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**Digital Sports Radar  
Owner's Manual**

# *Sport 2*





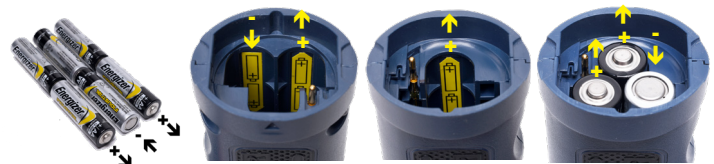
# Stalker Sport 2 Quick Guide for Baseball

# Sport 2

## Charging/powering up the Sport 2

The Sport 2 Starter Package is shipped with non-rechargeable Alkaline batteries. Do not attempt to recharge Alkaline batteries. Doing so will void the manufacturer's warranty and damage the gun.

The Sport 2 Scout and Sport 2 Deluxe Packages are shipped with Ni-MH rechargeable batteries. Ni-MH batteries can be recharged in the gun using the wall charger included with the gun.



Pay attention to the polarity when inserting batteries!

To power up the unit, push the red ON/OFF button.

## Getting Acquainted with the Sport 2

<b>1 MESSAGE</b>	Messages display in the upper left corner (e.g. MPH, KM/H, LOCK, RECALL).
<b>2 PEAK SPEED</b>	Indicates the peak speed (release speed) in large numbers on the lower right.
<b>3 LAST SPEED</b>	Indicates the active or last speed (over-the-plate speed) in the upper right corner.



<b>PEAK</b>	Indicates the Peak Mode window is "ON" allowing peak speed display.
<b>STORE</b>	Is on when recalling speeds from the RECALL queue.
<b>LO BAT</b>	Indicates the batteries are low and need recharging or replacement. LO BAT blinks when batteries are approaching exhaustion.
<b>XMIT</b>	Indicates the gun is transmitting and is able to take readings.

<b>MENU</b> (Blue Button)	This button enters the <b>MENU</b> system to adjust the gun's settings. To exit the menu, press the trigger.
<b>RECALL</b> (Silver Button)	Displays the last five speeds recorded and stored. Once the radar gun is turned off the recall memory is erased.
<b>SELECT</b> (Blue Button)	Once a feature in the menu is chosen, use the <b>SELECT</b> button to change the setting for that feature.
<b>TRANSMIT</b> (Silver Button)	Toggles the transmitter on and off for continuous transmission (instead of trigger activation).

# Stalker Sport 2 Quick Guide for Baseball

## Default Baseball Settings

The Sport 2 is pre-configured for baseball applications. For instructions on changing the settings, please refer to the owners manual.

- Low Speed** ..... 30 mph (48 km/h, 26 knots, 13 m/s)
- Range** ..... 3 – For maximum sensitivity
- Peak ON/OFF (button)** ..... ON - This shows ball release speeds.
- Auto-Clear Delay** ..... 2 seconds – After loss of target tracking, the radar holds the speeds on the display before clearing them.

## Turning the Transmitter On/Off

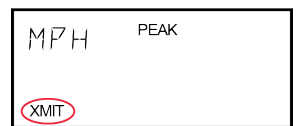
The silver **TRANSMIT** key is used to turn the transmitter ON/OFF.



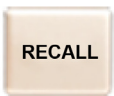
There are two ways to turn on the radar transmitter to begin operating:

- Trigger Transmit: Press the trigger to transmit.
- Transmit Button: Press the silver **TRANSMIT** button to toggle the transmitter ON or OFF.

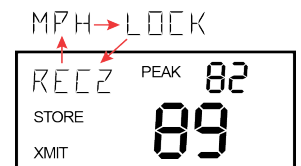
NOTE: The **XMIT** icon displays when the gun IS transmitting. The **XMIT** icon does not display when the gun IS NOT transmitting.



## Recalling Speeds



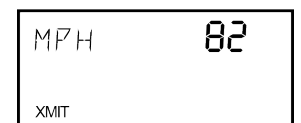
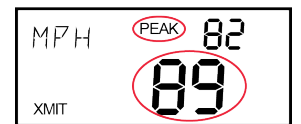
The silver **RECALL** button redisplay the last five speed readings that were measured. They are stored in a sequential mode as the **RECALL** button is pressed. The message window cycles through the recall number, speed units, and lock, if on. The **STORE** icon is on while the recalled speeds are displayed.



## The PEAK Function

The Peak option activates the automatic top speed display in the PEAK SPEED WINDOW. For example, when tracking a baseball pitch, the peak speed is the same as the release speed since a ball only slows down after it is thrown. When the Peak mode is ON, the **PEAK** icon appears on the display and only the highest speed for each target acquired displays in the Peak window. The active, changing target speed displays in the upper right window.

NOTE: The **PEAK** icon and speed window display when the Peak option IS selected. The **PEAK** icon and speed window do not display when the Peak option IS NOT selected.



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## Introduction

Congratulations! You have purchased the smallest and most accurate baseball gun-type system available. The Stalker SPORT 2 radar is specifically designed to measure the speed of balls thrown by baseball players.

The Stalker SPORT 2 radar sends out very-high-frequency radio waves and measures the change in the frequency after they bounce off a moving object. This is commonly referred to as Doppler Radar. This invisible radio wave is extremely low power (about 1/200th of a watt) and is completely safe for close and continuous operation.

The Stalker SPORT 2 is a true digital radar system. The SPORT 2 converts the reflected microwave signals into a digital stream of data. The gun's own computer then processes this data stream using sophisticated programming, to interpret, filter, and measure the speeds. This technology is closely related to the compact digital disc and modern personal computers. This type of radar system has the potential to provide substantially superior performance and accuracy over conventional radar systems.

While the technology in the Stalker SPORT 2 is quite advanced, its operation is quite simple. You need only to press the ON/OFF key and press the trigger to begin measuring baseball release speed and over-the-plate speed.

If you want to be a power user and try other features and settings, reading through this manual will help you take full advantage of the other features and capabilities of the Stalker SPORT 2.

Most of all, have fun!

## What's Included

The components included with your radar are listed below. If you are missing any parts, or if you would like to upgrade your package, contact Stalker Radar at 1-877-782-5537.

### SPORT 2 Starter Package

K-Band Radar Gun

**6-AA Alkaline Batteries (NOT rechargeable)**

Operator Manual

Rugged Shipping Box

### SPORT 2 Scout Package

K-Band Radar Gun

**6-AA Nickel Metal Hydride (NiMH) Batteries (rechargeable)**

Wall Battery Charger

Operator Manual

Rugged Shipping Box

### SPORT 2 Deluxe Package with Hard Case

K-Band Radar Gun

**6-AA Nickel Metal Hydride (NiMH) Batteries (rechargeable)**

Wall Battery Charger

Operator Manual

Hard Case



## Sport 2 Basics

The Stalker SPORT 2 has several features that allow the gun's optimal performance in baseball applications. With some basic understanding, the gun is very simple to operate.

### Power On and GO

Power is supplied from 6 AA batteries installed in the handle. **Be sure to refer to Page 5 for the correct way the batteries must be oriented.**

Turn the gun ON by pressing the red **ON/OFF** button.

Squeeze the trigger to begin measuring speeds.



### What Do Those Other Buttons Do?

There are four buttons that control the radar gun functions: the two blue buttons work together for changing menu settings, while the silver buttons are operational.

<b>MENU</b> (Blue Button)	This button enters the <b>MENU</b> system to adjust the gun's settings. To exit the menu, press the trigger.
<b>RECALL</b> (Silver Button)	Displays the last five speeds recorded and stored. Once the radar gun is turned off the recall memory is erased.
<b>SELECT</b> (Blue Button)	Once a feature in the menu is chosen, use the <b>SELECT</b> button to change the setting for that feature.
<b>TRANSMIT</b> (Silver Button)	Toggles the transmitter on and off for continuous transmission (instead of trigger activation).

## What's in the LCD?

The LCD (Liquid Crystal Display) is the heart of the Sport 2. That's where it tells you the speeds you've measured, and also the status of the gun.



## LCD Display Windows

These three 'windows' are the variable areas on the LCD.

<b>❶ MESSAGE</b>	Messages display in the upper left corner (e.g. MPH, KM/H, LOCK, RECALL).
<b>❷ PEAK SPEED</b>	Indicates the peak speed (release speed) in large numbers on the lower right.
<b>❸ LAST SPEED</b>	Indicates the active or last speed (over-the-plate speed) in the upper right corner.

## LCD Display Icons

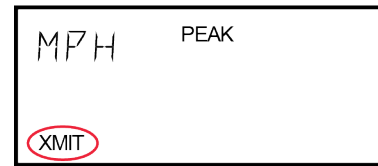
Icons switch on and off to display radar status.

<b>PEAK</b>	Indicates the Peak Mode window is "ON" allowing peak speed display.
<b>STORE</b>	Is on when recalling speeds from the RECALL queue.
<b>LO BAT</b>	Indicates the batteries are low and need recharging or replacement. LO BAT blinks when batteries are approaching exhaustion.
<b>XMIT</b>	Indicates the gun is transmitting and is able to take readings.

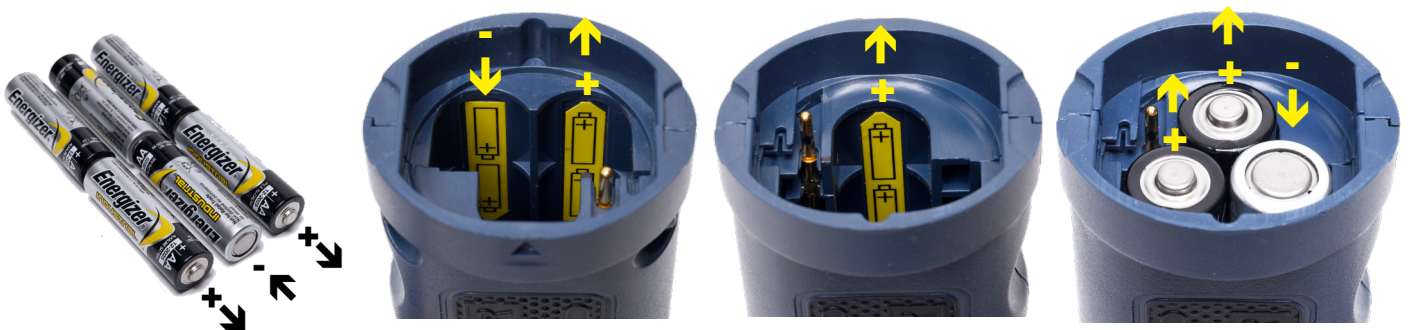
## Turning the Transmitter ON and OFF

There are two ways to turn on the radar transmitter to begin operating:

- Trigger Transmit: Press the trigger to transmit.
- Transmit Button: Press the silver **TRANSMIT** button to toggle the transmitter ON or OFF.



NOTE: The **XMIT** icon displays when the gun IS transmitting. The **XMIT** icon does not display when the gun IS NOT transmitting.



Pay attention to the polarity when inserting batteries!

## Powering the SPORT 2

**WARNING: Do not attempt to recharge alkaline batteries.** They cannot be recharged. If your SPORT 2 came with alkaline batteries, attempting to recharge them may damage the SPORT 2 and will void the warranty.

**Alkaline Batteries** - The battery compartment in the SPORT 2 Starter Package contains 6 alkaline non-rechargeable batteries, which will power the gun for about 5 hours of continuous transmitting.

**Nickel Metal Hydride (NiMH) Batteries** - The battery compartment in the SPORT 2 Scout Package and the SPORT 2 Deluxe Package with Hard Case contains 6 NiMH rechargeable batteries. When fully charged, one set of six batteries will power the gun for about 5 hours of continuous transmitting. The NiMH batteries can be recharged (in 12 hours) in the gun using the included Wall Charger. Optionally, the batteries can be removed and charged with a NiMH battery charger, found in retail stores.

**External** - To power the SPORT 2 from an external 12VDC source instead of using batteries, use the optional 12V DC Cigarette Cable attached to the 9-pin connector on the side of the gun. The 12V DC Cigarette Cable does not charge the batteries while it is supplying power to the Radar.

## Transmitter ON and OFF Details

The radar transmitter must be turned ON to measure speed. There are two ways to transmit: 1) Press the trigger, or 2) press the **TRANSMIT** button.

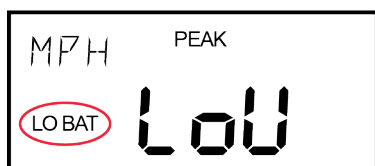
Trigger Transmit - Squeeze and hold the trigger in to transmit. In the Continuous trigger mode (default) the transmitter turns off when the trigger is released and any current readings are left on the screen. Since the transmitter draws most of the power, trigger operation helps to save battery life. Other trigger modes are explained in the Option Menu section.

**TRANSMIT** Button - The silver **TRANSMIT** button toggles the transmitter ON and OFF. Each time you push this button, it switches between transmit and hold. Using this button to turn on the transmitter allows the gun to continually operate automatically, without the need to press the trigger.

NOTE: The **XMIT** icon displays when the gun IS transmitting.  
The **XMIT** icon does not display when the gun IS NOT transmitting.

## Low Battery Warning

The **LO BAT** icon blinks when the battery runs low. The SPORT 2 operates for a short time after this. Operation is disabled when the battery voltage falls to an extremely low level. **LoU** displays in the large main window in this case. Now is the time to recharge the NIMH batteries or replace the Alkaline batteries.



NOTE: WITH NIMH BATTERIES, DO NOT CHARGE THE BATTERIES UNTIL THE GUN DISPLAYS LO BAT.

## Charging the Batteries

**WARNING: Do not attempt to recharge Alkaline batteries** if your SPORT 2 came with these type of batteries. Attempting to recharge alkaline batteries may damage the SPORT 2 and will void the warranty.

Plug the connector of the wall charger into the 9-Pin connector on right side of the SPORT 2 when the **LO BAT** indicator blinks. Then plug the wall charger into a 110-120 volt wall outlet. The NiMH batteries should take about 12 hours to recharge.

NiMH batteries perform best when they are fully discharged and then fully recharged.

## How To Save Battery Life

Since the transmitter has the highest current draw, turn the transmitter off whenever you are not taking readings.

If you use the trigger to start and stop transmitting, it's easy to save battery life.

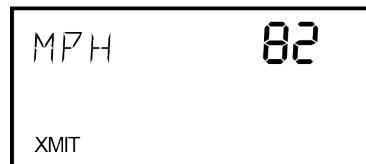
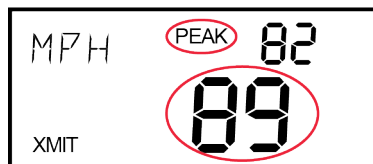
If you tripod mount the gun, (and use the silver **TRANSMIT** button to transmit) then turn the transmitter off between sessions.

## The Peak Function

The Peak option activates the automatic top speed display in the PEAK SPEED WINDOW. For example, when tracking a baseball pitch, the peak speed is the same as the release speed since a ball only slows down after it is thrown. When the Peak mode is ON, the **PEAK** icon appears on the display and only the highest speed for each target acquired displays in the Peak window. The active, changing target speed displays in the upper right window.

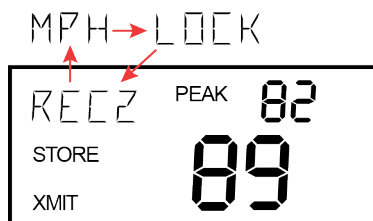
NOTE: The **PEAK** icon and speed window display when the Peak option IS selected.

The **PEAK** icon and speed window do not display when the Peak option IS NOT selected.



## The Recall Function

The silver **RECALL** button redisplay the last five speed readings that were measured. They are stored in a sequential mode as the **RECALL** button is pressed. The message window cycles through the recall number, speed units, and lock, if on. The **STORE** icon is on while the recalled speeds are displayed.



## Sleep Mode and Auto-Shutdown Feature

The SPORT 2 has a sleep mode to conserve battery life when it is not being operated. The sleep mode is automatically initiated after about 10 seconds of inactivity when the transmitter is off. Squeezing the trigger or pressing any key immediately “wakes” the gun and brings it back into operation. The SPORT 2 also has a 30-minute time-out auto-shutdown feature. After 30 minutes in sleep mode, the SPORT 2 automatically shuts off.

## Recommended Settings for Baseball Scouts

It is important that the gun is set correctly when measuring baseballs. Check these settings:

<b>Low Speed</b>	30 MPH
<b>Range</b>	3 - Maximum sensitivity is needed
<b>Peak ON/OFF</b>	ON - This is for release speed numbers
<b>Auto-Clear Delay</b>	2 seconds – After loss of target tracking, holds the speeds on the display before clearing them



# The Operator Menu

## Setting Up the Radar Unit

Setting up the radar unit is fast and easy.

- Briefly press the **MENU** key on the keypad to enter the OPERATOR MENU.
- Briefly press the **MENU** key again to step through the features.
- Press the **SELECT** key to change the settings.
- To exit the Operator Menu, press the trigger to save all settings and return to normal operation.

The factory default for each setting is indicated by the underlined text in the Operator Menu table.

Menu Step	Description	FEATURE Step down by pressing MENU key	SETTINGS Change using the SELECT key
MENU Step ORDER	Description	MESSAGE WINDOW	Main Window ( <u>underline</u> indicates factory default)
1	Range	RANGE	1, 2, <u>3</u>
2	Peak On / Off	PEAK	OFF, <u>On</u>

## The Range Setting

The range setting affects the sensitivity (clocking distance) of the radar. The settings are:

1	Setting the range to 1 decreases the gun's sensitivity and shortens its clocking distance. The 1 range setting is handy for clocking objects close to the gun and when you want to restrict the gun from "seeing" objects farther out in the background.
2	Setting the range to 2 sets the gun to a medium range in its clocking distance.
3	Setting the range to 3 increases the gun's sensitivity and lengthens the clocking distance. It "looks" as far away as possible for targets and gives the gun the highest level of performance. This is the default setting.

# The Option Menu

## Selecting Options

Selecting options is more involved (but still easy) because there are 15 features to select.

- Enter the Operator Menu as described on the previous page. To enter the Option Menu, press and hold the **MENU** button (while in the Operator Menu).
- Briefly press the **MENU** button again to step through the features.
- Press the **SELECT** key to change the settings.
- To return to the Operator Menu while in the Option Menu, press and hold the **MENU** button.
- To exit the Option Menu, press the trigger to save all settings and return to normal operation.

The factory default for each option setting is underlined in the following Option Menu chart.

Menu Step	Description	FEATURE Step down by pressing MENU key	SETTINGS Change using the SELECT key
MENU Step ORDER	Description	MESSAGE WINDOW	Main Window ( <u>underline</u> indicates factory default)
1	Low Speed	LOW	OFF, 15, <u>30</u>
2	Units	<u>MPH</u> , KM/H	<u>Unit</u>
3	Resolution	RES	<u>ones</u> , tenths
4	Auto-Clear Delay	CLEAR	0SEC, 1SEC, <u>2SEC</u> , 3SEC, 4SEC, OFF
5	Trigger Function	TRIG	<u>On</u> , SS, Loc
6	Aux Trigger Function	AUX	<u>OFF</u> , Stop
7	Stopwatch Mode	STOP	<u>Std</u> , LAP, SPlt
8	Cosine Angle	ANGLE	<u>0</u> , 5, 10, 15, 20, 25, 30, 35, 40, 45
9	Serial Port Speed	BAUD	12, 24, 48, <u>96</u> , 192, 384
10	Serial Port Format	FOR	-, A, <u>AP</u> , Co l
11	Leading Zero	LEAD0	2Ero, <u>SPAC</u> , none
12	Message Termination	TERM	<u>cr</u> , CrLf, u Cr, u Cl
13	Peak Message Type	PKMSG	<u>Cont</u> , S in9
14	Reset	RESET	YES, <u>no</u>
15	Reset Confirmation	SURE?	YES, <u>no</u>

# Option Menu Steps Explained

## 1. Low Speed

<u>When Units Are:</u>	<u>Low Speed Settings Are:</u>
MPH	OFF, <u>15</u> , <u>30</u>
KM/H	OFF, <u>25</u> , <u>50</u>

## 2. Units

MPH or KM/H

## 3. Resolution

Select **ONE5** to display speed in whole units, as 25 MPH, or **TENTH** to display speed with tenths, as 25.4 MPH.

## 4. Auto-Clear Delay

- The time the speed reading is held after the target is lost and before the display screen clears. If **OFF**, the speed displays until the next speed is acquired.

## 5. Trigger Function

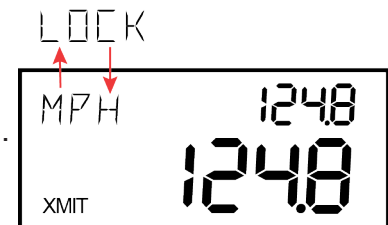
- The Trigger settings are **CON** (Continuous), **S5** (Start / Stop), and **LOC** (Lock). The trigger settings function as follows:

Transmit	Transmit Option	Action
ON / OFF	<b>CON</b>	Press to transmit, release to hold.
ON / OFF	<b>S5</b>	Press and release to transmit, press and release to hold.
ON	<b>LOC</b>	Press and release to lock speed(s), press and release to release locked speed(s).

### Using the Trigger to Lock Speeds

The trigger serves two functions. It can control the transmitter, or it can be used as a speed locking device.

When the gun is placed into continuous transmit mode using the silver **TRANSMIT** button or if the Trigger Option is on **Loc** (lock), the trigger does not affect the transmitter. Instead, press the trigger to lock the currently displayed speed to the main window. If Peak Mode is on, the active speed and the peak speed just freeze in their respective windows. **LOCK** alternately displays in the upper left message window. Press the trigger a second time to unlock the readout.





This function is useful if the operator needs to manually hold readings.

NOTE: When the Loc setting is selected in the Option MENU, the Transmit function is turned on as if the silver **TRANSMIT** button had been pressed. After exiting, clicking the trigger alternately locks transmission speed on the first trigger click, and releases it on the second trigger click.

## 6. Aux Trigger Function

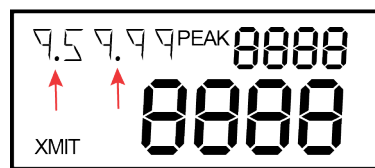
The Aux Trigger settings are: OFF = ignored, STOP = stopwatch.

## 7. Stopwatch Mode

This feature is only displayed (in the OPTIONS MENU) if the Aux Trigger is set to STOP. The Optional Stopwatch Cable is needed to use the stopwatch feature. The stopwatch may be set to standard, lap, or split timer. The timer displays in the MESSAGE WINDOW. Press and hold the stopwatch trigger for 1 second to stop the timer and go back to radar mode.

Stopwatch Timer Modes	
Standard Timer	Successive presses of the stopwatch trigger start the stopwatch at 0000 or stop the stopwatch.
Lap Timer	Each press of the stopwatch trigger displays the time since the last trigger press, and resets the timer to 0000 in the background.
Split timer	Each press of the stopwatch trigger displays the current cumulative time.

### Timer Display Under 10 minutes:



### Timer Display Over 10 minutes:



## 8. Cosine Angle

The cosine angle is 0° – 45°. See Angle Error on Page 13 for details.

## 9. Serial Port Speed

1200, 2400, 4800, 9600, 19200, or 38400.

## 10. Serial Port Format

The “-“ (dash) is for no serial output, the A format is for active target speed, the AP format is for peak speed, and the Col format duplicates the output of the legacy Stalker Sport gun.

## 11. Leading Zero

	Zero =	090	090.1
(only if format = A or AP)	Space =	90	90.1
	None =	90	90.1

## 12. Message Termination

	Cr = Carriage Return only (0x0D)
(only if format = A or AP)	CrLF = Carriage Return & Line Feed (0x0D, 0x0A)
	u Cr = units followed by Carriage Return e.g. “MPH” 0x0D
	u CL =units followed by Carriage Return & Line Feed, e.g. km/h 0x0D 0x0A

## 13. Peak Message Type

	Continuous = continually streams peak speed
(only if format = AP)	Single = sends one peak speed message per acquired target

## 14. Reset

Restore factory settings.

## 15. Reset Confirmation

Steps display when the **RESET** option is selected.

To reset all settings to the factory defaults, select **YES** and press the **MENU** button again, then **SURE?** will appear. **SELECT YES** again. Press the trigger to confirm reset.

If you do not want to change the settings to the default settings leave the setting on **NO**, since it is the default choice, and press the trigger to exit.

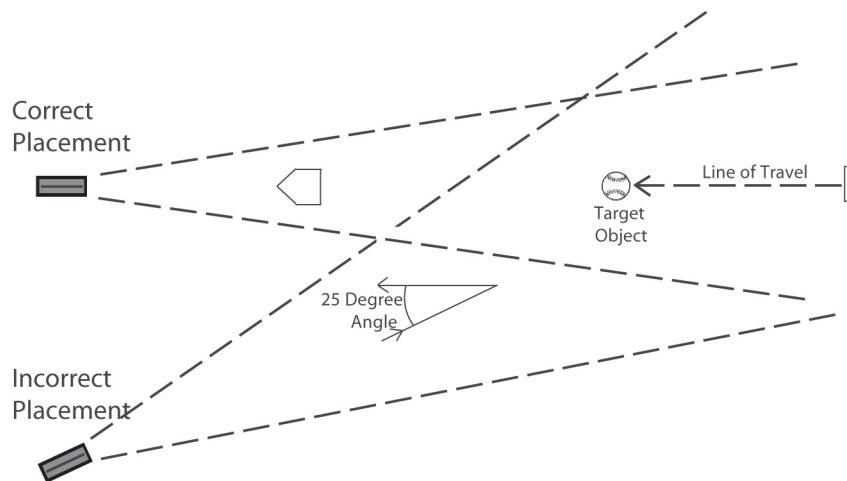
## Angle Errors

The most common mistake made with all radar guns is trying to clock targets at angles.

All radar guns work on the Doppler principle and need to clock objects moving directly at or away from the gun. Clocking at an angle with a stationary radar gun results in angle error, and the gun displays a speed that is LOWER than the actual speed.

## Radar Gun Placement

For accurate readings, the radar gun must be placed in the line of travel of the target. At slight angles, the error is very small; however, at larger angles, the error becomes substantial.



NOTE: The SPORT 2 can automatically adjust for angle error by changing the Cosine Angle settings in the Option MENU.

## Calculating Angle Errors

If you know the angle at which you are clocking, you can calculate the actual speed by taking the radar reading and dividing by the cosine of the angle.

For example: if you are clocking at 30 degrees, and the gun displays 129.9 mph, take 129.9 and divide by the cosine of 30 degrees (0.866) to get a true speed of 150.0 mph.

## Cosine Angle Error Chart

	0 Degrees	5 Degrees	10 Degrees	15 Degrees	30 Degrees	45 Degrees	90 Degrees
<b>True Speed</b>	0% Error	0.4% Error	1.5% Error	3.4% Error	13.4% Error	29.3% Error	100% Error
25.0 mph	25.0 mph	24.9 mph	24.6 mph	24.1 mph	21.7 mph	17.7 mph	0 mph
50.0 mph	50.0 mph	49.8 mph	49.2 mph	48.3 mph	43.3 mph	35.4mph	0 mph
75.0 mph	75.0 mph	74.7 mph	73.9 mph	72.4 mph	65.0 mph	53.0mph	0 mph
100.0 mph	100.0 mph	99.6 mph	98.5 mph	96.6 mph	86.6 mph	70.7mph	0 mph
125.0 mph	125.0 mph	124.5 mph	123.1 mph	102.7 mph	108.3 mph	88.4mph	0 mph
150.0 mph	150.0 mph	149.4 mph	147.7mph	144.9 mph	129.9 mph	106.1 mph	0 mph

# Interference Problems

## Interference Frequencies

The Stalker Sport 2 radar transmits at a frequency of 24.125 GHz (24,125,000,000 Hz), using a K-band transmitter. The receiver is designed to read the Doppler frequency (the change in frequency) between 360 Hz and 11,000 Hz. There are very few devices other than another radar gun that could cause interference in a radar gun's transmission frequency range. However, there are a number of devices that could interfere with a radar gun in the receiver's frequency range.

## What Does Interference Do?

Interference can cause a radar gun to read random readings, or make it harder for the radar gun to "see" the intended target.

Random readings are an obvious sign that there is interference. However, a loss of sensitivity can be subtle. A common situation occurs when a large number of professional baseball scouts operate many radar guns in close proximity.

A loss of sensitivity can cause the radar gun to be unable to "see" far enough away to get the ball speed right when it leaves the pitchers hand. Then, as the ball gets closer to the plate, the radar is able to get a reading, but only after the ball has slowed down. The result: the peak speed registers lower than it actually is.

## Sources of Interference

There are two main sources that can cause ghost (random) readings in radar guns: electrical devices and objects that move or vibrate.

Electrical sources include television monitors, fluorescent lights, cellular phones, computers, some radio transmitters, and power transformers.

Moving or vibrating objects include ventilation fans, motors, and blowing debris that can produce a nearly constant speed reading.

## How to Eliminate Interference

If you are experiencing erroneous readings, try these solutions:

Change your position to change where the gun is aimed.

Lower the sensitivity by changing the Range on the Operator MENU to 1 (low setting).

Change the Option MENU Low Speed setting to a setting with a higher low-speed cutoff if the readings are at low speeds (often interference from nearby motors).

## SPORT 2 Accessories

The Stalker Sport 2 radar gun has a host of optional accessories. For current pricing and availability, contact sales at 1-888-STALKER.

### Accessories



- Stopwatch Control Cable – a 4-foot cable with momentary switch that connects to the 9-Pin connector. Part number: 155-2269-00.



- 12VDC CIG Cable – Connects to the 9-Pin connector and plugs into a cigarette lighter receptacle. (Powers gun only; does not charge batteries in the gun.) Part Number: 155-2270-00.



- RS-232 Serial Cable that connects to the 9-pin connector for RS-232 data output. Part number: 155-2287-00.

These, as well as many other accessories, are available on our website:

[StalkerSportRadar.com](http://StalkerSportRadar.com).

## Service Information

### A Check List Before Servicing the SPORT 2 Radar

Check the Settings - If you are having a problem with your SPORT 2, first make sure that the settings are correct for your application. Read the Operator and Option Setup Menu section. Call customer service at 1-877-STALKER if you need help with this.

Check the Battery - If the SPORT 2 does not turn on, the problem is usually with the batteries. Try charging the batteries if they are NiMH batteries, replace the batteries if they are Alkaline. If it still does not turn on, you could use a volt meter to see if the batteries are producing at least 7.5 volts. You may need to order new batteries.

Call Customer Service - If the problem is not rectified with these steps, call Customer Service at 1- 877-STALKER for help. A service representative will determine if the gun needs to be sent to the factory.

### Factory Service Center Address

Applied Concepts, Inc.  
Attn. Repair Department  
855 East Collins Blvd.  
Richardson, TX 75081  
1-877-STALKER Toll Free  
Phone: (972) 801-4807  
Fax: (972) 398-3781

### Warranty Information

The SPORT 2 radar is covered for One (1) full year, parts and labor, against defects in workmanship, parts, or materials, and is guaranteed to operate within specifications for that period.

Stalker Radar will repair or replace, at its option, any component or system found to be defective. The customer is responsible for shipping the defective product to the factory (freight prepaid), and Stalker Radar will pay for the return shipping via UPS ground service back to the customer. Any expedited air shipping charges are to be paid by the customer.

This full warranty does not cover damage due to dropping, water, salt, improper voltage, fire, charging Alkaline batteries in the unit, attempted repairs or modifications by an unauthorized service agent, or any other unusual treatment.

## SPORT 2 Specifications

### Performance Specifications

Speed Range	5 - 150 MPH
Accuracy	+ 3% of reading
Max. Clocking Distances	300 Feet with unobstructed view

### Microwave Specifications

Operating Frequency	24.125 GHz (K-Band) +/- 50 MHz
Polarization	Circular Polarization
3 db Beam width	14 Degrees Nominal (15 Degrees Maximum)
Microwave Source	Gunn-Effect Diode
Receive Type	Schottky Barrier Mixer Diode
Power Output	10 Milliwatts Nominal

The STALKER SPORT2 Complies with Part 15 of the FCC rules.  
FCC ID #IBQACMI005.

### General Specifications

Product Type	Stationary Doppler Radar
Computer Processor	Digital Signal Processor
Display Type	Liquid Crystal
Operating Temperatures	-20°F to +120°F
Storage Temperatures	-40°F to +140°F

### Electrical Specifications

Battery Capacity	7.5 VDC, 1.6 Ah, Ni-MH
Current Requirements (At 7.5 Volts DC)	Transmitting - 0.35 Amps Standby - 0.14 Amps Sleep Mode - 0.11 Amps

### Physical Specifications

Weight (with batteries)	1.75 Pounds
Dimensions	8" H x 3" W x 6.5" L
Housing Material	ABS

## Serial Communications Protocol

An RS-232 or RS-485 Serial Cable is required for data communications to speed display boards, computers, and other electronic devices. The data connector is on the side of the unit. The 9-Pin D Connector has the following pinout: Pin 1 is on the top right, and Pin 9 is on the bottom left.



<b>Pin 1 AUX INPUT</b>	Stopwatch trigger input
<b>Pin 2 RS-232 TX</b>	Transmit data-stream
<b>Pin 3 RS-232 RX</b>	Receive (not used at this time)
<b>Pin 4 6.6 V OUT</b>	Output (limited to 50 mA)
<b>Pin 5 Ground</b>	Ground
<b>Pin 6 Charger Input</b>	120V AC Wall Charger
<b>Pin 7 RS-485-A</b>	Transmit data-stream
<b>Pin 8 RS-485-B</b>	Transmit data-stream
<b>Pin 9 Voltage Input</b>	External voltage input, 6VDC to 16 VDC

BAUD Rate      1200 to 38400 BAUD – default = 9600 BAUD  
 Data Format    8 Data Bits  
                   No Parity  
                   1 Stop Bit



## Serial Port Message Format

### A and AP Format (Active Target or Peak Speed Only) – Resolution = ones

Byte #	Description
1	Speed hundreds digit (ASCII)
2	Speed tens digit (ASCII)
3	Speed ones digit (ASCII)
4(+)	Carriage Return (0x0D)

### A and AP Format (Active Target or Peak Speed Only) – Resolution = tenths

Byte #	Description
1	Speed hundreds digit (ASCII)
2	Speed tens digit (ASCII)
3	Speed ones digit (ASCII)
4	Decimal Point (0x2E)
5	Speed tenths digit (ASCII)
6(+)	Carriage Return (0x0D)

### Col Format (Last or Peak) – Resolution = ones

Byte #	Description
1	Speed hundreds digit (ASCII)
2	Speed tens digit (ASCII)
3	Speed ones digit (ASCII)
4	ASCII Colon = 0x3A
5	ASCII Carriage Return = 0x0D

### Col Format (Last or Peak) – Resolution = tenths

Byte #	Description
1	Speed hundreds digit (ASCII)
2	Speed tens digit (ASCII)
3	Speed ones digit (ASCII)
4	Speed tenths digit (ASCII)
5	ASCII Carriage Return = 0x0D

The Col format (named for the colon in byte 4) duplicates the format of the legacy Stalker Sport gun.

- It never sends more than 25 speed messages per second (no faster than once per 40 ms).
- If the speed isn't changing, it only sends a new speed message every 1/3 second as a "keep-alive" signal.

## The Leading Zero setting affects formats A and AP:

When set to `SPACE` (default setting), ASCII spaces are used for leading zeros:

```
"500 (CR)" or "500.0 (CR)"
" 50 (CR)" or " 50.0 (CR)"
"  5 (CR)" or "  5.0 (CR)"
```

When set to `ZEROS`, ASCII zeros are used for leading zeros:

```
"500 (CR)" or "500.0 (CR)"
"050 (CR)" or "050.0 (CR)"
"005 (CR)" or "005.0 (CR)"
```

When set to `NONE`, leading zero characters are not transmitted:

```
"500 (CR)" or "500.0 (CR)"
"50 (CR)" or "50.0 (CR)"
"5 (CR)" or "5.0 (CR)"
```

The Message Termination setting affects formats A and AP:

When set to `CR` (default setting), each message is terminated with only a carriage return: (0x0D).

When set to `CRLF`, each message is terminated with a carriage return and a line feed: (0x0D, 0x0A).

When set to `u CR`, each message is terminated with the speed's units and a carriage return: "500MPH(0x0D)".

When set to `u CRLF`, each message is terminated with the speed's units, a carriage return and a line feed: "500MPH(0x0D0A)".

The STALKER SPORT 2 Radar  
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