

POCKET RADAR™ – Personal Speed Radar

Congratulations! You have just purchased the world's smallest, fully-capable, Personal Speed Radar . The Pocket Radar™ is a very versatile and convenient tool for making many types of speed measurements. Pocket Radar is a simple, point-and-shoot speed radar for all types of activities. Pocket Radar provides instantaneous speed measurements to +/- 1 Mile Per Hour (MPH) accuracy. Revolutionary new technology advances have now made it possible to fit a high performance speed radar into a shirt pocket. This allows you to take it with you anywhere you go. These instructions are designed to help you achieve the best performance possible by explaining how to make accurate radar speed measurements. Please read all of these instructions before using your new Pocket Radar.

INSTALLING THE BATTERIES:

Pocket Radar uses two AAA Alkaline batteries (included in the box). To install, remove the battery cover from the back of the unit by sliding it down. Insert the batteries in the direction indicated by the polarity marks inside the battery compartment and replace the cover by sliding it back on until it snaps in place.

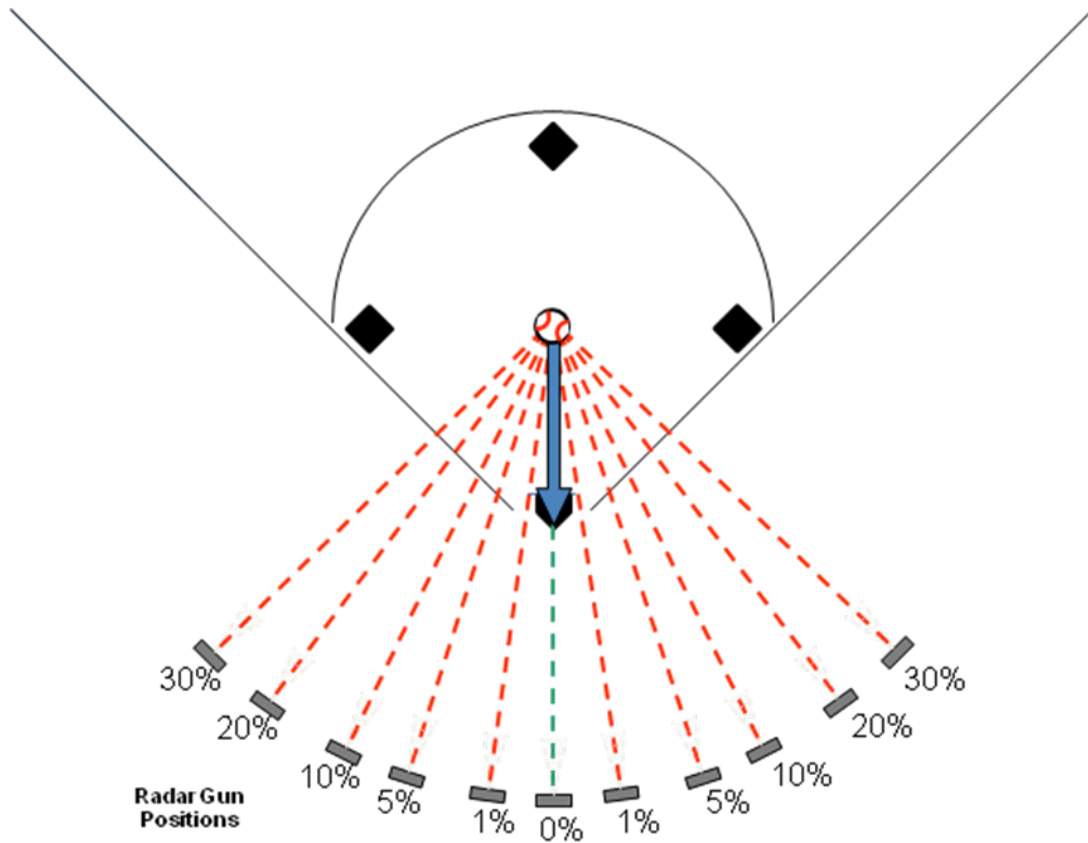
MAKING SPEED MEASUREMENTS:

- **Point and Shoot** – Hold the unit up vertically like a camera phone with the Radar Lens on the back of the unit pointing in-line with the moving target and the display facing you. Do not block the Radar Lens. Aim at the moving target and press the RED button. The unit will turn itself on as soon as this button is pressed.
- **Timing** – It is very important to know when to press the button. For objects that are in motion for a very short time, you will need to press the RED button – once, just as the motion starts. For example – on a baseball, press-and-release the RED button quickly – once, just as the ball is released from the pitcher's hand. It may require a little practice to get used to the timing. If you continually hold the button down, the speed will update approximately once every second, but it will not be possible to precisely time when you take a specific reading.
- **Measurements** – A target can be anything that is moving faster than 7 MPH and up to 375 MPH. When you press the RED button, a small *beam* icon will appear at the top of the LCD display. This indicates the radar beam is active. The radar will continue to be active and searching until a speed is displayed, or a " - - -", appears on the display. This indicates that no measurable target was found within the speed range. This entire sequence occurs in much less than a second.
- **Memory** – Press the black RECALL button to display the memory. Each time you press this button a previous speed reading will be displayed, up to the last 10 readings. The end of the memory is indicated by a " - " on the display. If you continue to press the button beyond the end, it will start over from the top of the list.
- **Power Off** – There is no need to turn the unit off. The Pocket Radar contains an automatic battery saving shut-off feature. After 30 seconds with no button pushes, the unit will automatically power off. There is a battery life indicator icon on the lower left hand corner of the display. Remove the batteries for long-term storage.

RADAR MEASUREMENT CHALLENGES:

Due to the nature of how Doppler speed radar works, all speed radars will measure the relative speed of a target as it approaches or moves away from the speed radar. When the moving target is directly in-line with the speed radar the measured speed will be most accurate. (**Note:** Always be safe. Never put yourself in a position where you could be struck by a moving object.) As the angle between the target and the speed radar increases, either right or left of the center line, the accuracy will decrease. This is referred to as the COSINE error from the mathematical function that calculates the exact speed versus angle. The measured speed will always read lower than the actual speed as you move off the centerline. For small angles, this error will be very small. This is why you see police officers along the side of the road using radar and not sitting down a side street perpendicular to you.

Example: On a typical baseball field right behind the backstop, if you stay within 12 feet to either side of the centerline between the catcher and pitcher, any pitches that are less than 90 MPH will read within 1 MPH of the true speed. As you move further off the center line the readings will become less accurate. Here is a chart and table of the angle versus the percentage error. This error will occur with any type of speed radar.



If you are this far off the line of travel, the speed will read lower by this %

Table of Examples: For more details, visit: www.PocketRadar.com

% error due to Angle	0%	1%	5%	10%	20%	30%
~Angle degrees (+/-)	0°	8°	18°	26°	37°	46°
True Speed (MPH)	Measured Speed (MPH)					
25	25	25	24	23	20	18
35	35	35	33	32	28	25
45	45	45	43	41	36	32
50	50	50	48	45	40	35
60	60	59	57	54	48	42
70	70	69	67	63	56	49
90	90	89	86	81	72	63
100	100	99	95	90	80	70
150	150	149	143	135	120	105
200	200	198	190	180	160	140
350	350	347	333	315	280	245

ENVIRONMENT:

Speed radars are very sensitive instruments for measuring moving objects of any kind. There may be times when the speed reading displayed may not make sense or when there is no apparent moving object present. False readings of this kind are sometimes referred to as “ghost readings”. These are the result of reflections from either a movement of some kind, or an electrical source.

Movement – Any objects that rotate, move or vibrate can create a reading on the display. Large amounts of vibration, such as very loud noises, can result in false readings. Things like motors, fans, nearby traffic or the motion of a person’s arm can be detected by the speed radar. In some cases, if you are measuring the speed of a car at a very close distance, you may pick up the engine, the radiator fan, the heater or A/C fan inside the car, moving hubcaps, etc. In this case, try to make the measurement from a further distance away.

Electrical – Cell phones, wireless devices, radio and TV transmitters, computers, fluorescent lights, televisions, walkie-talkies, etc can also possibly create a false reading.

In the event of getting any of these kinds of false readings, try to identify the possible source and then reposition the speed radar so that you are further away and have the beam pointed away from any problem areas.

For more details, visit: www.PocketRadar.com

SPECIFICATIONS:

Nominal Operating Frequency: 24.125 GHz

Measures from: 7 MPH to 375 MPH

Accuracy: +/- 1 MPH

Range under good radar measurement conditions:

Baseball from 110 feet

Car from 2,000 feet

Size: Height 4.7 inches, Width 2.3 inches, Depth 0.8 inches

Volume < 7.9 cubic inches

Weight: 3.7 ounces without batteries, 4.5 ounces with Alkaline batteries

Typical Battery Life: >10,000 readings on 2 AAA Alkaline batteries

Operating Temperature Range: 20° F to 120° F

Nominal Power Output: 5 mW

Memory Recall function, 10 readings deep

FCC Class B Product Label Statement:

"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."

FCC Class B User Manual Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority to operate the equipment.

LIMITED WARRANTY

Pocket Radar Inc. ("POCKET RADAR") warrants to the original user that this product will be free of defects in workmanship and materials for a period of one year from the date of purchase.

If the product is found by POCKET RADAR to be defective, POCKET RADAR's entire liability and your exclusive remedy for breach of warranty shall be that POCKET RADAR will repair or replace the product and return the product or its replacement to you at no charge, provided that you ship the product to POCKET RADAR at your expense with a description of the defect and subject to the other conditions of this warranty. Should the product prove to be irreparable, POCKET RADAR may substitute an equivalent product of the same or similar style and of a value not in excess of the original purchase price of your instrument.

POCKET RADAR warrants the repaired or replacement product to be free from defects in material and workmanship on the same terms as the product originally purchased.

This warranty will be void if the product, serial number or other identification marks have been defaced, damaged or removed. This warranty does not cover wear and tear due to normal use, or damage to the product as the result of improper usage, neglect of care, alteration, accident or unauthorized repair, nor does this warranty apply to the battery necessary to operate the product.

This warranty is extended to the original retail purchaser only and may not be transferred or assigned to subsequent owners. In order to validate your warranty, you must provide proof of purchase acceptable to POCKET RADAR together with the product shipped for warranty repair/replacement.

Products returned to POCKET RADAR must be pre-authorized by POCKET RADAR with an RMA (Return Material Authorization) number marked on the outside of the package. Visit www.PocketRadar.com/contact for the POCKET RADAR contact to obtain an RMA or for any other question regarding this warranty.

THE FOREGOING WARRANTY IS GIVEN IN LIEU OF AND POCKET RADAR DISCLAIMS ALL OTHER WARRANTIES OR REPRESENTATIONS, EXPRESSED OR IMPLIED, IN FACT OR IN LAW, WITH RESPECT TO THIS PRODUCT, INCLUDING, BUT NOT LIMITED TO, (1) THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, OR (2) THAT USE OF THE PRODUCT WILL BE UNINTERRUPTED AND ERROR FREE.

POCKET RADAR shall have no liability for any indirect or speculative damages (including, but not limited to, consequential, incidental and special damages) relating to the use of or inability to use this product, whether arising out of contract, negligence, tort, or under any warranty theory, or for infringement of any other party's intellectual property rights, irrespective of whether POCKET RADAR had advance notice of the possibility of any such damages, including, but not limited to, loss of use, revenue or profit. In no event shall POCKET RADAR's total liability for all claims regarding the product exceed the price paid for the product. POCKET RADAR neither assumes nor authorizes anyone to assume for it any other liabilities.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

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