OWNER'S MANUAL

Valentine One®

RADAR LOCATOR

With exclusive computer modes:

- **All-Bogeys®**
- **Logic®**
- **Advanced-Logic®**

The only one with Full Coverage

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A few things to remember

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Mike Valentine:
Electronics engineer,
former president of
Cincinnati Microwave,
and co-inventor
of Escort®

Dear Owner:

When an interest lasts for a year to two, that's a hobby. When it goes on non-stop for more than 25 years, I think it fairly can be called an obsession.

My wife says I'm obsessed with traffic radar. She's right. Radar is out there, skulking (Stalking?) around, hiding in the bushes. And I really get a kick out of finding it, finding it first, finding it every time. This is a civilian version of what the military calls Electronic Warfare Support Measures (ESM). I find it compelling, I can't help it.

I'm pretty good at it too. That makes it more fun. Back in the seventies, Jim Jaeger and I invented Escort. It was the best radar finder on the market for a long time and I enjoyed running the company that made it, Cincinnati Microwave.

Since starting my own company, we've made other products and earned a reputation for innovation. But nothing is quite as much fun for me as finding radar.

Now V1 has enjoyed its ninth birthday. The magnesium case still looks identical to the original, but the electronics inside have been completely changed time and time again. I believe in continuous improvement. That's what keeps V1's performance ahead of the pack. I don't believe in planned obsolescence. Whenever we make a performance breakthrough, we offer it to past customers as an upgrade. Even the first V1 can be updated to today's protection. See for details; you'll also find a wide variety of radar and laser information not available anywhere else.

I hope you enjoy your Valentine One as much as I enjoy mine. Thanks for trusting me to find radar and laser for you.

Sincerely,

Michael D. Valentine
President

Finds all radars

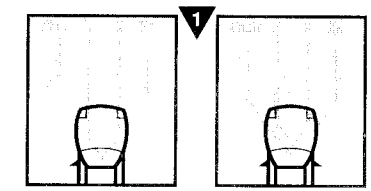
Valentine One covers all four bands.

X-band . . . . . most common for moving and stationary; can be used in "Instant-on" mode; this frequency is shared with burglar alarms and door openers.

K-band . . . . . moving and stationary radar; can be used in "Instant-on" mode.

Ka-band . . . . . widest of the radar bands; moving or stationary; can be used in "Instant-on."

Photo radar . . . K- or Ka-band; stationary only.

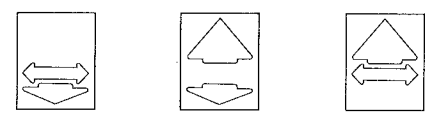


Older detectors find only two or three types of radar.

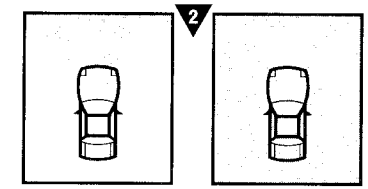
Valentine One™ finds all radars, including Stalker.

Tells Where

Valentine One is the only detector that locates radar. You are vulnerable to radar either ahead of you or behind you. But radar can't get you from the side.



Radar ahead **Radar to the side** **Radar behind**



Ordinary detectors scan ahead of your car only.

Valentine One™ scans all around your car.

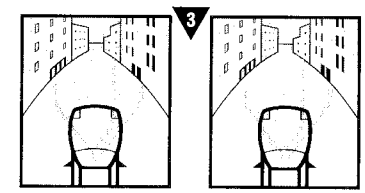
Tells How Many

Valentine One is the only detector that tracks multiple threats (bogeys). How many are out there? Consider:

Example 1: Let's say your detector is in full alert, then you see a radar unit. Naturally you assume the radar you saw is the cause of the alert. But what if there's another radar unit just up the road waiting for you?

Example 2: Let's say you're in an alert caused by a known X-band burglar alarm. What if a radar operator, using Instant-on, is simultaneously working the same territory?

In both cases, an ordinary radar detector would set you up for a big surprise because it would lead you to believe that only one bogey was out there. Valentine One is your insurance against surprises. It always tells you how many.



Ordinary detectors give the same warning for one or multiple radar signals.

Valentine One™ counts threats so you'll never be surprised.

Specifications

Operating Frequencies: 10.525 GHz (X-band)
24.150 GHz (K-band)
33.4 GHz - 36.0 GHz (Ka-band)
13.45 GHz (Ku-band): not used in U.S. —to activate Ku-band, see valentine1.com (Ask Mike, Tech Reports, How to Reprogram V1).
820-950 nanometers (Laser)

Power Requirements: 11.0-16.0 Volts DC negative ground
225 mA typical standby, 425 mA maximum alarm condition

Dimensions: 4.5 in. L x 3.6 in. W x 1.0 in. H
Weight: 6.4 ounces

Temperature Range: Operating: -20°C to +70°C (-4°F to +158°F)
Storage: -30°C to +85°C (-22°F to +185°F)

Parts & Accessories

The following items are available directly from us: Call toll-free 1-800-331-3030.

Concealed Display . . . . . enables operation of Valentine One with lights being visible to driver only

Remote Audio Adapter . . enables remote control and audio operation of Valentine One with headphone or additional speaker

Power Adapters

Lighter power adapter. . . . . powers Valentine One from car's lighter socket
Direct-wire power adapter. . powers Valentine One directly from car's wiring
Fuse. . . . . replacement fuse for lighter power adapter or direct-wire power adapter
Wiring-harness connector. . . provides simple, safe attachment to ignition wiring using ordinary hand tools

Mounts

Windshield mount . . . . . mount with patented mechanism for easy one-hand release
Visor mount. . . . . mount with spring clip for quick installation on visor
Suction cups (2). . . . . replacement cups for use with mount

Power Cords

Power cord, coiled . . . . . 1 ft. stretches to 6 ft.
Power cord, straight . . . . . 8 ft.

Additional Items

Owner's Manual . . . . . instructions for operation and troubleshooting
Dual Lock®. . . . . extra fasteners for Concealed Display and power adapter

What's Included

The following items are included with your order:

1. Valentine One Radar Locator
2. Windshield mount
3. Visor mount
4. Lighter adapter
5. Power cord, coiled
6. Power cord, straight
7. Spare suction cups
8. Direct-wire power adapter
9. Wiring-harness connector
10. Dual Lock® fastener
11. Owner's Manual
12. Spare fuse

The following items are included with the Concealed Display option, available at extra cost:

1. Concealed Display module
2. Straight power cord, 8-foot
3. Straight power cord, 3-inch
4. Display-module backplate, for mounting
5. Dual Lock® Fasteners

Starting Up

Valentine One has been designed for easy operation. Please follow these steps:

1. Mount Valentine One so that it has a clear view ahead and behind your car, using one of the mounts supplied. For more information on mounting, see pages 15-17.

2. Plug lighter adapter into lighter socket and connect power cord to jack. For more information on power connections, see pages 16-17.

3. Switch power "on" and adjust volume. For more information on control settings, see pages 12-14.

4. Enjoy Full Coverage radar protection. For more information on interpreting warnings, see pages 4-11.

What you should know about radar

How Traffic Radar Works

Traffic radar uses a radar beam to measure speed. Think of the beam as a searchlight. It's invisible because it's made of microwaves instead of light, but otherwise it acts very much like a light beam. It travels in straight lines. It's easily reflected. It scatters as it passes through dust and moisture in the air. And — this is essential — it has to hit your car before it can measure your speed.

Radar can't see around corners or through hills. It can't see you when you're blocked by another vehicle. When in the clear, how strongly your vehicle reflects the beam determines how far away the radar can read your speed. Generally, larger vehicles reflect more strongly than smaller vehicles. Trucks are "visible" on radar farther away than cars.

Radar reads your speed by sending out the microwave beam, bouncing it off your car, then analyzing the reflection that comes back to the radar. But it can only read oncoming speed or departing speed. It can't read speed from the side.

The principle on which radar operates is absolutely reliable. Radar equipment, on the other hand, is only as good as the quality of its design and manufacture. Traffic radars tend to be unreliable. They're cheaply made and therefore vulnerable to many interferences that cause false readings. And, compared to military and weather radar which have rotating antennas, traffic radars are vastly simplified. This simplification means that traffic radar cannot tell one car from another. The operator has to do that, and since the operator can't see an invisible beam any better than you can, he frequently doesn't know which vehicle's speed is being read. This is a source of many undeserved tickets.

How Radar Detectors Work

In essence, a radar detector is a radio tuned to microwave frequencies. Valentine One is an extremely sensitive radio, and it's tuned exactly to the frequency bands used by all traffic radar in the U. S. — X-band, K-band, Ka-band, including photo. Moreover, it has two antennas, one aimed forward and one rearward, so that it can locate the radar. In principle, though, it's a radio that listens for radar microwaves.

Because Valentine One is so sensitive, it can easily find radar from the scattering of the beam, and it can find these scatters a long time before the actual beam hits your car. The only exception is Instant-on radar.

How Instant-on (Pulse) Radar Works

As a defense against detectors, many radar units can be operated in the Instant-on mode, also called the Pulse mode. This means the radar is in position, but it is not transmitting a beam. So it cannot be detected. When the target is within range, the radar operator switches on the beam and the radar calculates speed, usually in less than a second. This calculation happens too quickly for the target (you) to respond in time.

Still, you can defend against Instant-on by recognizing it when the operator zaps traffic ahead of you. Valentine One's great sensitivity — and your attention to the nuances of its warnings — gives you at least a sporting chance.

The Difference Between X-Band and the K-Bands

A weak X-band ("Beep") alert usually means you have plenty of time. Moreover, door openers and burglar alarms operate on X (occasionally on K also). K and Ka bands are usually detected at closer range, and alerts on those frequencies are much more likely to be radar. So Valentine One makes a different sound ("Brap") to warn you of these more urgent threats (bogeys).

How To Identify Bogeys

Since all radar detectors are simply radios tuned to the microwave frequencies used by traffic radar, they automatically sound their alerts whenever they encounter known radar frequencies. Valentine One is an extremely high-performance radio so it alerts on those frequencies even when they are very weak.

The problem is, other devices that are not radar are also operating on radar frequencies. A detecting radio must respond to them too. Every response indicates a threat, a bogey. How can you tell the difference between radar and what people commonly refer to as false alarms?

Your judgment is the only way. But Valentine One provides information that simplifies identification of bogeys.

If you hear the "Brap" sound, assume that it's radar until you make positive identification. Virtually every bogey on the K-bands is the real thing.

But many non-radar devices operate on X-band so when you hear "Beep," look first at the Radar Locator. If it points to the side, the bogey is not threatening — radar can't get you from the side. If the Locator points ahead or behind, try for visual identification. And when the Locator changes from Ahead to Beside and then Behind, you can be sure the bogey is safely behind you.

Also, when you hear "Beep," check the Bogey Counter. Because many non-radar devices occur in multiples. For example, almost every microwave door opener has at least two transmitters, one for In and one for Out. Often such an installation will have multiple doors too, so there will be many transmitters. When you see numbers greater than 1 on the Bogey Counter, and particularly when you see it counting up quickly, you've probably found a door opener.

Burglar alarms are often multiples too because a single transmitter is not enough to safeguard an entire building. But microwaves from alarms tend to leak out of buildings far less than door-opener signals. So alarms may appear singly or in low multiples.

Single bogeys must be regarded as threats until you see them or put them safely behind you.

Remember too, that radar beams are easily reflected. Buildings, overhead signs and passing traffic are all good reflectors. When you have a strong signal from one direction, don't be surprised if the Radar Locator shows brief flickers from another direction too if you're driving by reflectors.

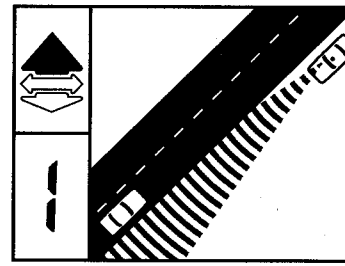
And never forget that a brief alert, acting alone, may be Instant-on radar zapping other traffic.

Finding radar

On-the-road situations

Valentine One gives you far more information about radar than any radar detector. Still, to achieve the best defense, you must interpret this information correctly. The following examples will help you get maximum protection.

Situation 1: You are driving toward a radar aimed at you.

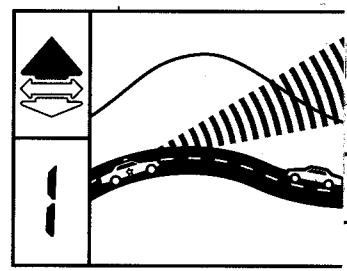


Your Warning: The Ahead arrow will glow. The Bogey Counter will show 1. You'll hear a slow Beep for X-band or Brap for other radars. As you come close to the radar, the Beeps (or Braps) will become more frequent until they merge into a continuous tone. By this time you should see the radar.

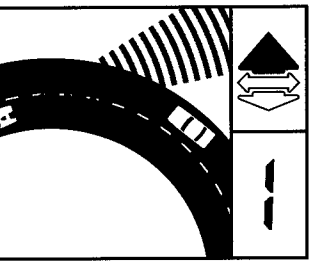
The Beside arrow and then the Behind arrow will glow as you pass the radar.

In this situation, moving radar and stationary radar will give the same alert, except the Beep rate will increase faster with moving radar because the closing speed is greater.

Situation 2: You're driving on a hilly road. Radar is waiting over the next hill.

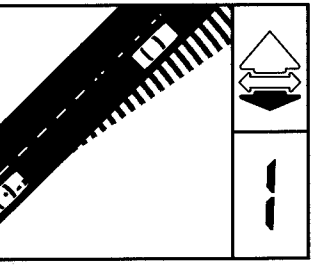


Your Warning: Well before you reach the hilltop, the Ahead arrow will glow. The Bogey Counter will show 1. You'll hear a slow Beep or Brap, and the rate will increase very quickly as you near the hilltop. As soon as you can see over the hill, you will probably spot the radar.



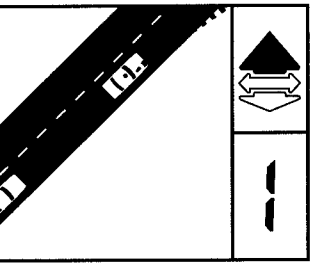
Situation 3: You're driving on a curvy road. Radar is waiting around the next curve.

Your Warning: The Ahead arrow will glow (because the radar is forward, not to the side, of your car). The Bogey Counter will show 1. You'll hear a slow Beep or Brap, and the rate will increase very quickly as you turn the corner. You should see the radar as soon as you're around the corner.



Situation 4: You're driving down the highway and moving radar is coming up behind you.

Your Warning: The Behind arrow will glow. The Bogey Counter will show 1. You'll hear a slow Beep or Brap, and the rate will increase *very* slowly. This sort of alert could last for miles because the closing rate is just a few mph. Finally, if you watch your mirrors, you'll see the radar. To mute the audio at any time, press the Control Knob.

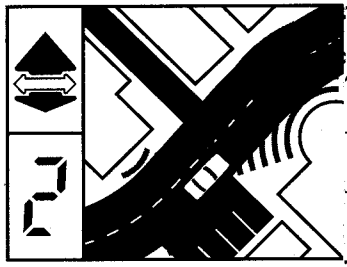


Situation 5: You're driving down the highway and closing on a moving radar ahead of you that's going in your direction.

Your Warning: The Ahead arrow will glow. The Bogey Counter will show 1. You'll hear a slow Beep or Brap that increases *very* slowly. As in Situation 4, your closing rate is very slow, so this alert could last for a long time.

Whenever you encounter an alert that lasts for an abnormally long time, it's probably radar moving along at about your speed. To mute the audio at any time, press the Control Knob.

Situation 6: You're driving through a metro area with the usual number of burglar alarms and microwave door openers.



Your Warning: Because these signals are usually weak, you'll get slow Beep rates (if you hear Brap, it's probably radar, because burglar alarms and door openers are seldom on those frequencies). The Ahead arrow will quickly pass to the side. Or your first alert may be to the side, because these alarms are usually located well off the road.

You may also encounter overlapping alarms. During an alert, you'll hear Bogey ("Dee-Deet") Lock each time an additional bogey is detected. The Bogey Counter shows the total, which, in the case of overlapping alarms, will be 2 or more. If they are in different directions, more than one direction arrow will glow. When multiple directions are being monitored, the computer will decide which is most dangerous and that one will be indicated by a flashing arrow. The audio warning will correspond to that bogey.

The key thing to remember about non-radar alarms on X-band is this: they're weak and they pass to the side quickly. If you find a strong one Ahead, it's probably radar.

You can minimize the annoyance of these X-band alarms by selecting Logic® or Advanced-Logic® modes. See Controls & Functions (pages 13 and 14).