufficient. Any laser alert, regardless of duration, requires immediate action!

### Other Speed Detection Systems

Several techniques other than radar or laser are used to measure vehicle speeds. When these methods are being used, no detector can provide a warning. These techniques include:

- **Pacing** - A patrol car drives behind you and matches your driving speed.
- **Vascar/Aircraft** - The time it takes a vehicle to travel a known distance is measured.

### Radar Detector Detectors: VG-2, Spectre

The Interceptor VG-2 or simply VG-2, is one type of microwave receiver used by Police to detect signals radiated by the local oscillator of a radar detector. Because its purpose is to identify persons driving with radar detectors, these devices are known as a "radar detector detector" (RDD).

An RDD is the primary tool used by the police to identify radar detector equipped vehicles. If caught in a state or country where detectors are illegal (see page 18), drivers risk losing their radar detector and receiving a fine. In addition, instant-on radar is almost always used in combination with an RDD, leaving unsuspecting motorists vulnerable to receive two tickets - one potentially for speeding, the other for possession of a detector.

## SPEED MONITORING

**Note: Having a radar detector capable of detecting the VG-2 may alert you to the presence of a speed trap. The newest tool Police have to detect radar detectors is called Spectre. Spectre can detect the majority of undetectable (VG-2) laser/radar detectors on the market.**

It is the responsibility of the radar detector user to know and understand the laws in your area regarding the legality of the use of radar detectors.

## WARRANTY INFORMATION

### Consumer Warranty

This Whistler Laser-Radar detector is warranted to the original purchaser for a period of one year from the date of original purchase against all defects in materials and workmanship. This limited warranty is void if the unit is abused, modified, installed improperly, if the housing and/or serial numbers have been removed. There are no express warranties covering this product other than those set forth in this warranty. All express or implied warranties for this product are limited to the above time. Whistler is not liable for damages arising from the use, misuse, or operation of this product.

**Note: Damaged caused by incorrect battery placement or battery leakage is not covered under this warranty.**