

# Radar Detectors

## Are radar detectors legal?

Laser detectors are completely legal in every state when used in automobiles or light trucks (under 10,000 lbs.). Similarly, when used in automobiles or light trucks, radar detectors are legal in almost every state. Exceptions are Virginia and Washington DC, which have local regulations restricting the use of radar receivers in any vehicle. Concerning trucks over 10,000 lbs., the Federal Highway Administration (FHWA) issued a regulation, effective January 19, 1994, which prohibits nationally radar and laser detector use in these types of vehicles.

## Can I use my detector overseas?

Yes and No! Some countries use the same frequencies as we do. Some countries use K band combined with other bands not used here. Before bringing a detector overseas you need to first determine what frequencies are used in that country.

Just a word of warning for those overseas planning on visiting the USA. While visiting, you may want to purchase a radar detector over here but be careful. Some retailers may mark an inexpensive unit and say that they are "Euro Ready" or "Retuned for European radar". Whistler does not sell European units in the USA, nor do we "retune" them for sale in the USA. We have overseas distributors to handle these types of sales. As most consumer advocates warn - "buyer beware".

## Do your High Performance or Optimum Performance Radar Detector models contain a MMIC?

No, the MMIC is reserved for our Maximum Performance models.

## Highway vs. City Modes, which do I use?

Highway mode provides full audio and visual warning of laser/radar systems while maintaining full sensitivity. Highway mode is the default setting of all Whistler's laser/radar detectors. City mode helps reduce the annoyance of automatic door openers and burglar alarm alerts by providing an initial alert (same distance as Highway Mode) then remaining quiet unless the signal strength becomes very strong. When the signal increases the unit will alert briefly to notify you of the change in signal strength.

**Which do you use?** It's really up to you, There is no performance advantage either way. If you have a quiet vehicle then using City mode will be fine. If your vehicle is a convertible or is noisy, then Highway is best so you will not miss any alarms.

**NOTE:** City Mode(s) does not affect laser reception.

## How common is the use of laser for speed monitoring?

Less than 1,000 laser guns are in service in 45 states at present. Most are used by city police on urban multi-lane roadways although some state highway patrols - Illinois and Ohio to name two - have dozens of units spread throughout the state. The use of laser guns for speed monitoring is expected to increase, but will remain limited due to their high cost-four times that of a moving radar-and limited attractiveness to agencies that favor the convenience, offered by conventional moving radar. Currently, laser guns account for less than 5% of the total number of speed monitoring guns (radar and laser) sold in the U.S. annually;

during the next five years, this figure is expected to remain under 8%. Laser guns will likely be in service in every state within a few years.

#### How does a laser detector work?

Laser transmits an invisible light beam at a frequency (actually it transmits a "Wavelength") of 905 nanometers. A nanometer is how a light wavelength is measured. Same idea applies to a TV signal or radio signal. These signals are measured in hertz - megahertz to be precise.

Since laser guns use a specific light frequency or wavelength, it is possible to detect a laser's signature light pulse rates. Different laser guns operate at different light pulse rates. Some competitors call them "bands". All Whistler radar/laser detectors receive all current laser guns in use.

Keep in mind that laser detectors act differently than radar detectors. Since the narrow laser beam produces very little "scatter"- random bits of electromagnetic energy bouncing down the road -it is much harder to detect than a powerful radar gun that blankets the countryside with easily detectable microwave signals. Laser guns operate exclusively in instant-on mode and usually target vehicles at short range. Similar to instant on radar, if you are the target vehicle don't expect much warning. The result is your laser detector usually will offer less advance warning because at 1000 feet the beam is only 3 feet wide and that the officer aims at your license plate or headlights. The distance from where your detector is mounted to the license plate can be greater than 3 feet. This will be outside of the laser beam. If the officer is not steady while targeting vehicles, scatter laser signals can result, giving a possible signal to detect.

#### How does a police radar work?

A police radar gun operates by transmitting radio waves at certain frequencies which reflects off objects (your vehicle) and are then picked up by the radar gun's receiving section. When radar waves reflect off a moving target, a measurable frequency shift occurs. The radar unit converts this shift into miles per hour to determine the target's speed.

Two basic types of radar are used - stationary and moving. Stationary radar must be used from a static site, typically a patrol car parked along side the road. With a single antenna moving radar, an officer can clock approaching vehicles while driving on patrol. Moving radar with two antennae - one facing forward, the other aimed out the back of the cruiser - can also clock vehicles even after they have passed by, headed in the opposite direction.

#### How do I change the clock on my radar detector?

To change the time you will need to adjust a setting or two in the Option Select Mode.

Press the MENU button to enter the Option Select Mode

Each time you press MENU, you will cycle to the next option

Look for an option that says "GMT -5" (the number may vary based on your current setting)

Use the DARK or QUIET button to adjust the number up or down, respectively, to set it to the proper offset based on your timezone

Eastern	=	GMT	-5
Central	=	GMT	-6
Mountain	=	GMT	-7
Pacific	=	GMT	-8
Hawaii-Aleutian = GMT -10			

Press MENU one more time to get to the option "DST YES" or "DST NO"

Press the DARK or QUIET button to turn Daylight Savings Time on (YES) or off (NO)

Wait 20 seconds or press POWER to exit the Option Select Mode

2 beeps will indicate the changes were saved and the display will return to showing the clock

### How do I install the hardwire kit (P/N #206880)

One end of the power cord plugs directly into the detector. Two connectors are located on the other end, the "horseshoe" or "U" connector (ground "-") and a "blade" connector (positive "+").

- Attach the "U" ground connector to chassis ground of the vehicle. This will be a metal area that makes contact with the metal of the vehicle.

- To make the detector go on/off with the key, attach the positive wire in one of the following methods:

- Locate an optional plug-in connector in the fuse box. Generally this connector is marked with "IGN" or "ACC".

Simply plug the spade connector into this jack. If no plug-ins are available on fuse box, go to option 2.

- Select a circuit in the fuse box that has power to it only when the key is on (i.e., radio fuse). Remove the fuse selected. Cut the spade connector off the positive wire and strip back the wire about 1/4 to 1/2 an inch. Wrap the wire around one of the fuse's metal tabs and replace back in fuse box.

- To make the detector stay on all the time, (manually turning it off), attach the positive wire in one of the following methods:

- Locate an optional plug-in connector in the fuse box. Generally this connector is marked with "BAT". Simply plug the spade connector into this jack. If no plug-ins are available on fuse box, go to option 2.

Select a circuit in the fuse box that has power to it all the time (i.e., dome light fuse). Remove the fuse selected. Cut the spade connector off the positive wire and strip back the wire about 1/4 to 1/2 an inch. Wrap the wire around one of the fuse's metal tabs and replace back in fuse box.

### How do speed guns work?

Laser speed guns transmit short bursts of invisible light which bounce off a target vehicle and return to the laser gun. By timing the outgoing and return trips of the light bursts, it can compute the target's speed. The laser's biggest selling point is its narrow beam-only about three feet wide at a distance of 1,000 feet-a feature that provides nearly foolproof target identification. (In comparison, a radar's beam is about 250 feet wide at 1,000 feet.) Laser guns must be used from stationary position and are most effective at short range, usually when targeting traffic at 700 to 1,200 feet.

### How far can I pick up an officer's radar gun?

Excluding instant-on radar, you can get enough range to slow down before the officer detects you.

We do not publish range in miles or feet due to the various types of radar in use (high power, low power, pulse). If we advertised 1.5 mile range and you came across a low powered radar gun you may only get 800 feet, for example. If that happened, you might get the impression that the detector may appear to be defective when in fact, it was providing detection for the type of radar that was transmitted.

### I saw the police car but the detector didn't go off. Why?

A detector can alert you of a police presence only when they are transmitting a signal. The officer may have a radar or laser gun in the car but the device may not have been turned on. No detector can alert you if no signal is transmitted!

Unit has no audio during self-test but is otherwise ok.

Models 1640, 1670LD, 1734, 1740, 1743, 1745, 1748 and new units with Icon/Icon 7 segment displays have an unique feature that mutes the self-test. To engage/disengage this feature, press the quiet button during the self-test.

What are the bands of radar used today?

Radar today operates on only three bands: X, K, or Ka.

Early detectors needed only to listen for X band radar. When K band arrived, dual band models able to receive both frequencies (X and K) were required. The introduction of Ka band photo radar (34.3 GHz) led to the development of triband models being able to detect X, K, plus a small portion of Ka band.

A fourth category of radar receivers called wideband, with X, K and "wideband" Ka (34.2 - 35.2 GHz) detection capabilities reached the market following the introduction of Stalker radar.

And finally, in response to the BEE 36A a new generation of radar detectors were developed termed superwideband, which cover all radar guns operating on X, K or "superwideband" Ka (33.2- 36.0 GHz).

What are the different types of radar detector displays?

Whistler detectors offer at least 4 different ways to display information; individual LED's, ICON display, 7 segment digital display or text display (either by LCD or the newest dot matrix display). All the displays provide the necessary information to the driver such as mode of operation, power on indication and signal strength, and band ID.

Following brief descriptions of each type of display:

#### **INDIVIDUAL LEDS**

- Green LED = Power on. Also VG-2 detection (VG-2 equipped models)
- Yellow LED = City mode
- Row of Red LEDs = Signal strength indication - the more LED's lit the stronger or closer the signal.
- Red and Yellow LEDs together = Band ID Red: K band, Yellow: X band and Both: Ka band.

#### **ICON DISPLAY**

- P = Highway mode full sensitivity on all radar/laser bands
- C = Includes City, City 1 and City 2 modes - Reduces the annoyance (City), Lowers X band sensitivity (City 1) or No X band detection (City 2).
- X = Indication of X band radar.
- K/Ka = Indication of K band radar. Flashing indicates Ka band radar.
- | || ||| = Signal strength indication - the more bars the stronger or closer the signal. Also indicates City1 and City 2 modes.
- V/L = Indication of Laser reception. Flashing indicates VG-2 detection.

#### **TEXT DISPLAY - LCD AND DOT MATRIX UNITS DISPLAY THE SAME**

- Highway = Full sensitivity on all radar/laser bands
- City = Includes City, City 1 and City 2 modes - Reduces the annoyance (City), Lowers X band sensitivity (City 1) or No X band detection (City 2). City 1 and City 2 not on all models.

- Pulse = Indication of an instant on or pulse radar.
- Numbers 1-9 = Signal strength indication - the higher the number the stronger or closer the signal.
- Auto quiet = When engaged lowers the volume to the lowest setting after several alarms.
- Laser = Laser detected
- Caution = Safety Radar detected - followed by SWS message.
- VG-2 = VG-2 detected

### What benefit does a MMIC provide?

A MMIC operates at microwave frequencies and are used for the purposes of microwave mixing, power amplification, low-noise amplification, and high-frequency switching.

### What does MMIC stand for?

MMIC is short for Monolithic Microwave Integrated Circuit

### What do I do if my unit will not power up?

Does the unit work in another vehicle?

If not, the first thing to check is the fuse in the power cord. The adapter (the part that plugs into the lighter socket) has a replaceable 2 amp 3 AG fuse inside it. The end of the adapter, which has the silver tip, unscrews to gain access to the fuse. CAREFUL: Unscrew slowly! The tip contains a spring which may fly out when disassembling. With use, screw cap on plug may loosen. Retighten occasionally.

If the unit works in another vehicle, it could be the lighter socket fuse. Check your vehicle's owner's manual for fuse location and the correct value. If the vehicle is old or the lighter is used often, the socket may be corroded or loose. Replacement of the lighter socket may be necessary.

### What is 360 degree protection

Units with 360 degree protection detect signals from all radar, laser (perimeter protection only - Laser is not shot from the sides), VG-2 and safety radar systems wherever they come from; front, rear or from the side.

### What is a false alert?

A number of transmitting devices are also allowed to operate on the same frequencies used by police radar. These are not considered false signals. For example, the automatic door openers commonly used by business are low powered X band transmitters. They produce signals that appear legitimate to a radar detector and cause it to alarm. Other sources produce "harmonics" signals, ghosts or look alike K or Ka band radar signals which make a radar detector give a false alert. A better radar detector reduces these types of false alarms.

### What is FDSR and TFSR? I see those acronyms sometimes.

TFSR and FDSR are selectable options on newer Whistler Radar Detectors.

**TFSR** (Traffic Flow Sensor Rejection) - This mode helps to reduce or eliminate common falsing from radar based traffic flow systems and vehicles equipped with radar based collision avoidance systems.

If you want to reduce/eliminate these types of alerts, engage TFSR

**FDSR** (Field Disturbance Sensor Rejection) – This mode maintains a quick reaction to radar. When radar based collision avoidance systems (FMCW) are detected, your unit will provide a brief 2 beep (less urgent) alert to make you aware this encounter is different than a typical radar. You may notice a standard alert when approaching some radar based road work signs while others provide the 2 beep alert as some utilize CW radar and others utilize FMCR radar.

If you want to remain aware of ALL radar systems but want to reduce the audible alert from FMCW systems, engage FDSR.

### What is Option Select Mode?

Option select mode allows turning certain features on or off or customizing how the unit operates. The unit will store these features in memory. Option mode is available only on units with Feature Memory capability. **You do not have to enter option select mode to receive police radar and laser signals, only for receiving VG-2 signals.**

**NOTE:** This mode can only be accessed when the unit is not receiving any radar or laser signals!

### What is "pulse" or "instant on" radar?

When radar detectors proved easily capable of sniffing out radar from miles away, radar gun manufacturers responded by producing instant-on radar. In the instant-on mode, the radar's transmitter is placed on hold, ready to fire but not yet producing a signal for detectors to hear. The officer waits until his target is very close and releases the radar from standby mode and then gets a speed reading within a second or so. In this situation, no detector offers much warning.

**TIP** - When traveling in unfamiliar highways always try to find a vehicle which is traveling at the same rate or faster than you are and keep several car lengths behind them. This way the other vehicle can "flush out the radar".

### What is stay alert and how does it work?

The Stay Alert feature is designed to test a driver's alertness. Within 30 to 60 seconds after the feature is engaged an alert is sounded; to show alertness, the driver must press the volume, city or the mute button within 3-5 seconds. If a button is pressed within 3-5 seconds, the cycle is repeated. If a button was not pressed within 3-5 seconds the unit alarms at full volume and the display shows an unique visual 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.**

### What is vehicle battery saver mode?

Vehicle battery saver mode automatically shuts off your detector after 3 hours if you forget to turn it off. The timer is reset if the detector is unplugged, turned off or any button is pressed before the timer has expired. The detector will alert you with an audible and visual warning (text units display "PWR OFF") before shutting off. Units with option select mode can turn this feature off. Most detectors draw around 300mA of power or just over 1/4 of an amp. When the vehicle battery saver kicks in, this power consumption drops by 90%.

What does this mean to me? Well let's assume that the radar detector is left on and the vehicle's battery has a 60 amp/hr rating (average sized battery). The above vehicle would have a dead battery in about 200 hours or approximately 8.3 days. Roughly the time for an 2 week vacation or company trip. Having a detector with a Vehicle Battery Saver feature will extend the battery life to about 2000 hours or 83 days making the travel home from that company trip a stress free one.

**Note:** These times are approximate and do not take into consideration the normal battery drain from the vehicle's electronics.

#### Where is the best mounting location for the radar detector?

A dash model can mount 3 ways; on the windshield, visor or dash. It is personal tastes or the vehicle's interior design that limits or forces a mounting location. The windshield mounting option is standard on every unit.

Laser reception is one concern when choosing a mounting location. The lower the unit is mounted on the dash the better the laser detection as the laser gun is generally "shooting" at the license plate or headlights.

#### Why are radar detectors described as dual band, triband, wideband or superwideband?

Early detectors needed only to listen for X band radar. When K band arrived, dual band models able to receive both frequencies (X and K) were required.

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#### Why does the volume go low after a few alerts?

The majority of the newer Whistler models have a feature called "Auto Quiet".

This feature reduces the volume to the lowest level or provides a low volume clicking, after several alarms.

To enter or exit this mode, simply press the "Quiet" button when the unit is not alarming to any signals.